

M.G.T. AND G.C.C. TRAINING UNIT

# HOW TO KEEP HOUSE



• CLEAN • SANITIZE • DISINFECT •

INSTRUCTIONAL GUIDE

# **How to Keep House: Maintaining a Clean and Safe Environment**

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# Table of Contents

A Word of Gratitude.....	Page v
Acknowledgements.....	Page vii
Chapter 1: The Purpose of This Guide.....	Page 1
Chapter 2: What are Germs and How do They Cause Illness?.....	Page 3
Section 2.1 Types of Germs.....	Page 3
Section 2.2 Other Carriers of Germs.....	Page 5
Section 2.3 How Germs Enter the Body and Cause Illness.....	Page 5
Section 2.4 Why Some People Get Sick and Others Don't.....	Page 7
Chapter 3: Getting Rid of Germs—The Importance of Cleaning, Sanitizing, and Disinfecting.....	Page 11
Section 3.1 Differences Between Cleaning, Sanitizing and Disinfecting.....	Page 11
Chapter 4: How to Clean.....	Page 15
Section 4.1 Map Out Your Home Cleaning Strategy.....	Page 16
Section 4.2 Assess Your Cleaning Tools and Products.....	Page 16
Section 4.3 Decluttering.....	Page 30
Section 4.4 Tips for Effective Cleaning.....	Page 34
Chapter 5: How to Dust.....	Page 37
Section 5.1 Tools for Dusting.....	Page 38
Section 5.2 Dusting the Home.....	Page 39
Section 5.3 What Surfaces Need Dusting.....	Page 47
Section 5.4 Tidying Your Tools.....	Page 48
Section 5.5 Other Strategies to Reduce Dust Accumulation in Your Home.....	Page 48
Chapter 6: How to Clean: Cleaning Surfaces in Your Home.....	Page 51
Section 6.1 Use and Care Guidelines.....	Page 51
Section 6.2 Tools for Cleaning Surfaces.....	Page 53
Section 6.3 Products for Cleaning Surfaces.....	Page 54
Section 6.4 How to Clean Surfaces.....	Page 56
Section 6.5 Cleaning Non-porous Surfaces.....	Page 57
Section 6.6 Cleaning Porous Surfaces.....	Page 85
Section 6.7 Cleaning Surfaces in Action.....	Page 90
Chapter 7: Sweeping, Vacuuming, Mopping.....	Page 95
Section 7.1 Sweeping.....	Page 95
Section 7.2 Vacuuming.....	Page 98
Section 7.3 Mopping.....	Page 105
Chapter 8: How to Sanitize.....	Page 113
Section 8.1 Decide Where You Need to Sanitize.....	Page 113

Section 8.2 Choose Your Sanitizing Tools & Products.....	Page 113
Section 8.3 How to Sanitize Using Sanitizing Solutions.....	Page 125
Section 8.4 Sanitizing Surfaces with Steam.....	Page 131
Chapter 9: How to Disinfect .....	Page 135
Section 9.1 Decide Where and When to Disinfect.....	Page 135
Section 9.2 Choose Your Disinfecting Tools & Products.....	Page 136
Section 9.3 The Science Behind Disinfection.....	Page 149
Section 9.4 How to Disinfect Using Disinfecting Solutions.....	Page 150
Section 9.5 Operation Disinfect!.....	Page 150
Section 9.6 Disinfecting Soft Surfaces.....	Page 153
Section 9.7 Disinfecting Laundry.....	Page 153
Section 9.8 Disinfecting Surfaces with Heat.....	Page 154
Chapter 10: Cleaning Your Home When a Person Has a Virus .....	Page 157
Section 10.1 Preventing the Spread of a Virus.....	Page 157
Section 10.2 Isolate and Contain the Sick Person.....	Page 158
Section 10.3 Immediately Clean and Disinfect the Home.....	Page 161
Section 10.4 Continue to Clean and Disinfect Post Sickness.....	Page 164
Chapter 11: Hazards of Cleaning Products.....	Page 167
Section 11.1 Cleaning Product Labels.....	Page 167
Section 11.2 Safety Data Sheets.....	Page 171
Section 11.3 Chemicals That Cause Health Hazards.....	Page 172
Section 11.4 Physical Hazards of Cleaning Products.....	Page 177
Section 11.5 Health Hazards of Cleaning Products.....	Page 178
Section 11.6 Specific Health Hazards.....	Page 180
Section 11.7 Risks vs. Hazards of Cleaning Products.....	Page 182
Section 11.8 What's in Your Cleaning Cabinet?.....	Page 183
Chapter 12: Healthy Cleaning.....	Page 185
Section 12.1 Healthy Cleaning vs. Green Cleaning.....	Page 185
Section 12.2 Choosing Safer Products.....	Page 185
Section 12.3 Homemade Cleaning Products.....	Page 189
Chapter 13: Protecting Our Children When Cleaning.....	Page 195
Section 13.1 Choose Safer Cleaning Products.....	Page 195
Section 13.2 Store Cleaning Products Out of Reach of Children....	Page 195
Section 13.3 Remove Small Children from the Area When Cleaning.....	Page 196
Section 13.4. Be Prepared for an Accident.....	Page 196
Section 13.5 Teach Children How to Safely Clean.....	Page 198
Chapter 14: Cleaning Your Home—Daily, Weekly, & Monthly.....	Page 201
Section 14.1 Daily Cleaning.....	Page 201
Section 14.2 Weekly Cleaning.....	Page 203
Section 14.3 Monthly Cleaning.....	Page 207
Section 14.4 Cleaning Every Three Months, Six Months, or Yearly	Page 212

Section 14.5 Cleaning Chart..... Page 213

Chapter 15: Lifestyle Changes to Maintain a Clean and Healthy  
Life..... Page 215

## A Word of Gratitude

In the Name of Allah, the Beneficent, the Merciful...

As-Salaam Alaikum!

*"I am come that they might have life, and that they might have it more abundantly."*

John 10:10

Each of our lives is a priceless, matchless, and irreplaceable gift that must be handled with care. We are ever reminded of this in the wake of a global pandemic. So, we thank Allah (God) for intervening in our affairs in the Person of Master Fard Muhammad, for teaching us a way of life of cleanliness—spiritually, mentally, and physically. We thank Him for developing an invaluable scientific course of study, specifically for women and girls in North America, called the Muslim Girls Training and General Civilization Class (M.G.T. & G.C.C.). We are forever grateful and thankful for The Most Honorable Elijah Muhammad, the Eternal Leader of the Nation of Islam, for setting up these divinely guided training classes. And we thank The Honorable Minister Louis Farrakhan for his unwavering devotion as he continues to guide and lead the women in this class so that we may survive and thrive during this hour.

In John 10:10, Jesus says, *"I am come that they might have life, and that they might have it more abundantly."* The promise of Jesus is abundant life for all who will accept and follow His guidance for how this life should be lived. In the Bible, we find several instances where Jesus tells His followers to wash. In one instance, when the blind man follows the instruction of Jesus to wash, he gains sight. In another instance, Jesus, Himself, washes the disciples' feet and tells them to do as they have seen Him do—to wash each other's feet. While these examples of Jesus telling His followers to wash have great spiritual significance, they also correlate with our physical health and well-being toward receiving the promise of abundant life.

Like Jesus, The Honorable Minister Louis Farrakhan is teaching us all to wash and be clean. We must possess a clean mind, body, heart, and spirit, which naturally translates to producing a clean environment. Since we are created in the image and likeness of God, The Honorable Minister Louis Farrakhan teaches us how to cleanse ourselves of the muck and the mire imposed on us by Satan's world so that we may manifest our true divine nature and purpose. He teaches us that cleanliness is not next to godliness, but cleanliness is godliness. Along with being spiritually clean, we must also be physically clean because a clean environment is a preventative medicine against disease.

In the "how to keep house" training unit of the Muslim Girls Training and General Civilization Class, we are taught to clean strategically, based on proven scientific methods, to rid the home of dangerous bacteria, viruses, and other germs that cause illness. Now, with the rapid, global spread of infectious disease, the world has come to recognize the supreme value of cleaning, sanitizing, and disinfecting for the preservation of life. Cleaning has everything to do with making wise decisions to carefully guard, protect, and secure the lives of everyone in your household. It is the key to guarding the life that Allah (God) has freely given us. Now, more than ever, it is incumbent upon the human family to follow these divine instructions to wash and be clean.

So that all can benefit from this life-saving information, on behalf of The Honorable Minister Louis Farrakhan and the Nation of Islam, the M.G.T. & G.C.C. are pleased to present this guidebook titled, *How to Keep House: Maintaining a Clean and Safe Environment*. This book was born from the invaluable, indisputable knowledge given to us in our how to keep house training unit. Extensive research was also conducted to ensure that the cleaning methods presented throughout the book effectively address the ever-evolving diseases we are facing globally. The Honorable Minister Louis Farrakhan teaches, *“Knowledge is your birthright: Every human being should be gifted with the right to know self, and the environment, and the Universe into which God gave us birth and life.”* Therefore, he desires and wants to share with the entire world what God has given to us for abundant life. Feel free to share this book with family, friends, coworkers, neighbors, and everyone. Use this guide to implement practices toward the preservation of the health and wellness of the members of your household. It is our prayer that the information contained in this book will serve as a catalyst for our continued self-improvement, enhancing the health, safety, and well-being of the human family, so we all may experience abundant life.

We thank Allah for blessing us with The Honorable Minister Louis Farrakhan, who is the guiding light and shining example for humanity. He is a priceless treasure, an invaluable gift given to us by the Grace and Mercy of God. He is the greatest champion in our midst today for the respect, protection, and uplift of women. We thank him for his steadfast love and commitment as he continues to lead the Muslim Girls Training and General Civilization Class. The quality of his heart reflects the profound, unparalleled, supreme Love of God. We cannot thank Allah (God) enough for the life that we have received through his work and mission. He is the reason this manual was written and can be of service to enrich the lives of you and your household. May Allah (God) bless each of us to reach the pinnacle of success in our efforts to apply this information as we work toward living life in abundance.

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## Chapter 1: The Purpose of This Guide

*“Even if it’s a room, we’ve got to keep it clean because cleanliness is not next to godliness, cleanliness is godliness. Did you know, sisters, that a clean environment is a preventive medicine against disease? That’s why Jesus said wash and be clean. He’s not talking just about the outside. He’s talking about the inside. Your children are growing up. Give them a clean environment. Even though we’re poor, we don’t have to be dirty. Am I saying something wrong? Come on. Sisters, sisters, sisters, listen. My mother was very, very, very poor but she was very talented. I don’t know the time that my house that I grew up in was dirty. I never saw dishes piled in the sink.”*

-The Honorable Minister Louis Farrakhan, “A Nation Can Rise No Higher Than its Woman,” July 27, 1994

*“Look, sisters, wherever you live, if it’s an apartment, if it’s a room, that’s your environment. You can’t let that environment degenerate to filth because you live there. So, your nature and your duty by nature is to keep that house. What do you mean keep house? Put things where they belong, keep things in order, and above all, keep things clean.”*

-The Honorable Minister Louis Farrakhan, “Domestic Violence: It’s Causes and Solutions Part Two,” May 29, 1991

Being healthy and safe starts with being clean. As the hour is growing darker, pestilence (a fatal epidemic disease) is on the rise. Maintaining a clean environment is more than half the battle in preventing the spread of infectious diseases. The presence of filth becomes a breeding ground for all manner of bacteria, viruses, fungi, insects, and rodents that promote the spread of infectious disease. This guide provides a look into the world of germs, what they are, how they spread and cause infectious illness, and how we can work to combat this. We will uncover the places that harmful germs lurk and learn how to safely and effectively remove and destroy them.

This guide aims to provide information that empowers you to make the best choices regarding cleaning methods, routines, and products that best suit the needs of your household. We will learn how to effectively clean, sanitize, and disinfect in order to maintain a clean, healthy, and safe environment for ourselves and the members of our households. Understanding the difference between cleaning, sanitizing, and disinfecting, along with the proper manner in which these should be done, is vitally important to ensuring the health and well-being of ourselves and the members of our household.

Maintaining a clean environment will reduce the risk of contracting illness due to germs such as bacteria, viruses, fungi, etc. It is critical that we first implement these practices in our homes and then, where applicable, in the public places that we frequent, such as the mosque, work, school, etc. Even in public places where we are not in control of cleaning practices, there are things that we can do to protect ourselves from harmful germs that may be present. How to act at home and abroad is vitally important because what we practice at home is what we will practice abroad. Our personal practice of cleanliness in our home and our personal practice outside of the household in the places we frequent will help reduce the presence of harmful germs that can cause infectious diseases.



## Chapter 2: What are Germs and How Do They Cause Illness?

*“A declaration of immunity from Allah and His Messenger to those of the idolaters with whom you made an agreement. So go about in the land for four months and know that you cannot escape Allah and that Allah will disgrace the disbelievers.”*

-Holy Qur'an 9:1-2

*“And the LORD will take away from thee all sickness, and will put none of the evil diseases of Egypt, which thou knowest, upon thee; but will lay them upon all them that hate thee.”*

-Bible, Deuteronomy 7:15

*“But thou seest those in whose hearts is a disease, hastening towards them, saying: We fear lest a calamity should befall us. Maybe Allah will bring the victory or a commandment from Himself, so they will regret what they hid in their souls.”*

-Holy Qur'an, Surah 5:52

Infectious diseases are caused by germs that enter the body and then reproduce, causing us to become sick. Infectious disease is also referred to as contagious disease or communicable disease because it spreads from one person to another. Infectious diseases also spread to humans from animals or insects.

Germs are tiny living organisms that can cause disease and sickness in other living organisms. Germs are microscopic. This means that they are so small, they can only be seen with a microscope and not with the naked eye. The word germs refers to the microscopic bacteria, fungi, mold, viruses, and parasites that can cause disease.

### Section 2.1 Types of Germs

There are four main types of germs that cause most infectious diseases. They are:

1. Bacteria
2. Fungi
3. Protozoa (Parasite)
4. Viruses

**Bacteria** are tiny single-celled organisms that absorb their nutrients from the environment they live on, such as plants, animals, humans, or even non-living things. In some cases, the environment the bacteria live in might be the human body, such as the E. coli and salmonella bacteria that can live in the intestines of the human body and other animals. Bacteria can live and reproduce independently—both inside and outside of the human body. Bacteria can live for a long time on surfaces, feeding off of dirt, food, or water. One study found that the kitchen sink was riddled with germs, and it had more bacteria than the toilet or garbage can. The central spot in the bathroom for bacteria was the toothbrush holder. This is because the common place for toothbrush holders is on the counter near the toilet, and when the toilet is flushed, a fine spray of germey toilet water lands on the toothbrush holder, which is rarely cleaned. Some bacteria are good for the body, but others can be harmful and will cause infection.

Common bacterial illnesses include diarrhea, ear infections, strep throat, and urinary tract infections. Bacteria are particularly prone to attach to moist surfaces. In the presence of moisture, harmful bacteria can become particularly dangerous because it forms a thin, slimy film called a biofilm which is difficult to kill. It is crucial to remember that with food and water to feed on, bacteria can multiply rapidly, doubling its amount within only 10 minutes. Therefore, keeping surfaces clean and dry is paramount to our health and well-being. More serious illnesses caused by bacteria include tuberculosis, bacterial pneumonia, bacterial meningitis, staph infections, and whooping cough. Many bacteria can successfully be treated with antibiotics. However, some bacteria become resistant to antibiotic treatment.

**Fungi** are single and multi-celled organisms that live in damp, warm environments. Fungi can live on surfaces for a long time. They feed by absorbing nutrients from the environment they live in—like plants, animals, or other living things. Multi-celled fungi, like mushrooms and mold, can be seen with the naked eye, while single-celled fungi like yeast are microscopic and are only seen with the naked eye when in large numbers.

Some fungi are decomposers and live on dead things like leaves. Some fungi use living organisms for food and can infect plants, animals, and even other fungi. Generally, infections caused by fungi do not lead to serious illness in healthy people. Some examples of fungal infections include ringworm, diaper rash, athlete's foot, thrush, and nail and scalp infections such as tinea capitis.

- **Mold** is a fungus that grows in moist and damp environments such as kitchens and bathrooms. Mold reproduces through lightweight spores that travel through the air. Mold is usually harmless in small amounts. But when mold sits on moist surfaces and starts to grow, they release spores into the air that people may breathe in. If you inhale a lot of mold spores, it could make you sick. Mold can cause irritation of the eyes, skin, nose, throat, and lungs, as well as breathing problems for people who have asthma.

**Viruses** are organisms that are even smaller than bacteria, and they are the most common cause of illness. Viruses are pieces of genetic material (like DNA or RNA) that cannot live on their own; they must use the cells of another living thing to reproduce. Because viruses depend on and live within the cells of other living things, they can only reproduce inside of something else—such as a person or an animal. Typically, most viruses can only survive a short time if they are not inside a living thing. The flu virus can last up to 48 hours on hard surfaces, while common cold viruses can survive up to 7 days on a hard surface. Studies have shown that some viruses can persist on inanimate surfaces like metal, glass, stainless steel, or plastic for up to 9 days. Once a virus gets inside the human body, it can quickly spread from person to person and cause illnesses like the common cold, intestinal or respiratory flu, or HIV/AIDS. Antibiotics can kill bacteria, but they cannot kill viruses.

**Protozoa** is “a microscopic, one-celled organism that can be free-living or parasitic in nature.”

**Parasites** are organisms that live on or in another living organism like an animal or human being. Parasites get their food from the organism they are living off of and cause harm to their living host. Microscopic parasites like protozoa can multiply in humans, which helps them to survive and cause serious infections. They can cause intestinal infections that lead to diarrhea, nausea, and stomach pain. They can also live in the blood, lymphatic system, or body tissues and cause infection.

## Section 2.2 Other Carriers of Germs

While insects and rodents are not germs, it is essential to note that they can be carriers for infectious diseases that spread to humans. Not maintaining a clean environment attracts insects and rodents, which can put you and the members of your household at risk for acquiring an infectious disease. When an area is unclean, the resulting food, dirt, and debris attract insects and rodents that are searching for a food source. These animals carry germs on their skin and in their fecal matter that can contaminate an area. Roaches, mice, and flies thrive in dirty, cluttered environments, and therefore, when your home is not clean, it becomes more susceptible to infectious diseases that these pests can spread. Roaches, mice, and other creepy crawlers can be the sources of germs that make their way into our homes and our bodies. According to the World Health Organization, “Cockroaches can sometimes play a role as carriers of intestinal diseases, such as diarrhea, dysentery, typhoid fever, and cholera.” Rodents can cause a plethora of diseases such as Lassa fever, rat-bite fever, salmonellosis, and Lyme disease, just to name a few.

## Section 2.3 How Germs Enter the Body and Cause Illness

Germs live in human body fluids like blood, mucus, saliva, sweat, vomit, urine, feces, and discharge from the eyes and skin lesions. When a person sneezes or coughs, germs spread through the air. The germs can even spread through normal talking and breathing. Some germs pass from one person to another by touching something that is contaminated or shaking hands with someone who has a cold, flu, or a contagious disease like COVID-19 and then touching their own face.

Once organisms like bacteria, viruses, fungi, and parasites invade a body, they look for a place in the body to live, such as the lungs, the intestines, stomach, blood, body tissues, or anywhere that is inhabitable for germs. These germs get their energy and nutrients from the body that they have invaded, damaging, or destroying healthy cells while producing toxins. These toxins produce the symptoms of the disease they cause, such as coughing, sneezing, diarrhea, high fever, increased heart rate, a generalized inflammatory response in the body, and even life-threatening illnesses.

There are several ways that germs can enter the body.

1. **Direct contact.** This happens when body fluids pass directly from one person to another, such as through touching, biting, kissing, or sexual intercourse. Viruses can be spread through direct contact.
  - Animals can also bite a person or carry germs on their skin, which can cause an illness through direct contact.
2. **Droplets.** When a person secretes bodily fluids into the air—such as through sneezing, coughing, spitting, drooling, slobbering, or vomiting—these droplets of body fluid can travel up to six feet and land on another person's eyes, nose, or mouth and spread the germs. The droplets can also land on different surfaces such as a table, doorknob, or couch cushion. If a person touches the surface where the droplets fell and then touches their eyes, nose, or mouth, the droplets carrying the germs can then get inside the body through these body openings.
  - Germs live longer after landing on hard surfaces (like tables, countertops, and doorknobs) rather than on soft, porous surfaces (like fabric, sofa cushions, and soft toys).

- Germs also live longer on surfaces that are wet and dirty as opposed to those that are clean and dry. Food, dirt, and water provide nutrients for the germs and help them thrive.
  - Diseases that are spread through droplets only require close contact to cause infection. This means people only have to be near each other for the germs to spread, making these diseases more contagious than those that require direct contact for infection. Viruses and bacteria can be spread by droplets, which make them more contagious than fungi and parasites, which do not spread through droplets.
  - Hand washing, along with cleaning, sanitizing, and disinfecting, which we will review in the following chapters, help to prevent diseases that are spread through droplets because these processes will remove and kill the germs in the droplets.
3. **Airborne transmission.** When something or someone expels germs into the air, some of them can attach themselves to small moisture droplets or dust particles, which allows the germ to travel through the air more than three feet. A person can then breathe in the germ, inhaling it deep into the lungs, causing illness. Illnesses such as tuberculosis, measles, and chickenpox can be transmitted in this way.
- Germs that travel through the air are the most contagious because they are difficult to control. They can move through ventilation systems, from room to room or even from one building to another.
  - When coughing and sneezing, covering the mouth and nose will help in preventing airborne germ transmission. Wearing a mask, such as an N95 face mask, can aid in preventing the spread of germs. According to the FDA, "N95 respirators and surgical masks (face masks) are examples of personal protective equipment used to protect the wearer from airborne particles and from liquid contaminating the face. The Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH), and Occupational Safety and Health Administration (OSHA) also regulate N95 respirators."
  - These germs can also spread through direct contact, droplets, etc. So, hand washing, along with cleaning, sanitizing, and disinfecting, will also help in preventing airborne diseases.
4. **Fecal-oral transmission.** This type of germ transmission usually happens when a person with an infectious disease does not wash their hands after using the bathroom.
- The germ-ridden stool from the infected person remains on that person's hands. When that person touches food (or anything else), the germs from their dirty hands transfer to the food or other object. When another person eats that food, that person then becomes sick. Or if a person touches the dirty object and then touches his eyes, nose, or mouth before washing his hands, the germs can get into the body, and the person becomes sick.
  - Animals can also spread infectious diseases through fecal matter. If a person touches the feces of a diseased animal and then touches their eyes, nose, or mouth without washing their hands, then that person can become sick.
  - Proper handwashing will help to prevent diseases from this type of transmission.

5. **Blood.** This type of infection happens when blood from an infected person enters another person's body through a break in the skin.
  - Blood-borne illness typically occurs when an infected needle is injected into another person.
  - Blood-borne illness can also occur if a person touches the blood of an infected person, and then transfers that blood to their own body by touching their eyes, nose or mouth or a break in the skin such as an open wound. Blood-borne diseases can be prevented by practicing standard safety precautions when cleaning up a blood spill and teaching children not to touch blood if someone is bleeding.
  - Other bodily fluids that can transmit disease via direct contact and droplets include urine and discharges from the eyes, wounds, and growths on the skin. As a general precaution, all fluid secretions from the body should be considered potentially infectious.
  
6. **Insect bites.** Germs can also be transmitted to humans when an insect carrying a bacteria or virus bites a person.

## **Section 2.4 Why Some People Get Sick, and Others Don't**

*"This body is the most magnificent of all creation. A wise God created this and, believe it or not, it is made to last so much longer than we get out of it, but it is because we don't know what it is and how to preserve it and protect it. So, the enemy can manipulate our taste buds and then sentence us to death by our appetites."*

-The Honorable Minister Louis Farrakhan, 2009 Health Forum

*"The human being has to keep in a certain way in order to be worthy to hold the Spirit of Life. This finely tuned magnificent creation is its own hospital. We can cure this body of ills that it has if the person inside the body knows how to connect with the Powerful Being that created it, and then makes up his or her mind to live in accord with the Law of Life that sustains it."*

-The Honorable Minister Louis Farrakhan, "God's Healing Power" FCN Vol. 10, No. 16, August 5, 1991

Because we were created in truth, sin is a destructive force to the human being. In an article of the Final Call titled, "The Pain of Infidelity," The Honorable Minister Farrakhan states that "Sin is at the root of disease." You are not here by happenstance. You are here by the Will of Allah as part of His perfect plan. In the absence of a connection to Allah, our Creator, and Sustainer, how will we come to know what His divine plan is? He best knows how to care for us and has given us a prescription to follow so we may care for ourselves. Living a life according to the Will of Allah is to be covered in the impenetrable, infallible armor of God, which provides us with immunity from the ills of this wicked world.

*"And when We made the House a resort for men and a (place of) security. And: Take ye the place of Abraham for a place of prayer. And We enjoined Abraham and Ishmael, saying: Purify My House for those who visit (it) and those who abide (in it) for devotion and those who bow down (and) those who prostrate themselves."*

-Holy Qur'an, Surah 2:125

The immune system is the body's military that defends it against disease and infection. It is the body's defense system. It is a complex structure made up of specialized cells, proteins, tissues, and organs that identifies disease-producing agents—such as viruses, bacteria, and other microorganisms. These germs can harm the body, so the immune system works to find and destroy them. Most of the time, the immune system operates quite well, and most people don't even know it's there. But there are times when the immune system doesn't function properly, and this can lead to illness. For example, having a cold or the flu is a visible sign that your immune system failed to protect you from a virus. But when you get over a cold, this is a sign that your immune system is in action and was able to rid your body of the invading cold virus.

When germs enter a person's body, they don't always make a person sick. Sometimes, two people may catch the same germs and have varying levels of illness. There may be multiple reasons why a person gets sick from a particular virus or bacteria, while others don't. One important factor is overall health. Our immune system is the body's defense to protect us against a number of dangerous and even deadly germs. Yet many people do little to fortify their immune system against a multitude of microscopic invaders. If the body has been compromised due to other underlying health conditions, then the immune system may already be weakened. Therefore, proper nutrition is essential for strengthening the immune system. Eating a healthy diet by practicing How to Eat to Live is the best way to build up a robust immune system. The food that we eat has vitamins and minerals that help to keep us healthy and fight off disease when it tries to enter the body. Vegetables, such as garlic, onions, navy beans, and other good vegetables, are essential to activate a fully functioning immune system. Eating the right foods at the right time can serve to protect you and your family by boosting the immune system's ability to fight and defend the body from harmful germs.

Health-minded people will definitely want to include fresh vegetables at the core of their diet to boost immune health. As previously stated, simple foods like vegetables and navy beans are the best foods to build a healthy immune system. In How to Eat to Live, Book Two, The Most Honorable Elijah Muhammad teaches:

*“THE SIMPLE food is the food that will give us health; and not that food that we spice up with various kinds of spices. Neither is all that dainty meats, cakes and pies, good for you.”*

*“SIMPLE navy beans is one of the best foods that we can eat.”*

*“YOUR BEST vegetables are: cauliflower, cabbages (not the green cabbages). If you love turnips, eat the roots, not the salad. Some other vegetables we eat are as follows: brussels sprouts, asparagus, eggplant, okra, squash and rhubarb.”*

The Most Honorable Elijah Muhammad also cautions us to eat at the prescribed time to gain the maximum benefit that healthy foods have to offer. He states,

*“Just a simple food will keep you and me living a long time, if that simple food is good and we eat it only once a day (once every 24 hours).”*

*“To live a long time, eat once every 24 hours or once every 48 hours, if you are able to do so. But, if you have heavy, manual work to do, do not try to eat once every two or*



*three days. And, if you eat once a day, you should fast every month for two or three days. By doing that, there will be no poison left in the body at the end of a year to make you sick even one hour."*

*"Fasting is good for us. It gives our blood time to cleanse itself, and in doing so it makes us think clearer. IF you make a habit of FASTING—you are not going to get sick."*

Fasting is a supremely powerful means of preserving our physical, mental, and spiritual health. It is the key to prolonging life. Since the time of this writing, several health professionals across the globe have conducted clinical studies that unequivocally verify what we have in How to Eat to Live is the sure truth.

Those who follow How to Eat to Live, make healthy lifestyle choices, eat well and get adequate rest will have a more robust immune system than someone who does not adhere to How to Eat to Live, makes unhealthy choices, eats bad food, and does not get enough sleep. The following are some additional things that can potentially affect one's immunity.

1. Preexposure to germs can create immunity against a disease. Every time your body fights against bacteria and viruses, your immune system becomes "smarter." When a person has an illness, the body develops antibodies to it. If that person is exposed to the disease again, the antibodies recognize the disease and destroy it, so the person does not get sick.
2. The number of germs a person is exposed to can also determine whether or not that person becomes sick. If a person is exposed to a significant number of powerful germs, they are more likely to get sick versus someone who is exposed to a few weak germs.

Our immune system's most excellent defense is living our lives in accord with How to Eat to Live. Practicing the divine dietary guidance in How to Eat to Live—eating the prescribed foods once every 24 hours and fasting—coupled with the right spiritual food for good thoughts, will ensure that our immune systems are strong enough to ward off illness. All praise is due to Allah for the knowledge of How to Eat to Live so we may have abundant life!

#### Notes




## Chapter 3: Getting Rid of Germs – The Importance of Cleaning, Sanitizing, and Disinfecting

*“That’s My little servant. I am going to get her strong. Any little thing you do. Just like going home and looking at your house. ‘Oh, it doesn’t look like it is supposed to look, so I am going to clean it up.’ Why? For some man to knock on your door? No. Allah (God) has already knocked on your door. ‘Oh, Allah loves my house when it is clean!’ Allah (God) says, ‘Look at my little servant, she is trying to please Me.’”*

-The Honorable Minister Farrakhan, “The Key to the Kingdom of God”

Busy schedules, coupled with the fact that household chores are not the average person's favorite thing, make it easy for cleaning to fall to the bottom of the list of our daily priorities. However, just as we are going about our lives with work and other responsibilities, germs are also busy working. In the presence of dirt, food particles, dust, and other debris, harmful germs thrive, multiply, and set the stage for the onset of illness. Performing daily quick clean-ups in areas where germs tend to thrive can go a long way to prevent the spread of colds, flu, foodborne illnesses, and other infectious diseases.

There are three methods for combating harmful germs: 1) cleaning, 2) sanitizing, and 3) disinfecting. Most people use the terms cleaning, sanitizing, and disinfecting interchangeably. However, they are not the same. All play a valuable role in preventing the spread of germs, but they each differ in how they perform and how they affect germs. Understanding the function of each will enable us to take the best approach to combat harmful germs and create a safe and healthy environment.

### Section 3.1 Differences Between Cleaning, Sanitizing, and Disinfecting

Cleaning, sanitizing, and disinfecting all serve to decontaminate germs from surfaces. However, they do so at different levels. In short, we clean to remove germs, sanitize to lower the number of germs, and disinfect to kill germs. Let's look at each to see how this works.

#### Cleaning

Cleaning involves the use of water, soap (or cleaning products), and applying friction to remove germs, dirt, debris, and other impurities from surfaces. Friction is applied to the surface through rubbing, scrubbing, scouring, etc. to loosen and remove visible debris from the surface and wipe away germs. Germs are reduced from a surface because cleaning will physically remove some of them. For example, when cleaning the kitchen sink with soap and water, soap loosens the germs from the surface, and when rinsed, the soap and germs are carried away with the water down the drain. Likewise, when cleaning a countertop, soap and water may be used to loosen debris and germs, and a damp cloth may be used to wipe away the soap with the germs and debris. So, cleaning removes germs. However, cleaning does not actually kill the germs. Some germs may remain on cleaned surfaces, but the possibility of someone becoming infected reduces. To effectively decrease the remaining germs from cleaned surfaces, then one should sanitize after cleaning. And to kill all germs off cleaned surfaces, then one should disinfect after cleaning. Sanitizing and disinfecting will be covered later on in this section.

Cleaning is the foundation of healthy living. You can clean without sanitizing or disinfecting, but you cannot sanitize or disinfect without first cleaning. Therefore, cleaning alone, meaning

cleaning that does not also require sanitizing or disinfecting, is best suited for surfaces that are not prone to harboring harmful germs that lead to infectious diseases. Cleaning alone is typically done in areas with a low risk of transmitting harmful microbes such as mirrors, windows, and cabinets. High-risk areas, such as doorknobs, handrails, light switches, floors, bathrooms, kitchens, etc., will either need to be sanitized or disinfected after cleaning. Cleaning must always be done first to lay the foundation necessary for effective sanitizing and disinfecting.

## **Sanitizing**

While cleaning removes visible dirt, debris, dust, and some germs, sanitizing takes the extra step to reduce further the presence of harmful germs. Sanitizing involves the use of chemical agents or devices, like a steam cleaner, to reduce the number of harmful bacteria on surfaces to safe levels according to public health standards. According to the EPA (Environmental Protection Agency), sanitizing "is the use of a chemical product or device (like a dishwasher or a steam mop) that reduces the number of germs on surfaces or objects to a level considered safe by public health standards or requirements. Sanitizing kills most germs, but not all of them. For food service, a sanitizer should reduce the number of germs on a surface by 99.999% within 30 seconds. For hard surfaces, not used for food service, the level should be at least 99.9%."

Sanitizing rather than disinfecting (which kills germs) is best used in areas of food preparation and children's items because sanitizers are used at much lower concentrations than the concentrations used for disinfectants. The lower level concentration of chemicals when sanitizing does not leave a residue that can be harmful to people and food. The goal is to safely reduce the number of germs without leaving a toxic residue. Sanitizing destroys harmful bacteria that can lead to foodborne illnesses. Therefore, sanitization is best for food service areas such as a kitchen counter or table, food preparation equipment, dishes, glasses, utensils, etc. and children's items such as children's toys, pacifiers, high chairs, etc. Also, sanitizing solutions should be scentless because there should be no residual chemicals left that could change the flavor of food.

Now, why is it important that sanitizers reduce the number of germs on a surface by 99.999% within 30 seconds? Consider this, when in the kitchen and preparing different types of foods on countertops, areas must be sanitized quickly in order to prevent cross-contamination. Sanitizing is effective because it reduces germs within 30 seconds. This means you can get rid of as many germs as possible in a very short amount of time, which allows you to effectively and quickly continue your food preparation in time for dinner.

Sanitizing surfaces is vital because it will reduce the risk of becoming ill from contact with those surfaces by destroying a sufficient number of germs. Sanitizing reduces germs to safe levels for the human being and is gentler than disinfecting. While sanitization does not kill all germs like disinfection, it is best for food service areas and children's items, such as toys that children often place in their mouths. While sanitizing effectively kills some bacteria, it may not work to remove visible dirt and debris, which is why cleaning first is a must. Sanitizing is often not enough to guard against illnesses that arise from hard to kill viruses and bacteria. This brings us to our next level of germ reduction, which is disinfecting.

## **Disinfecting**

Disinfecting kills the germs that sanitizing leaves behind. Disinfectants kill 100% of the germs listed on their labels. Disinfectants are for use on inanimate (nonliving) objects (not people). Disinfecting involves the use of chemical agents that work to inactivate and destroy germs on surfaces. Disinfecting is best for high-risk areas to reduce the spread of infectious diseases through viruses, bacteria, and fungi. Therefore, disinfectants are applied to areas like the bathroom (toilets, floors, showers, bathtubs, sinks, etc.), changing tables, potty chairs, doorknobs, doors, cabinet handles, light switches, high touch areas, and more.

Reading the labels of disinfectants and following the directions is very important for their effectiveness. Ensuring that you use the proper disinfectant concentration and allowing the disinfectant to remain on the surface for the recommended contact time or wet time is essential in killing germs. Contact time is the time the surface needs to remain visibly wet with the disinfectant to kill the stated germs. Disinfectant product labels will indicate the contact time, which can range from 15 seconds to 10 minutes. When directed to dilute the disinfectant, follow the instructions to achieve the best results. More disinfectant is not necessarily better because you may injure yourself or destroy the object you are attempting to disinfect. Over dilution can render the disinfectant ineffective and will not kill the germs listed on the label. So, it is very crucial to follow the directions on the labels to be effective in killing germs, such as bacteria, viruses, fungi, etc.

The process of disinfecting does not remove dirt. Therefore, it is imperative not to skip cleaning first. Cleaning first increases the effectiveness of disinfecting. Remember to disinfect high contact or frequently touched areas. Since disinfecting kills the most germs, one might ask, "Why not just disinfect and skip cleaning?" While disinfecting is most effective at eliminating germs, it does not remove visible dirt and debris. Additionally, the potency of chemicals used for disinfecting may produce hazards in areas where food preparation takes place. The concentrations of chemicals used in disinfectants leave a potentially dangerous residue that is not suitable in food preparation areas. The primary concern of disinfecting is not food safety, but rather, killing the stated germs.

In our efforts to produce a safe and clean environment, it is crucial to exercise caution when using cleaners, sanitizers, and disinfectants. The improper use of them can create hazardous conditions. Take time to read labels and carefully follow the instructions for their use. Keep all cleaners, sanitizers, and disinfectants out of the reach of children. They can be particularly hazardous to children, especially when inhaled or consumed. When storing solutions placed in spray bottles, be sure they are labeled so that all members of the household are aware of the contents.

The Environmental Protection Agency (EPA) provides recommendations for chemical-based products that they have found through scientific testing to be safer for families, pets, workplaces, neighborhoods, and the environment. To identify these products, look for the Safer Choice label. This label certifies that the product meets the EPA's Safer Choice standards. Although the manufacturers of chemical products are not required to list all the ingredients on the label, products bearing the Safer Choice label are required by the EPA to list all ingredients, so the consumer is aware. Additionally, each ingredient listed is tested by the EPA for safety. Please note that this does not mean that these products are 100% safe. However, they offer a safer alternative to other products on the market. Also, they must be used according to the instructions to ensure their safety and effectiveness. To learn more



## Chapter 4: How to Clean

*“It is your duty, sisters, to have a clean home because a clean home is a peaceful home, or it is a base for peace. There is no peace where there is filth because if you can live in filth, you don’t have a peaceful mind.”*

-The Honorable Minister Farrakhan, “Warning to the M.G.T. & G.C.C. Part 2”

We are taught that “We must be clean at all times (mind and body) at home and abroad.” Cleaning is the first step in maintaining a safe and healthy environment. As stated in the previous chapter, cleaning is the process of using water, soap (or cleaning products), and applying friction to remove germs, dirt, debris, and other impurities from surfaces. Using cleaners such as soap and water or all-purpose cleaners help to lift the debris and dirt off the surface. Applying friction to the surface through rubbing, scrubbing, scouring, wiping, brushing, etc. loosens and removes visible debris from the surface and helps to wipe away germs.

Everyone should want a clean home. Because the home has many different areas used for various purposes, there are different levels of cleaning and different requirements before an area can be considered “clean.” For example, when cleaning your living room, you may have to declutter and put things away. Next, dust surfaces from the ceiling fan on down, wipe and clean surfaces with an all-purpose cleaner, sweep and mop the floor or vacuum the carpet. Then, after doing all of this, the living room would be considered “clean.” Although cleaning your living room may be tedious work, this cleaning process is a far cry from cleaning a kitchen or a bathroom where dangerous germs exist. A simple dusting, wiping, sweeping, and mopping would be insufficient for the kitchen and bathroom. For these spaces, we must take cleaning a step further by sanitizing and disinfecting. So, as you can see, different areas of the home have distinct requirements and levels of cleaning. For some areas, thorough cleaning is sufficient. While in other areas, cleaning must be followed by sanitizing or disinfecting because of dangerous germs.

Although the practice of cleaning does not kill germs, it decreases the number of germs present by physically removing them from the surface. In addition, cleaning is the preparatory step that must be done first before sanitizing or disinfecting. We will cover how to sanitize in Chapter 8 and how to disinfect in Chapter 9.

Cleaning is an essential part of having a healthy environment in the home, and using the proper tools and products is vital to its effectiveness. In this chapter, we will learn pre-cleaning practices such as 1) how to map out cleaning our homes, 2) assessing our cleaning tools and products, and 3) decluttering. We will also learn how to clean. The different components of cleaning, such as dusting, cleaning surfaces, sweeping, vacuuming, and mopping, will be covered in Chapters 5, 6, and 7.

### ***Before Cleaning***

- ✓ *Map out your cleaning strategy*
- ✓ *Assess cleaning tools and products*
- ✓ *Declutter*

### ***Cleaning and Its Components***

- ✓ *Dusting*

- ✓ *Cleaning surfaces*
- ✓ *Sweeping*
- ✓ *Vacuuming*
- ✓ *Mopping*

## Section 4.1 Map Out Your Home Cleaning Strategy

Before you begin cleaning, the first step is to map out your home cleaning strategy. Map out what room you plan to clean first and the amount of time you have to clean. Divide the workload among family members. If you are the only person who will be cleaning or you have a very large home, it's okay to break up the cleaning jobs into different days. Remember, the goal is not just to finish, but to have a clean house.

So, the question is, what room should be cleaned first? It's generally a good idea to start with the most challenging part of the house. Some say it's the bathroom, while others say it is the kitchen. Whichever part of your home is the most difficult to clean, then it is suggested that you begin there. The thought is that after cleaning the most challenging part, then the rest of the home will be easier to clean. Otherwise, if you leave the most difficult room for last, you may not do a good job because you will be tired. Or even worse, you may not clean the room at all. However you decide to tackle those cleaning jobs, the goal is a clean home. So, take a moment to map out your cleaning strategy, divide the household chores, and conquer.

## Section 4.2 Assess Your Cleaning Tools and Products

After mapping out your home cleaning strategy, assess your cleaning tools and products. Take stock of what you already have in your home, and be sure to get what you need before cleaning. It can be quite frustrating to begin cleaning and realize that you do not have the tools, such as clean towels, or enough cleaning product, such as soap or dish detergent. So, it is important to inventory your cleaning tools and products to ensure you have what is needed when it is time to clean.

### Cleaning Tools

The following are some essential cleaning tools that every household must have to make cleaning a smooth and effective process:

- **Microfiber cloths or towels**—Microfiber cloths are reported to work best at wiping away dust, dirt, and impurities. They are among the best tools you can have in your dusting arsenal. Microfiber is a synthetic material made up of polyester and polyamide (widely known as nylon). It has microscopic size fibers that are many times smaller than a strand of hair. Split microfiber is even finer. In a document posted by the University of California, San Francisco, it states, "When microfibers are split, they are 200 times thinner than a single human hair. These split microfibers become much more absorbent. They can remove large quantities of microbes, including hard-to-kill spores. Split microfiber quality varies. Microfiber that catches slightly on the surface of your hand is better quality. Another way to tell is to push a water spill with it. If the microfiber pushes the water instead of absorbing it, then it's not split. A microfiber cloth has the same surface area as a cotton cloth four times as large! And it is very absorbent. It can absorb seven times its weight in water!" What a great tool to have to combat dust. Please note that certain chemicals found in vinegar and bleach wear away the fibers over time, decreasing the lifespan of microfiber cloths. If you clean with



vinegar or bleach, you may need to replace your microfiber cloths more often. To help them last longer, microfiber should be laundered in warm water using a nonbleaching detergent. Wash them with like microfiber fabrics.

- **Extendable microfiber duster**—This is a microfiber duster that connects to a pole that extends to hard to reach areas such as the ceiling fan, light fixtures, crown molding and every hard to reach spot that needs dusting. Some extendable microfiber poles come with different attachments such as a cobweb duster, ceiling fan duster, and wall duster.
- **White cleaning towels**—White towels are good to use on any stain. Since they are white, they won't transfer colors to fabrics. Also, they allow the user to tell when the stain is being lifted as it should show on the towel. Finally, white towels can be bleached and disinfected without being ruined.
- **Paper towels**—Paper towels are made from cellulose fibers deriving from trees and plants such as evergreen, cotton, bamboo, hemp, and many other plant materials. While paper towels are extremely multifunctional and handy to have around the home, it is best to use them sparingly to reduce pollution from their production and waste. Because of their design, paper towels can be used to dry hands and surfaces, soak up spills, and wipe surfaces. If there is a large mess or spill, you may opt to use a paper towel once and discard it.
- **Squeegee**—A squeegee is “a scraping implement with a rubber-edged blade set on a handle, typically used for cleaning windows.” A squeegee is a useful tool for showers, windows, and mirrors. It allows for a quick way to keep the shower mold-free, while also getting rid of smudges, marks, and build-ups.
- **Lint roller**— A lint roller is “a roll of one-sided adhesive paper on a cardboard or plastic barrel that is mounted on a central spindle, with an attached handle.” It is used to clean delicate surfaces, like lampshades, and to remove dust on velvet such as the back of picture frames, velvet jewelry holders, etc.
- **Scrub brush**—A brush is “an implement with a handle, consisting of bristles, hair, or wire set into a block, used for cleaning or scrubbing, applying a liquid or powder to a surface, arranging the hair, or other purposes.” A scrub brush is a useful tool for cleaning. The multipurpose use of a scrub brush makes it a great tool to have on hand when a regular sponge or towel can't handle the task. It's used for regular and heavy-duty cleaning such as tubs, tiles, fixtures, floors, mats, and a host of other places within the home, scrubbing out stains and other uses. There are different types of brushes used for cleaning, for example, a grout brush, a dish brush, toothbrush, etc. Just make sure to verify that the abrasiveness will not ruin the item you intend to scrub.
- **Toilet brush and holder**—A typical toilet brush consists of a long plastic handle with rounded shaped and hard bristles at the end of it. It is used to clean the toilet with a cleaner or a disinfectant. There should be one toilet brush for every toilet.

- **Broom**—A broom is “a long-handled brush of bristles or twigs, used for sweeping.” Different types of brooms are used to sweep different kinds of floors.
- **Dustpan**—A dustpan is “a flat handheld receptacle into which dust and waste can be swept from the floor.” At the end of sweeping, use the broom to sweep the dust, dirt, debris, and trash into the dustpan and throw it in the trash.
- **Mop**—A mop is “an implement consisting of a sponge or a bundle of thick loose strings attached to a handle, used for wiping floors or other surfaces.” It is used to clean the floors after being swept.
- **Vacuum**—A vacuum cleaner is “an electrical apparatus that by means of suction collects dust and small particles from floors and other surfaces.” It uses suction to suck up dust, dirt, and debris from upholsteries, draperies, carpets, and other surfaces.
- **Bucket**—A bucket is “a roughly cylindrical open container, typically made of metal or plastic, with a handle, used to hold and carry liquids or other material.” When cleaning, it holds different types of liquid, such as soap and water, clean water, sanitizing liquid, disinfecting liquid, etc. To make cleaning easy, you can purchase multiple buckets and label them for the different cleaning areas you have designated. This will lower the risk of cross-contamination. Then, you can place the appropriate cleaning products and supplies in the different buckets. This will allow for a smooth transition as you move from one room to the next one. It will also allow you to easily and safely delegate the task of cleaning because each person will have all the proper supplies to complete the job.
- **Sponge with scouring pad**—Sponges are made of small porous material. The material can range from microfiber, cellulose, polyurethane, or it can be naturally made. Sponges can be useful tools, especially when they are dual-sided, with one of the sides being abrasive. The abrasive side can help to tackle chores that have things that are stuck on and difficult to simply wipe off. Sponges should be disinfected after every use and replaced every two weeks or earlier if necessary.
- **Spray bottle**—A spray bottle is “an unpressurized canister equipped with a sprayer that is operated by pressing a handle; used, e.g., for detergents.” The many uses of spray bottles include rinsing something off by spraying it with water or as a container for your store-bought or homemade cleaning solutions.
- **Protective attire**— Protective attire or personal protective equipment (PPE) are items worn when cleaning to protect the body from hazards. Our PPE includes, but is not limited to:
  - Rubber gloves—Gloves are “a covering for the hand, worn for protection against cold or dirt and typically having separate parts for each finger and the thumb.” Rubber gloves for cleaning protect the hands from chemicals, contaminants, cuts, heat, and much more while performing a cleaning task. Gloves are good to have around the home. Read all cleaning product labels carefully to verify if manufacturers recommend using gloves.

- Clothes for cleaning (long-sleeved shirt, long pants, etc.)—Knowing what to wear when you are cleaning is a matter of safety and protection. To keep your legs and arms protected from dangerous contaminants, insect bites, and cleaning chemicals, wear long pants and a long-sleeved shirt while cleaning. An apron is also great to wear to protect your clothing.
- Goggles—Goggles are “close-fitting eyeglasses with side shields, for protecting the eyes from glare, dust, water, etc.” Some cleaning tasks require goggles to protect our eyes, especially when using particular chemicals.
- Dust mask— A dust mask is “a flexible pad held over the nose and mouth by elastic or rubber straps to protect against dust encountered during construction or cleaning activities.” A dust mask may be worn during cleaning to protect against allergens from dust.

## **Cleaning Products**

Choosing the proper cleaning products is essential. You can easily use everyday household items as a cleanser. These are effective “cleaning products” that are generally found right in your cabinets. Consequently, they are also an inexpensive choice. Soap and water is an excellent “go-to” cleaner that is already in your home. Additionally, cleaning products can be purchased, such as soap, detergent, solvents, and abrasive cleaners. It is important to read the label to determine the right cleanser for the task. Also, take into consideration the type of surface that you will be cleaning. All cleansers do not work on all surfaces. When purchasing cleaning products, be aware of their health hazards, and choose wisely. Be sure to select that which best serves you and your family.

### **1. Dish Soap**

Dish soap or dish detergent is a powerful, yet gentle, cleaning product that can perform multiple tasks. It is a staple product in our homes. The soap found in dish detergent contains molecules designed to break down grease and grime. How does that work? Well, soap attracts both oil and water. One end of the soap molecule blends well with water (it is hydrophilic), while the other end attracts oil (it is lipophilic). As the item is being cleaned, it lathers up with soap. During that process, the oil-loving end of the soap molecule picks up grease and oil. Then when rinsing, the water-loving end of the soap molecule is attracted to water. So, it attaches to water and gets washed away. In addition, soap is a surfactant, which means it decreases the surface tension of the water so that the water can soak into the soiled area more easily. These properties of dish detergent make it the “go-to” cleaner. So, applying the contrast of soap and water to a grimy surface such as pots, pans, dishes, or countertops, allows oil, grease, and grime to break down into smaller parts. Then, when rinsed, they are lifted away from the surface with water. Hence, this process quickly and thoroughly washes unwanted substances away.

Dish soap cleans many surfaces, safely and thoroughly, due to its ability to lift grease and grime effectively off of surfaces. Dish detergent is excellent for mopping floors. Just add one tablespoon of the soap to a bucket of water (about 3 gallons) and mop the floor. It is also great for cleaning countertops, the inside and outside of your refrigerator, air conditioner filters, window blinds, kitchen cabinets, kitchen appliances, and the list goes on. Dish soap can even remove oil-based stains from clothes or furniture. Before cleaning these items with dish soap, be sure to read the labels for their proper care. When choosing a dish detergent, also remember to look for

dangerous chemicals, like phosphate and triclosan, that can adversely affect your health, the health of your loved ones, and the environment. It can also include dyes, scents, or rinsing agents that may be harmful. In a later chapter, we will discuss the hazards of cleaning products so that you may choose the product that best suits your family and their health and wellbeing. Read and choose wisely.

## 2. Castile soap

A natural option to dish soap is castile soap. Castile soap is “fine, hard white or mottled soap made with olive oil and sodium hydroxide.” Although it contains sodium hydroxide, castile soap is processed in such a way that the end product is non-toxic. It is a vegetable oil-based soap that is quite versatile. In addition to olive oil, some varieties of castile soap may contain other vegetable oils, such as coconut oil, jojoba oil, or hemp oil.

Castile soap is used to clean a variety of things. Its multipurpose use includes cleaning our bodies (i.e., body wash, hand soap, shampoo, etc.), and our homes (i.e., all-purpose cleaner, laundry detergent, window cleaner, etc.). Castile soap can be used to clean the same surfaces that are cleaned with dish soap, but without the potentially harmful chemicals that are added to some dish soaps. In its purest form, castile soap is non-toxic, natural, plant-based, and biodegradable. Some products may be labeled as castile soap, but they include other ingredients. Be sure to research the ingredients for your castile soap to ensure you are getting a good product. Castile soap can be added to water (in a spray bottle or bucket) to make homemade cleaning solutions that can be used nearly anywhere in the house. Never mix castile soap (alkali) with vinegar (acid). While the mixture is not toxic, it will cancel the soap properties and reduce the castile soap to oil.

## 3. Vinegar

Vinegar is well known for its many uses in the home. It is a culinary staple used to flavor food such as salads and preserves food, such as in pickling. It can also be used as a wash to clean fruits and vegetables. Also, vinegar (namely apple cider vinegar) has been touted for many of its health benefits. Some studies have found that apple cider vinegar significantly lowered post-meal blood glucose levels. Other studies have shown its effect on weight loss by decreasing a person’s appetite. In this section, we will look at the use of white distilled vinegar to help in cleaning our homes.

**White distilled vinegar** is a solution containing between 4% to 7% acetic acid and 93% to 96% water. It is the acidity of vinegar that makes it a useful “cleaner.” The common household white distilled vinegar found in the U.S. is 5% acetic acid and 95% water. There are stronger acetic acid solutions used for agricultural purposes (20% acetic acid) and industrial cleaning (up to 30% acetic acid), but these stronger solutions are not for consumption. The stronger solutions should not be used for regular cleaning at home.

According to an article found at [thespruce.com](http://thespruce.com) dealing with vinegar,

*“Studies have been done testing how effectively it kills bacteria and viruses. For example, a 2010 study showed that a 10 percent malt vinegar solution was just as effective as commercial cleaning wipes in killing the Human Influenza A/H1N1 virus. A 1997 study in the Journal of Environmental Health showed that*

*undiluted vinegar was just as effective as bleach in eliminating E. coli from surfaces and sponges, but not as effective in eliminating S. aureus. Also, a 2003 study published in the Journal of Food Protection showed that vinegar reduced viruses by 95 percent when used as a strawberry wash.”*

Because of this, when used appropriately, vinegar can be used not only to clean but to sanitize. As a sanitizer, vinegar should be used at its full strength (5%) and warmed up to 130 degrees Fahrenheit to be effective. Since this chapter is dealing with cleaning, we will revisit the sanitizing effect of vinegar in Chapter 8: How to Sanitize.

How does vinegar work as a “cleaner” since it does not have any detergent? The acid in vinegar works as a solvent to dissolve soap scum. It also loosens mineral deposits, dirt, debris and can remove stains from appliances. The acetic acid is colorless but has a very strong smell. Because vinegar is an acid, vinegar can damage natural materials. So, be sure to read the do’s and don’ts to safely use vinegar as a “cleaner.”

### **The Do’s of Using Vinegar**

- **Soap scum**—Vinegar can dissolve soap scum. Soap scum is soap residue, dead skin, dirt, and body oils mixed with minerals in “hard water” (water that contains calcium and magnesium). Over time, soap scum can build up and become extremely difficult to remove. To remove soap scum, mix one-part vinegar and one-part water, add a little detergent and spray it on the surface containing soap scum. Allow it to work for a few minutes and then rinse with hot water. Voila! Soap scum removed! If some soap scum remains, just use a little elbow grease and scrub it until it goes away.
- **Mineral deposits**—Vinegar also works to loosen mineral deposits. Have you ever seen that white crusty residue on your showerhead or other bathroom and kitchen fixtures? Well, that crust contains mineral deposits. Sometimes, the residue is both mineral deposits and soap scum. Mineral deposits are caused by what is known as “hard” water. Hard water is water that contains calcium and magnesium. When hard water evaporates on a surface, it leaves behind calcium and magnesium deposits, otherwise known as mineral deposits. Surfaces frequently exposed to hard water can experience a build-up of mineral deposits that we often see on bathroom and kitchen fixtures.

To remove mineral deposits on fixtures, soak a paper towel in undiluted white distilled vinegar and wrap it around the fixture. Leave the paper towel on the fixture for an hour or more. If the fixture is removable, soak the entire fixture in white vinegar for at least an hour. If you don’t want to remove a fixture, like a showerhead, then fill a plastic bag with vinegar, immerse the showerhead or fixture in the plastic bag with the vinegar, use a rubber band to secure the bag to the fixture, and soak for at least one hour. After soaking, scrub and rinse. Mineral deposits...Gone!

- **Stainless steel appliances**—Sometimes, your stainless steel appliances look dull and ironically appear streaked or “stained.” To clean your stainless steel appliances, spray them with white distilled vinegar and wipe with a microfiber

cloth. After cleaning, make sure the appliance is dry. Then, use a dry microfiber cloth and dip it in olive oil and apply it going with the grain.

- **Coffee maker**—Vinegar can also be used to clean your coffee maker. Use a 50/50 mix of white distilled vinegar and water and run it through your coffee maker. Then, run water through the coffee maker until there is no trace of the vinegar.
- **Windows and glass**—Vinegar is an excellent natural option used as a window cleaner. Simply mix one-part water and one-part white distilled vinegar in a spray bottle to clean your windows. This same mixture can clean the surfaces in your refrigerator. This simple cleaning solution can even be stored in the refrigerator for quick access to clean any spills that may occur inside the refrigerator.
- **Carpet (allergies)**—For those who suffer from allergies, vinegar may be a useful cleaner to help deter dust mites. While vinegar does not kill dust mites, some believe that the acetic acid in vinegar repels dust mites. Also, theoretically, vinegar's acidity can destroy the protein in dead dust mites and their fecal matter, which by the way, is the cause of some allergy symptoms. Before using on your carpet, you should spot check for color fading. Mix white distilled vinegar with your favorite essential oil in a spray bottle and lightly mist the carpet. Allow it to air dry.

### **The Don'ts of Using Vinegar**

Although vinegar is safe for use on many surfaces, there are certain surfaces that vinegar should never be used. The acid in vinegar reacts with certain natural materials and causes damage.

- **Natural stone (marble, granite, etc.)**—Never use vinegar or any vinegar solution to clean surfaces made of natural stones, such as marble, granite, etc. Vinegar reacts with natural stone, and it can damage natural stone by eroding, staining, spotting, dulling, and etching (dull white marks) it. To fix these damaged surfaces would require resurfacing, which can be costly.
- **Unsealed grout**—Because grout is a mixture of water, cement, and sand, unsealed grout can erode with vinegar use. So, avoid using vinegar to clean unsealed grout.
- **Cast iron pots**—Vinegar should not be used to clean cast iron. The acid will react with it and cause it to rust.
- **Hardwood floors and no-wax floors**—Vinegar should not be used to clean hardwood floors or no-wax floors because the acid in the vinegar will eat away at the finish and cause dulling.

## **4. Baking Soda**

Sodium bicarbonate, commonly known as baking soda, is a type of salt that most people can find right in their kitchen cabinet. In the culinary arts, it is often used as a

leavening agent for baking bread, cakes, muffins, etc. Throughout the ages, baking soda has been used as a cleaner. It is used to freshen the air by absorbing strong odors. Baking soda is a mild alkali (8.3 pH). While most bad odors are either very acidic (sour milk) or very basic (bad fish), the mild baking soda reacts with the strong odor particles and neutralizes them. So, it doesn't just cover up the smell as many air fresheners do, it neutralizes and removes the smell. That's why people put boxes of baking soda in the refrigerator. It is also used as a gentle abrasive to scrub and remove tough particles and stains on certain surfaces. Baking soda cleans steel, chrome, glass, enamel, and plastic. As you can see, baking soda can be used for a variety of things. It is an excellent non-toxic cleaner to use as a part of your household cleaning regimen.

- **Refrigerator**—Baking soda is an excellent deodorizer and cleaner. Create a paste of baking soda and water, then use it with a cloth to clean your refrigerator. To deodorize, simply place an open box in your fridge.
- **Carpet**—Sometimes, carpets harbor smells and cause a room to have a certain stench. To deodorize the carpet, sprinkle the entire surface with baking soda, let it sit on your carpet for 30 minutes and then vacuum.
- **Oven cleaner**—If you don't have a self-cleaning oven, consider using baking soda. You can create a paste with baking soda, salt, and water or vinegar, and use a sponge or cloth to apply the paste to the oven. Let it sit for 30 minutes. Then, using a sponge with a scouring pad, scrub away. You may also spray the oven with water or vinegar and then apply the baking soda and let it sit. The tougher the job, the longer the paste should remain before scrubbing.
- **Unclog and deodorize stinky drains**—Sometimes our sinks drain slowly and have an awful smell. Before going out to purchase chemicals to unclog your drain, try baking soda first. Simply pour one cup of baking soda down the drain and let it sit for about an hour. Then heat one or two cups of vinegar. Pour the vinegar down the drain and let it sit for about 10 minutes. Lastly, flush the drain with hot water. This will remove the smell and may clear a slow drain.
- **Grout**—Baking soda is great for cleaning grout. Simply sprinkle baking soda on the grout and use a brush and a little water and scrub the dirt away.
- **Windowsill**—Here's a simple solution for clearing the dirt that gets trapped in your windowsill. Let your windows all the way up. Then, use either the crevice tool attachment on your vacuum, a mini-vacuum, or some paper towels to remove any loose dirt or debris in the windowsill. Next, generously sprinkle baking soda along the track of the window. Mix equal parts of water and white distilled vinegar in a spray bottle. Spritz the vinegar/water solution over the baking soda. Let sit for 5 - 10 minutes. While you're waiting, spray the vertical tracks of the window and scrub with an old toothbrush. Then, use a paper towel to wipe in one continuous motion down the side of the window. Repeat on the opposite side. Next, scrub the bottom of the windowsill working from one side to the center, then from the other side to the center. Now, wrap the blade of a butter knife in a microfiber cloth to get the dirt and debris trapped in the corners.

As the cloth gets dirty, shift the blade to a clean, unused part of the cloth. If there is still dirt remaining, do another light spray of vinegar and water and repeat the process.

- **Stainless steel**—Baking soda works great to shine up your stainless steel items. Whether it's your sink, or your stainless steel pots and pans, sprinkle baking soda, use a damp cloth and rub away. Rinse and dry.
- **Glass-ceramic stovetop**—Make a wet paste with baking soda. Apply it to the surface and use a cloth to gently rub. You can also sprinkle the surface with baking soda, then spray it with soapy water, and cover it with a damp, wet cloth. Let it sit for 15 minutes and then gently rub.
- **Scrub scuff marks on walls**—Baking soda is a great gentle, yet abrasive compound that is great for scrubbing away scuff marks on your wall. Simply dip your sponge or towel into the baking soda, add a little water and scrub away. It should remove scuff marks and crayon marks for those of us with children.
- **Children's toys**—You can also clean dust catching stuffed animals with baking soda. Place these items in a large bag with a cup of baking soda, take it outside and shake it vigorously. Baking soda draws out oil and dust from these items. Then take them out of the bag and vacuum all of the leftover substance off of the stuffed animals.

Baking soda is excellent for cleaning many more things such as kitchen surfaces, countertops, cooking utensils, microwaves, mildew marks in your bathroom, and the list goes on. Just do a little research, and you will find how baking soda can help you clean your home.

5. **Washing soda**, also known as soda ash, is non-toxic, but it can irritate the eyes. The chemical name for washing soda is sodium carbonate, just slightly different from its cousin sodium bicarbonate (aka baking soda). Washing soda is used in homemade and commercial laundry products because it helps to get rid of tough stains. Washing soda attaches itself to minerals that make the water hard, helping the laundry soap to bypass these minerals and penetrate stains even further. Washing soda can also help to remove grease from pots and pans, remove soap scum, remove coffee stains from surfaces, and unclog drains.

Wear gloves and eye protection when cleaning with washing soda, as it can cause serious eye and skin irritation. And be sure to keep your washing soda away from children, as large amounts can be dangerous.

## 6. Commercial Cleaners

In addition to items commonly found in the home, we can also purchase cleansers. When choosing a cleaning product, make sure you understand how to use it properly. Reading the labels will give guidance on the proper dilution and ventilation that is required while cleaning. Reading labels and taking note of the risks and hazards that accompany using a product is a necessary task. Some products have a “green,”



“safe,” or “environmentally friendly” label, meaning they should be safer to use than your regular brands for cleaning. However, many of these products are not regulated by the Environmental Protection Agency (EPA) to ensure they do not contain harmful chemicals that could affect the health of those in your household.

It is quite common to find store-bought cleaners in one’s home to clean various surfaces. Unfortunately, these products often list a plethora of dangerous, complex chemicals that many of us may not completely understand. While they may serve as effective cleaning agents, using these complex chemicals without understanding their hazards and their proper usage can be harmful and detrimental to the health and wellbeing of ourselves, our families, and the environment.

As you search for the ingredients in a product, note that due to proprietary law, all the ingredients may not be disclosed on the product label. However, the active ingredients should always be listed. The active ingredient is the chemical that causes the product to perform as it is intended. Active ingredients are often antimicrobial chemicals added to help it kill germs, bacteria, and viruses. For example, if a product says that it will “kill influenza and coronavirus,” then the active ingredient deactivates these viruses. Active ingredients are tested in laboratories to ensure their effectiveness. The other ingredients either boost the active ingredient(s), help in the cleaning process, or are dyes or fragrance. In later chapters, we will discuss how to find the additional ingredients that are not listed on the label.

Since the goal of cleaning our homes is to protect our household from hazardous germs and pollutants that can cause life-threatening diseases, then we should know more about the physical and health hazards in cleaning products. So, let’s challenge ourselves to learn a little chemistry and increase our vocabulary so we may understand those “complex chemicals” found in many household cleaners. The following information is a reference guide uncovering many chemicals in the cleaners available for purchase. This is an overview of some active ingredients and other chemicals. Be sure to use this guide to check the chemicals in the products that you already have in your cabinet. In later chapters, we will go over these chemicals in greater detail.

**Acid Cleaners**—Have you ever purchased toilet bowl cleaners, metal cleaners, hard water removers, or rust removers? If you bought any of the above, then you bought an acid cleaner. Acid cleaners can dissolve mineral deposits and hard water. They can remove rust on some metals and remove tarnish on brass and copper. So, they are considered some of the most powerful cleaners. Depending on how strong it is, acid cleaners can eat away at many things, like your clothes, metals, concrete, and not to mention your skin. Strong acid cleaners are quite corrosive and can be very poisonous. So, they must be used with care. The following are some types of acids found in store-bought household cleaners. This information is a condensed list found in an article posted by New Mexico State University College of Agricultural, Consumer and Environmental Sciences: [https://aces.nmsu.edu/pubs/\\_g/G304/welcome.html](https://aces.nmsu.edu/pubs/_g/G304/welcome.html) . Please refer to this article for more detailed information.

**Acid Cleaners**—Dissolve mineral deposits and hard water; remove discoloration from metals; used as a cleaner and disinfectant.

**Cautions:** Considered to be some of the most powerful cleaners. It can irritate eyes, skin and may burn the throat. Depending on how strong it is, acid cleaners can pretty much eat away at many things, like your clothes, metals, concrete, not to mention your skin. Strong Acid cleaners are quite corrosive, can be very poisonous and must be used with care.

Potency	Different Types	F.Y.I. & Cautions
<b>Mild Acid</b>	Acetic acid	4%-7% in vinegar.
	Citric acid	Mild acid. It has antibacterial and antiseptic properties, i.e., lemon, limes, oranges, grapefruit, non-toxic.
	Cream of tartar	Mild acid. It is a very mild acid salt.
	Gluconic acid	Mild acid. Low toxicity.
	Hydroxyacetic (or glycolic) acid	Mild acid. Stronger than vinegar.
	Levulinic acid	Mild acid. It is a non-toxic sugar-derived chemical.
	Phosphoric acid	A very mild acid. Yet more acidic than vinegar or lemon juice.
<b>Strong Acid</b>	Hydrochloric acid	Strong acid. It is poisonous, extremely corrosive, and should not come in contact with eyes and skin.
	Hypochlorite	Strong acid. It is poisonous, and breathing the fumes may also cause poisoning.
	Hydrofluoric acid	Strong acid. It can burn the skin.
	Oxalic acid	Strong acid. It is poisonous, a bleaching agent, and corrosive.
	Sodium bisulfate or sodium acid sulfate sodium	Strong acid. It is poisonous and should be used with extreme caution.
	Sulfuric acid	Strong acid. It is poisonous. It will burn the skin and emit dangerous fumes. Use it with caution.

**Alkali Cleaners**—Do you have baking soda in your kitchen? How about all-purpose cleaners, glass cleaners, drain cleaners, or oven cleaners? Do you use scouring powders to remove tough, stuck-on grime and dirt? Well, then you are using alkali cleaners. Alkali cleaners contain alkali salts like baking soda and other types of salts that help dissolve fats, oils, and proteins. Because they break down oil and fats, alkali cleaners make it easier to clean oily dirt without excessive rubbing. Alkali cleaners are meant to be used with water. The following are some types of alkali cleaners found in store-bought household cleaners. This information is a condensed list found in an article posted by New Mexico State University College of Agricultural, Consumer and Environmental Sciences: [https://aces.nmsu.edu/pubs/\\_g/G304/welcome.html](https://aces.nmsu.edu/pubs/_g/G304/welcome.html). Please refer to this article for more detailed information.

**Alkali Cleaners**—Contain alkali salts like baking soda and other salts that help dissolve fats, oils, and proteins. Because they break down oil and fats, alkali cleaners make it easier to clean oily dirt without excessive rubbing. Some alkali salts (with detergents) have water-softening characteristics. Alkali cleaners are meant to be used with water.

**Cautions:** Ammonia is an alkali cleaner that should never be mixed with chlorine and bleach because it can produce a dangerous chlorine gas that can be fatal if inhaled in large amounts.

Potency	Different Types	F.Y.I. & Cautions
<b>Mild Alkali</b>	Sodium bicarbonate	Mild alkali. It is safe around children and pets. It's not corrosive. Also known as baking soda.
<b>Moderate Alkali</b>	Ammonia	Moderate alkali. A strong, colorless gas. Too much of it can ruin or damage some surfaces. Use it with caution.
	Borax	Moderate alkali. It is comprised of sodium borate, a natural mineral compound, and it's not flammable nor reactive.
	Household ammonia	Moderate alkali. It is comprised of 5% to 10% ammonia gas in water.
	Sudsy ammonia	Moderate alkali. It is comprised of ammonia with soap or detergent.
<b>Strong Alkali</b>	Lye	Strong alkali. It is poisonous, emits dangerous fumes that can burn skin, cause blindness, and cause death if swallowed, i.e., caustic soda or sodium hydroxide.
	Trisodium phosphate (TSP)	Strong alkali. It is poisonous. It is banned or restricted use in many states.
	Sodium carbonate	Strong alkali. It is slightly corrosive and will burn skin, i.e., washing soda or soda ash.
	Sodium metasilicate	Strong alkali. It is highly poisonous and can irritate the nose, eyes, lungs, and skin.

**Bleaching Agents**—Most of us have used bleach or cleaners that contain bleaching agents to remove stains, sanitize, and disinfect. Many people use chlorine bleach to whiten clothing, disinfect bathrooms, and much more. As previously stated, never mix bleach with ammonia because it produces a dangerous chlorine gas that, if inhaled in large amounts, can kill. Some people prefer to use household hydrogen peroxide rather than using bleach because it is environmentally safe, non-toxic, and pretty much gets the jobs done. Regular hydrogen peroxide can be used to whiten clothes, and some hydrogen peroxide based commercial cleaners can be used to disinfect the toilets, to disinfect kitchen countertops, and much more. Because hydrogen peroxide is a bleaching agent, it can discolor some surfaces. Be sure to test a small area before using it on any surface. The following are some types of bleaching agents found in store-bought household cleaners. This information is a condensed list that can be

found in an article posted by New Mexico State University College of Agricultural, Consumer and Environmental Sciences:  
[https://aces.nmsu.edu/pubs/\\_g/G304/welcome.html](https://aces.nmsu.edu/pubs/_g/G304/welcome.html). Please refer to this article for more detailed information.

<p><b>Bleaching Agents</b>— Bleaching agents are used to bleach and whiten textiles, remove dirt, remove stains, sanitize, and disinfect.  <b>Cautions:</b> Never mix bleach with ammonia because it produces a dangerous chlorine gas that can be fatal if inhaled in large amounts.</p>	
Different Types	F.Y.I. & Cautions
Calcium hypochlorite	The solid form of bleach. Sanitizer. It can irritate and burn the eyes, skin, nose, throat, and lungs, causing coughing and shortness of breath.
3% hydrogen peroxide	Non-toxic. It is safe for home use.
10% or greater hydrogen peroxide	Corrosive to skin, eyes, and mucous membranes.
Sodium carbonate peroxide or sodium percarbonate	Oxygen based. It is used as a whitener, brightener, and used to remove dirt and stains from fabric and surfaces.
Sodium hypochlorite	Used in chlorine bleach. It is an alkali and a bleaching agent. It is a very strong corrosive; its fumes can irritate the eyes, skin, and respiratory tract. It can release toxic gas and even become combustible when mixed with ammonia and other chemicals. If inhaled, it can cause irritations such as sore throat, coughing, and nasal irritations; if swallowed, side effects can be severe and even fatal.
Sodium perborate	It is a milder bleaching agent. It is used in laundry detergents and other cleaning detergents and low toxicity.

**Detergents**—Most of us have used cleaners containing detergents. Examples of detergents include laundry detergents and dishwashing detergents. A detergent we frequently use is soap or dish detergent. Detergents are for use with water. They work to cut grease and grime. The essential chemicals that make detergents effective are surfactants. As we previously learned, surfactants decrease the surface tension of water so it can soak into the soiled area more easily, allowing dirt, oil, grease, and grime to break down into smaller parts and then lift away with water. Another chemical found in some detergents is called a **builder**. Builders boost the detergent's effectiveness. Therefore, detergents containing builders are referred to as heavy-duty or all-purpose. A type of builder commonly found in detergents is phosphates. While some phosphates have been banned for use, such as TSP (which is listed above under alkali cleaners), the phosphates more commonly found in detergents today have lower alkalinity and lower toxicity. The type of chemicals used in detergents largely determine their safety. Dishwashing liquid is generally considered safe for use, even in the presence of children.

**Spirit Solvents**—Solvents are chemicals that work by dissolving oily dirt and grease. Solvents are commonly found in rug cleaners, spot removers, drain cleaners, sanitizers, all-purpose cleaners, and more. Specifically, spirit solvents are those commonly found in polishes and waxes used on furniture and floors, as well as some floor wax removers. Some examples of spirit solvents are kerosene, turpentine, and paint thinners. Due to the flammable nature of many spirit solvents, be sure to carefully read the product label before use. Do not use, store, or discard them near potential heat or flame sources.

Now that we have explored the various types of chemicals found in our household cleaners, let's take a look at a list of commonly used cleaners. Before using any cleaning product, remember to **always read the label and use as directed**.

- **All-purpose cleaners**—Formulated for use on many different surfaces around the house as an all-in-one cleaner that eliminates the need for a multitude of different cleaning products.
- **Glass cleaners**—Used to clean glass, mirrors, windows, and other surfaces.
- **Drain cleaners**—Used to clear blockages and build-up from pipes and drains.
- **Oven cleaners**—Formulated to clean dirt, oil, grease, and grime from the oven.
- **Scouring powders**—A combination of abrasive powder and detergent used to scour away stuck-on dirt and debris. Some also contain bleaching agents.
- **Wood cleaner and polisher**—Used to clean wood such as wooden furniture, desks, tables, picture frames, etc.
- **Disinfectants**—Products designed to kill germs. Some disinfectants contain bleach, peroxide, alcohol, etc.
- **Floor cleaners**—Designed for use on floors. Different types of floors require different types of floor cleaners. Be sure to read the label to choose the appropriate cleaner for your floor.
- **Grout cleaners**—Formulated to remove dirt, mold, and mildew from grout. Some grout cleaners may also contain bleaching and disinfecting agents that kill mold and mildew.
- **Carpet cleaners and deodorizers**—Designed to capture dust and debris in carpets while deodorizing. Some varieties also contain cleaning agents to remove stains from the carpet.

Many of the chemicals listed pose both health and physical hazards. It is crucial to choose cleaners wisely and follow the manufacturer's instructions to minimize their risks. We will discuss the hazards of cleaning products in greater detail in Chapters 8, 9, and 11. Lastly, mixing cleaning products can cause serious injury or even death. Do not mix them unless otherwise instructed on the label.

### **Checklist of Cleaning Tools and Cleaning Products by Room**

Now that we have reviewed cleaning tools and products, it's time to decide what cleaners you will use to clean your home. The choice is yours to either make your own cleaners, use non-toxic store-bought cleaners, or purchase any cleaning solution or powder in the store or online. Be sure to choose the cleaner that is best for you and your family's health. Also, when cleaning your home, be sure to wear protective attire, such as gloves, clothes designated for cleaning (long-sleeved shirt, long pants, etc.), an apron, goggles, etc.

## 1. Bedroom, Living Room, Family Room Cleaning Tools, and Products

- ✓ Extendable microfiber duster
- ✓ Microfiber towels
- ✓ Lint roller
- ✓ Vacuum
- ✓ Broom
- ✓ Bucket (for cleaning)
- ✓ Mop and mop bucket (depending on flooring type)
- ✓ Glass cleaner
- ✓ All-purpose cleaner
- ✓ Wood cleaner and polish
- ✓ Warm water with detergent or castile soap

## 2. Bathroom Cleaning Tools and Products

- ✓ Microfiber towels
- ✓ Toilet brush
- ✓ Cleaning brush
- ✓ Broom
- ✓ Mop and mop bucket
- ✓ Bucket (for cleaning)
- ✓ Grout and tile cleaner
- ✓ Sponge with scouring pad
- ✓ All-purpose cleaner
- ✓ Disinfectant
- ✓ Warm water with detergent or castile soap
- ✓ Paper towels

## 3. Kitchen Cleaning Tools and Products

- ✓ Microfiber towels
- ✓ Cleaning brush
- ✓ Sponge with scouring pad
- ✓ Broom
- ✓ Mop and mop bucket
- ✓ Bucket (for cleaning)
- ✓ All-purpose cleaner
- ✓ Oven cleaner
- ✓ Sanitizer
- ✓ Stainless steel cleaner
- ✓ Warm water with detergent or castile soap
- ✓ Paper towels

## Section 4.3 Decluttering

“Look, sisters, wherever you live, if it’s an apartment, if it’s a room, that’s your *environment*. You can’t let that environment degenerate to filth because you live there. So, your nature and your duty by nature is to keep that house. What do you mean keep house? Put things where they belong, keep things in order, and above all, keep things clean.”

-The Honorable Minister Louis Farrakhan, “Domestic Violence: Its Causes and Solutions Part Two”

The key to maintaining a tidy and clutter-free environment is putting things where they belong and keeping them in order. As we go about the daily tasks of work, running errands, tending to our children, cooking, etc., it is very easy for clutter to accumulate when items are not put away after using them. In no limit of time, we can find ourselves in complete and utter chaos. Clothes, shoes, cups, books, toys, mail, paperwork, etc. create an unsightly mess when left strewn all over the place. Although it may seem that putting things away takes time, it really helps us to be more productive and gives more time for things that matter most. Everything kept in the proper place avoids the time wasted trying to find the things you need. Think about the time wasted looking for your keys when rushing out the door; clearing away the dishes from last night's dinner so you can prepare today's meal; clearing off the bed before you can get in it to go to sleep; tripping over toys in the middle of the night.

A messy, untidy and cluttered home can:

1. Increase the stress level and anxiety and will not provide you or your family the environment needed to enjoy good rest and find peace and contentment of mind.
2. Be a haven for germs and pests, which can lead to sickness.
3. Delay the cleaning of your home.

Untidiness and clutter make it difficult, if not impossible, to achieve cleanliness. So, decluttering is a prerequisite to proper cleaning. It is much easier to clean when the surfaces in an area or room are free of clutter. Maintaining a tidy and clutter-free home only takes minutes a day. The following are small steps that we can take to declutter the space before cleaning a room:

### **Quick Tidy to Prep for Cleaning**

1. Look around the room. Quickly determine if anything is out of place.
2. Starting with an item closest to you, pick it up and put it where it belongs.
  - a. If it's trash, throw it away.
  - b. If it's an item of clothing, hang it up or fold it and put it where it belongs; if it's dirty, place it in the dirty clothes hamper.
  - c. If it's a book, place it on the bookshelf.
  - d. If it's a toy, place it in a toy box.
  - e. If it's something you do not want, then place it in a container to be donated.
  - f. If the item does not have a place, take a moment and designate a spot to store it (such as placing mail in a box by the front door).
3. Follow this pattern until the room is free of clutter and ready to be cleaned. Be sure to move quickly and work cheerfully!

### **Habits for a Clutter-Free Home**

Keep in mind that in order for things to be put in place, they must have a designated space. A rule of thumb for maintaining a clutter-free home is everything has a place and everything in its place. To maintain a tidy and organized house, here are some quick lifestyle changes to implement to keep your home from becoming messy, cluttered, and untidy. Remember, it only takes a few minutes to declutter and organize your home every day.

#### **1. General**

When you finish using something, put it back where it belongs. Enough said. Teach others who live in your home to do the same.

## **2. Bedroom**

- Make your bed every morning.
- Donate clothes you don't wear anymore.
- Dirty clothes go in the hamper.
- Launder clothes regularly.
- Hang or fold and put away laundered clothes.
- Clear off nightstands, dressers, chest of drawers, and other surfaces every evening.
- Put toys away every evening.

## **3. House entrance**

- Place shoes neatly on a shoe rack when entering the home.
- When entering the house, immediately hang coats in the closet.
- Place a doormat at every entrance.

## **4. Home office**

- Throw away junk mail immediately once it is received.
- File needed paperwork.
- Throw away paperwork that you don't need. (Investing in a good shredder can be a great help.)
- Maintain pens, pencils, markers, etc. in a pencil cup. Once you finish using a writing utensil, place it back in the cup.

## **5. Kitchen**

- While cooking, clean as you go.
- Clear off the table every evening after dinner.
- Clean dishes after every meal.
- Keep the sink clean and empty. If you have a dishwasher, immediately place dishes and utensils in the dishwasher after use.
- Clear countertops of items after using them.
- Take out the trash every day.
- Immediately discard empty food containers, wrappers, and packaging.

These are quick and easy tasks that practically all members of the household can do, and if performed daily, will go a long way toward maintaining a clutter-free and tidy home.

### **Conquering a Clutter Catastrophe**

Some cases may require a bit more to get things in order. If you have not been in the habit of putting things away for a long time, it may take several hours or even days to declutter your home. But do not despair because there is hope! Instead of wasting time feeling bad about the mess, just get busy. Begin picking up behind yourself and putting things away, incorporating the above habits into your daily practice.

Major decluttering tasks can be overwhelming to undertake all at once. The good news is that with a consistent routine of only 15 minutes per day, you can conquer and overcome your decluttering debacle and get your home in order. Use the following steps to perform a massive declutter of your home. Select a different room each day to perform the following:



## **The 15-Minute Tidy**

1. Gather the following items: 1) a trash bag to throw away items, 2) a bin for items to give away, and 3) a bin for items that belong in another room.
2. Take the above items in the room you will declutter.
3. Say a prayer and ask Allah for strength and guidance. Thank Him for your home. Let Him know that you desire to show your gratitude for a roof over your head by working to make it clean and pleasing in His sight.
4. Set a timer for 15 minutes and begin putting things away where they belong. Move as quickly as you can to get as much done as possible before time runs out. Throw trash in the garbage bag; throw giveaway items in the giveaway bin and throw items that belong in another room in its bin.
5. Once the time is up, place the items that go in the other rooms where they belong, take out the trash, and put the giveaway items by the door so you'll remember to donate them the next time you leave the house.
6. Celebrate what you have done! Don't fret if there's a lot more to do. In just 15 minutes, you've done more than you've been doing, so settle on the best part. Thank Allah for giving you the strength to accomplish this task. Set your mind on the next room you will do tomorrow and get excited that you are making strides to get your house in order!

The next day, move on to another room and repeat these steps. If you remain consistent, in time, you will see progress in all the rooms in your home. Then, one day, you will enter a clutter-free and tidy home. All praise is due to Allah!

## **First Aid for Hoarders**

Sometimes we need a little help understanding when it's time to let go of a particular item. It may be an article of clothing, shoes, kitchen utensils, small appliances, bed linen, books, magazines, electronics, CDs, DVDs, VHS tapes, 8-track tapes, records, etc. However, if you have not touched it or thought about it in over a year, it just may be time to let it go. To help evaluate if it's time for you and an item to part, ask yourself the following questions:

1. Do I really want this? Or am I holding on to it to not seem wasteful?
2. Do I already own this? Is it a duplicate? Do I have enough of them according to what I need?
3. Am I ever going to use this? Do I need it?
4. Is it any good? Does it work? If not, am I really going to fix it?
5. If it's in good condition, do I know of someone who needs it or could put it to use?
6. Is this item serving me any real purpose?

After asking the above questions, if your answers suggest that this item is no longer of use to you and is not something that you'll probably touch or think about for another year, then put it in the giveaway bin or toss it. As your room becomes clear and clutter-free, you will be so happy that you did. Also, please keep in mind that auditing is an excellent tool in the process of decluttering. A cluttered home is often the reflection of a cluttered mind. Auditing helps us to clear the mental clutter, which will aid us in clearing the clutter in our environment. Be sure to contact the Auditing Department in your city for assistance.

## Section 4.4 Tips for Effective Cleaning

Now that we know about various cleaning tools and cleaning products, there are important steps to take to clean the home properly. These steps will lessen the likelihood of cross-contamination and make for an effective cleaning experience.

1. The first step is to identify the areas to be cleaned and then gather the necessary cleaning supplies.
2. Make sure you are wearing your protective attire.
3. Properly cleaning a surface requires the use of a cleaner of your choice. If you are diluting the solution, then use warm water. If you are using any of the natural homemade cleaners, then begin by making the solutions needed for cleaning the area. Otherwise, use the store-bought cleaner.
4. Remember, sometimes you might have to use paper towels first to wipe up large spills, crumbs, or debris from the surface. This step will ensure that you are actually cleaning and not just spreading dirt and debris on the surface.
5. To make sure all areas are clean, take your cleaning cloth and start cleaning the area from top to bottom.
6. Also, begin from the cleanest area to the dirtiest, moving in one direction, so you don't place dirt back on the clean part.
7. When cleaning with hot soapy water, immerse the cleaning cloth in your warm soap solution. Then wring out the cloth so that it is moist, but not dripping wet.
8. Use a little elbow grease and apply pressure when wiping, rubbing, scrubbing, etc. Applying pressure when cleaning is an important part of the cleaning process. Remember, when friction is applied, it aids in lifting dirt, grease, germs, or other particles off the surface that may or may not be seen with the naked eye. This step aids in ensuring that a surface is clean.
9. Wipe at least 3 to 4 times over the same area before moving on to the next area on the surface.
10. Use your cleaning cloth to rub inside, around, and in between all areas on the surface, especially when cleaning handles on sinks, doors, and light switches.
11. To make cleaning easy, you can purchase multiple pails or buckets and label them for the different cleaning areas that you have designated. For example, you would have a pail labeled "Bathroom" and another pail labeled "Kitchen." Labeling your cleaning pails and using each in its designated area will lower the risk of cross-contamination as different rooms may have different types of germs. You could also place the appropriate cleaning products and supplies in the different buckets. This will allow for a smooth transition as you move from one room to the next one. It will also allow you to easily and safely delegate the task of cleaning because those assisting you will have all the proper supplies to complete the job.
12. Remember, when using cleaning products, please read all the hazard warnings and directions on the labels. Most cleaning products (chemicals) require the use of gloves and possibly protective eyewear. *Do not mix cleaning products unless the directions instruct that it is safe. Otherwise, mixing products can cause serious injury or death.*

### How to Clean: Steps for Effective Cleaning

- ✓ Clean from the highest area to the lowest area in a room.
- ✓ Begin with cleaning the cleanest area to the dirtiest.
- ✓ When you are cleaning, move in one direction to lower the risk of cross-contamination.
- ✓ Microfiber cloth is the best fabric to rid surfaces of contaminants and debris.





## Chapter 5: How to Dust

In this chapter, we will take a look at how to properly dust to ensure that we are removing dirt, dust, and debris from surfaces and objects. The question that we have to ask is, what is dust, and why must dust be removed from our homes? According to the dictionary, dust is “fine, dry powder consisting of tiny particles of earth or waste matter lying on the ground or on surfaces or carried in the air.” You may ask, specifically, what do those tiny particles consist of? Well, hold on to your hat or headpiece because you will be surprised by what makes up the “tiny particles of earth and waste matter.”

According to a study done by Layton and Beamer titled, “Migration of Contaminated Soil and Airborne Particulates to Indoor Dust,” that was published in the Nov. 1, 2009 issue of the *Journal of Environmental Science & Technology*, and other studies, dust consists of a hodgepodge of different particulates. This assortment of particles can differ depending on where you live, when your house was built, the number of people that live in your house and their habits (what they cook, what they use to clean, if they smoke, if they have indoor pets, etc.). However, regardless of the home’s location, house dust can consist of dead human skin that we shed daily, dead insects, fungi, bacteria such as *Staphylococcus aureus*, dust mites, and their droppings, pollen, lint, tiny particles of plastic, fibers from carpet, upholstered furniture, drapes, clothing, and other fabrics, soil tracked in from our shoes, animal fur, food bits, particles like soot from smoke and cooking, pollutants from air blown inside the house from the outside, and more.

Unfortunately, this list gets worse. Because we track in contaminated soil and polluted air finds its way inside the house through the doors, vents, and windows, dust can also contain lead, arsenic, and other harmful substances. Research done by Layton and Beamer found that nearly 60% of dust in the house comes from outside. In addition, they found that 60% of arsenic found in house dust on the floor comes from the arsenic in the air, and the rest is from tracked-in soil. Chances are if you have dust in your home, you and your family are exposed to pollutants. This becomes especially dangerous for small children who spend most of their time crawling and playing on the floor and will put their dirty little hands and anything they can find in their mouths. I think we would all agree that we don’t want any of these things floating around in the air that we are breathing or on the surfaces that our loved ones are constantly touching.

To help maintain the health and welfare of ourselves and our families, when we clean, we must dust. Dusting before cleaning is like sweeping before mopping—one must come before the other. According to Webster’s Dictionary, dusting is the act of making something clean by brushing or wiping away dirt and dust from the surface. Dusting is an integral part of the cleaning process. If a surface is dusty, then the dust must be removed before the surface can be cleaned when further cleaning is required. Dusting is a task that many may overlook, but it is essential in maintaining a healthy and clean environment, as it helps to remove dirt, allergens, and other pollutants from the surfaces in our homes.

Removing dust from our homes safeguards us by helping to keep the air clean. Whenever we don’t dust regularly, then dust mites, allergens, and other pollutants are more prevalent in our homes. This can adversely affect the health and well-being of all of our family members, especially those with respiratory conditions like asthma. Allergens and other pollutants found

in dust can trigger an asthma attack. Other allergic reactions such as coughing, wheezing, sneezing, and watery eyes can also occur more frequently in dusty environments. Have you ever been in a room and you kept sneezing and didn't know why? Dusty surfaces may have been the culprit.

## Section 5.1 Tools for Dusting

When choosing which tools to use, consider the surfaces that will require dusting as they vary in shape, size, texture, location, etc. Knowing what tools you should and shouldn't use is critical. For example, according to Carolyn Forte, director of the Good Housekeeping Institute Cleaning Lab, "Feather dusters are far from helpful. This tool simply spreads dust from one surface to another." Think about it—where does the dust go when you use a feather duster? You can actually see dust particles floating in the air while you're dusting. That dust has to land somewhere. The feather duster is not removing the dust. It's just relocating the dust because it will eventually settle on another surface. However, if using a dampened cloth or a microfiber duster, then the dust is actually picked up as opposed to being released back into the air. The following are recommendations for dusting tools that can be used in the different areas of your home. You may recall some of these items from Chapter 4: How to Clean. Please refer to Chapter 4 for detailed information.

- **Microfiber cloth/duster**—Microfiber cloths work best at wiping away dust, dirt, and impurities. A microfiber cloth is one of the best tools you can have in your dusting arsenal. Due to the construction of this great tool, it can remove large quantities of microbes, including hard-to-kill spores. This fabric can be used dry or damp, and it is excellent for polishing. For more information on the care and construction of microfiber cloth, refer to section 4.2 in Chapter 4. Make sure to have plenty of clean microfiber cloths available before you dust.
- **Lambswool duster**—A lambswool duster is made of lamb's wool. The fiber naturally contains lanolin, which is a waxy substance that attracts and holds dust. Unfortunately, over time, washing the lambswool duster can remove lanolin and will render it less effective. Large lambswool dusters are good to use on large surface areas like walls.
- **Disposable electrostatic cloths**—These cloths are made of small polyester fibers. They use electrostatic forces (static charge) to attract dust from surfaces. Disposable electrostatic cloths can be used without furniture polish and other cleaners and are also great tools for televisions and computer screens which are dust magnets.
- **Lint roller**—A lint roller is "a roll of one-sided adhesive paper on a cardboard or plastic barrel that is mounted on a central spindle, with an attached handle." It is used to clean delicate surfaces, like lampshades, dust on velvet such as the back of picture frames, velvet jewelry holders, etc.
- **Compressed air**—For getting down into cracks and crevices of electronics and certain equipment such as sewing machines or sergers, compressed air can be very helpful with the removal of dust and debris. Although compressed air will help, it will also cause dust to resettle in other places. As a result, you should follow-up the use of compressed air by dusting or vacuuming the surfaces that surround the area where the compressed air was used. Compressed air is also good to remove dust on plants.

Be sure to take plants outdoors first and then spray the leaves.

- **Vacuum cleaner soft brush attachment**—The soft brush attachment on your vacuum cleaner is an excellent tool for removing dust on furniture upholstery and curtains.
- **Extendable microfiber duster**—An extendable microfiber duster is comprised of a duster head made of microfiber that is attached to a pole, which extends to clean hard to reach areas such as the ceiling fan, light fixtures, crown molding and other hard to reach spots that need dusting. Some come with different attachments such as a cobweb duster, ceiling fan duster, and wall duster.

If you don't have an extendable microfiber duster, you may also use a broom or a flathead mop. Although we typically think of a broom in terms of sweeping the floor, the broom head can be used with a microfiber cloth to remove spiderwebs and cobwebs in high places that are hard to reach, such as the corners of ceilings. Simply wrap a microfiber cloth around the broom head and secure it with a shoelace or a rubber band. You may also use a flat head mop to clean the ceilings and walls. Simply, wrap and secure a microfiber cloth around the flathead mop and use it to clean the ceiling and walls.

- **Protective attire**—Before cleaning, we must put on the proper cleaning clothes to help protect us from the hazards of cleaning.
- **Dust mask**—A dust mask is “a flexible pad held over the nose and mouth by elastic or rubber straps to protect against dust encountered during construction or cleaning activities.” During cleaning, a dust mask is worn to protect against allergens from dust.
- **Goggles**—Some dusting tasks may require goggles to protect our eyes.

Having different types of dust-busting tools available will enable you to effectively tackle any dusting task in your home regardless to shape, size, texture, or location.

## Section 5.2 Dusting the Home

Now that you have selected the right tools, here are targeted dust-busting strategies for your home's easy to reach areas and hard-to-reach spots. Some areas require daily dusting, while other areas may require dusting weekly, monthly, every three months, every six months or even yearly. How often dusting should occur will be covered at the end of this chapter.

Dusting is the act of making something clean by brushing or wiping away dirt and dust from the surface. Wiping to remove dust and debris is different from wiping with a cleanser to clean the surface. Using a circular motion to clean a surface with soap and water is effective; however, using circles when dusting is highly inefficient. Using circles to dust just spreads dust around. So, how should we dust?

1. When dusting, be sure to have plenty of microfiber cloths available to switch your dusting cloth as needed.

2. Since dust falls, dust from top to bottom. For example, a ceiling fan should be dusted before dusting the coffee table that is directly underneath it.
3. Here are two dusting methods for vertical surfaces: 1) Carefully wipe in one direction, moving from the top to the bottom (like the outside of a cabinet door). If any dust remains, then repeat the stroke until the area is clean. 2) Starting at the top left, wipe while moving toward the right. When you reach the right, move down slightly and wipe while moving toward the left. Repeat this process from left to right and right to left, using a slightly overlapping S pattern, working your way toward the bottom.
4. Here are two dusting methods for horizontal surfaces: 1) Carefully wipe in one direction, moving from back to front (like wiping the inside of a cabinet going from back to front or wiping crumbs off a table after a meal). If any dust remains, then repeat the stroke until the area is clean. 2) Starting from the back left, wipe while moving toward the right. When you reach the right, move down slightly and wipe while moving toward the left. Repeat this process from left to right and right to left, using a slightly overlapping S pattern, working your way toward the front.

Now let's apply these basics of dusting to a home. We are going to dust this home from top to bottom, starting with the ceiling, ceiling fan, light fixtures, and ceiling vents. Then, we will move down to the walls and doors, window frames, window treatments, blinds, and baseboards. Next, we will continue on to dust the furniture and electronics in the room: bookshelf, television, coffee table, and couch. And lastly, we will dust the items on the coffee table, which include a lamp, picture frame, and a telephone. Alright, dustbusters, let's get to dusting!

### **Before Dusting**

We should perform the following steps before we dust:

1. Have extra dusting cloths available to replace them as needed.
2. Make sure that you are wearing your protective clothing.
3. Declutter the space. Please review Chapter 4 to learn more about decluttering.
4. Remove any items from the surface that you will be dusting. (For example, if you are dusting a nightstand, remove any items that are on it and place them in another area.)
5. Before dusting, remove linens, pillows, throws rugs, and cushions. Take them outside and give them a good "whack." Shake, hit and beat them to get the trapped dust out. For items like a throw rug, lay it on a rail and take something like a broom or a tennis racket and beat the dust out.
6. Dust will inevitably become airborne while dusting hard to reach spots, such as ceilings, ceiling fans, and light fixtures. Replace your air conditioning filter with a new filter before dusting so that it may trap the airborne dust. Manufacturers recommend changing fiberglass air filters every month and high-end pleated filters every six months.
7. Change your vacuum cleaner filter before dusting.

### **Dusting**

Now we are ready to dust the room from top to bottom. The first principle in dusting is to start at the top and work your way down. As previously stated, since dust falls, always dust starting at the top of a room and work your way to the bottom. Then, go around the room until everything is dusted. Let's look at how this works.



1. Start by dusting the ceiling.

- **Ceiling**—The ceiling accumulates dust and cobwebs over time. Therefore, the ceiling requires monthly dusting. First, visually inspect the corners of the rooms and the walls for spider webs, cobwebs, dust particles, etc. If spiderwebs are in the corners, you can easily remove them with an extendable microfiber duster or even a broom. Every now and then, a spider’s web will appear out of nowhere because the spider recently spun it. However, a cobweb is an abandoned spider’s web, meaning the spider has long since spun the web and is no longer using it. Regular dusting will prevent the presence of cobwebs in our homes.

Begin dusting the ceiling using an extendable microfiber wall duster, a flat head mop, or vacuum cleaner. If you are using a flat head mop, wrap the mop head in a microfiber cloth and secure the cloth. If you are using a vacuum cleaner, use the long brush attachment to dust the ceiling. Starting at one end of the room, gently use long smooth strokes until you reach the other end of the room. Go back and forth from one end of the room to the other end of the room using a slightly overlapping zigzag pattern until the ceiling is dust-free. After dusting the ceiling, dust the crown molding. If you don’t have crown molding, dust the groove where the wall meets the ceiling and the corners. Here is another hack to dust corners and grooves where the wall meets the ceiling. Wrap a microfiber towel at the top handle of a broom. Slide the wrapped handle along the groove and corners to remove spiderwebs, cobwebs, and dust.

**Note:** There are different ceiling textures, and the most difficult to clean is the popcorn ceiling. This ceiling texture was popular in the 1970s when asbestos was commonly used in home construction. The U.S. Consumer Product Safety Commission (CPSC) banned the use of asbestos in the late 1970s. If your home was built before 1980, your ceiling could contain asbestos, so you may want to get it tested first before you attempt to clean it.

2. Next, dust your ceiling fan, light fixtures, and vents. These can be quite dusty, so be sure to wear your dust mask and goggles if needed.

- **Ceiling Fan**—Turn off the fan before dusting. There are a few methods to clean a ceiling fan.

**Method 1**—Use an extendable microfiber duster with a ceiling fan duster attachment. Some of these attachments are circular or V-shaped, while others are bendable and can be bent to your desired shape to clean the ceiling fan blades. Start dusting at the top of the motor housing unit and work your way down to the blades. For circular attachments, slide the duster back and forth, going from the end of the blade to center and back to the end of the blade. Repeat as needed. For V-shaped attachments, start from the center near the motor unit of the ceiling fan. Sandwich the blade in between the duster. Then, with one smooth stroke, slide the duster across and off the blade. Be sure to wipe the sides of the blades. Repeat as needed.

**Method 2**—Another method is the pillowcase method. Use a step stool to reach the ceiling fan. Then, gently insert the blade of the ceiling fan into the pillowcase. Use the body of the pillowcase to gently dust the blade by wiping the top, bottom, and sides of the blade. Afterward, gently slide the pillowcase off the blade, trapping the dust inside of the pillowcase. Repeat with the other blades. After completing the blades, use a microfiber cloth to dust the entire ceiling fan starting from the top of the motor housing unit and work your way down (including the blades) to the bottom of the ceiling fan. When complete, step outside to shake out the dust in the pillowcase.

Some ceiling fans have intricate details that are hard to reach. Use compressed air to blow dust from the nooks and crannies of the motor housing unit. Then, dust the motor and blades by wiping them with a microfiber cloth.

**Note:** Did you know that most ceiling fans have a fan direction control switch? This switch will cause the blade to turn clockwise or counterclockwise. During the colder months (winter), your blade should turn clockwise at low speed to redistribute warm air and warm the room. During the warmer months (summer), your blade should turn counterclockwise to push the cool air down and cool off the room.

- **Light Fixtures**—Use an extendable microfiber duster to dust the light fixtures. Be sure to turn the light fixture off before dusting. Use a dry microfiber cloth or duster to wipe light bulbs. For more detailed dusting, you will need a step stool and microfiber cloth. Using a step stool, remove the glass globe covering the light bulb. Use a dry microfiber cloth to dust the fixtures and light bulb. Remember, dust falls. So, dust from the top of the light fixture to the bottom. If dirt and debris are inside of the glass globe, shake it out into a trashcan. Over time, these globes can become an insect graveyard, so be sure to dump out any dead insects. Wash with soap and water, dry and place the globe back on the light fixture.
- **Vents (Ceiling)**—You can dust vents easily by using the long brush attachment on the vacuum cleaner. Turn off the thermostat and vacuum the vent along the slots. If you do not have a vacuum cleaner, simply use a brush or a broom and brush the dust off. Follow it up by dusting with a microfiber cloth. If the vent requires deeper cleaning, turn off the heating and air. Unscrew the grill. Use a brush with soap and water to clean the grill, then screw it back in place. Chapter 6: How to Clean Surfaces provides further details on how to clean a vent.

**Note:** It is recommended by the National Air Duct Cleaners Association to clean your ducts if, 1) “Mold has been found in your furnace or air conditioning system.” 2) “Your home was just built or has undergone a major renovation.” 3) “Your home is very dusty, no matter how often you clean.” 4) “You’ve noticed your heating and/or cooling costs climbing.” If you are experiencing any of the above, contact a professional to clean your ducts. Generally, experts recommend having your ducts cleaned professionally once every three to five

years. The following is a warning by the National Air Duct Cleaners Association (NADCA): “Beware of air duct cleaning scams. You should be aware that some non-NADCA companies use scare tactics and bait-and-switch methods to squeeze money out of their clients or don’t clean the HVAC system at all, let alone to the industry’s standards.”

3. After dusting your ceiling fan, light fixtures, and vents, we will work our way down and dust the walls, door frame, and doors, window frames, window treatments, and blinds.
  - **Walls**—Just like the ceiling, the wall can be dusted by using an extendable microfiber wall duster, a flat head mop with a microfiber cloth attached to it, a vacuum cleaner with the long brush attachment, or a lambswool duster with an attachment. Begin near the ceiling at the corner, and drag the duster or vacuum slowly, downward to the floor. Always start dusting from the top of the wall and work your way down. If any dust remains, repeat the stroke until the area is clean. Repeat the process, moving across the wall, from top to bottom, until the entire wall is dust-free. Be sure to have extra microfiber cloths to change as needed.
  - **Door Frames and Doors**—To dust the doorframe and doors, use a microfiber duster or cloth. Beginning with the door frame, start at the top and dust the top edge of the door frame and all the way around the door frame. Open the door and dust the door beginning at the top edge of the door. Then wipe the door from top to bottom using a slightly overlapping tight S pattern; wipe from left to right and right to left until you reach the bottom.
  - **Window Frames**—Use a microfiber duster or cloth, starting from the top edge, wipe the window frame all the way around and finish it by wiping the window stool or ledge.
  - **Window Treatments and Blinds**—Remove dust from curtains by vacuuming them using the soft brush attachment or by removing and washing them according to the washing instructions on the label. If you have both curtains and blinds, dust the curtains first to avoid reintroducing dust to the blinds.

There are several methods to dust blinds. Dust blinds by vacuuming using a soft brush, or use a microfiber duster, microfiber cloth, or even a sock.

- i. **Method 1**—Dust using a vacuum with the soft brush attachment. For vertical blinds, open the blinds. Use the vacuum on low suction and start vacuuming, one panel at a time, from top to bottom, while supporting the panel with one hand from behind. Repeat on the other side of the panel. For horizontal blinds, open the blinds, start from the top left side of the blinds and move to the right, then continue from left to right or right to left, one slat at a time. Vacuum using an S pattern until you reach the bottom. Don’t forget to vacuum the handle on the blinds from top to bottom.
- ii. **Method 2**—Dust using a microfiber duster. For vertical blinds, carefully wipe in one direction, starting at the top of a panel and work your way down. Repeat on the other side of the panel. For horizontal blinds, open the blinds, start from the top left side of the blinds and move to the right,

one slat at a time. For quick dusting, slightly open the blinds and dust multiple slats at a time. Flip the blinds to the other side and repeat the previous steps until the surface of the blinds is clean. Dust the blinds handle by starting at the top and moving to the bottom.

- iii. **Microfiber cloth or socks**—For vertical blinds, using both hands, starting at the top, sandwich a panel in between the microfiber cloth. If you are using socks, slip a sock on each hand and sandwich a panel in between your hands. Carefully wipe in one direction, starting from the top of a panel and work your way down. For horizontal blinds, open the blinds, start from the top left side of the blinds. Sandwich a slat in between the microfiber cloth or in between one hand with a sock. Wipe moving from left to right, one slat at a time. You may simply wipe the top panels from left to right, going top to bottom and then flip the blinds and dust the other side in the same manner. Dust the blind handle by starting at the top and moving to the bottom, carefully wiping in one direction.

- **Baseboards**—Lastly, dust the baseboards. You may use a dry microfiber cloth or a vacuum cleaner with the brush attachment. If you are using a dry microfiber cloth, then you will have to get down on your hands and knees. Fold a towel and place it on the floor so that you may kneel comfortably and dust the baseboard. If your baseboards are heavily soiled, you will have to clean it after dusting. In Chapter 6: How to Clean Surfaces, we will learn how to clean a baseboard.

4. **Good Job! Dustbusters**, we have dusted much. Now that we have dusted from the ceiling to the walls, doors, and windows, we can begin dusting all surfaces in the room. There is a bookshelf, a television, a couch, and a coffee table. Learning how to dust these surfaces will aid us in dusting many other similar surfaces.

- **Bookshelf**—To begin, remove any items on top of the bookshelf and all items in the bookshelf. If the bookshelf is taller than you, get on a step stool and look at the top of the bookshelf. Starting from the outside, use a microfiber cloth or duster to dust the top of the bookshelf. Begin dusting from back to front, carefully wiping in one direction or dust from left to right using a slightly overlapping tight S pattern. Work your way across the top of the bookshelf until the top surface is dust-free.

Next, dust the exterior sides of the bookshelf. Watch out for the back as it may have been neglected and is probably a dirt magnet. Wipe starting from the top left and wipe across to the right or vice versa. Using a slightly overlapping tight S pattern, continue to wipe until you reach the bottom of the bookshelf. Work your way around the bookshelf until the exterior sides and back are dust-free.

Now, dust the interior surfaces of the bookshelf. Start with the interior of the top shelf and work your way down to the bottom. First, dust the interior top by carefully wiping in one direction, moving from back to front, or dust from left to right and right to left using a slightly overlapping tight S pattern toward the front. Then, dust the vertical interior side of the top shelf. Next, dust the horizontal surface (along the bottom) of the top shelf. Continue dusting each shelf in this

manner, working your way down to the bottom shelf until all the interior surfaces are dust-free.

Dust each item individually that was removed from the bookshelf and place it back in its proper place. Wipe each book with a dry microfiber cloth.

- **Dusting a Television**—Televisions need to be dusted and cleaned occasionally so that dust and fingerprint smudges do not build up. You should periodically clean your TV, according to the manufacturer’s care instructions, to keep it looking new and to maintain a clear picture. Since televisions are electronic devices, special care must be taken when dusting them. The Good Housekeeping Institute recommends using “a dry microfiber cloth that’s designed to clean and remove smudges from eyeglasses, cell phones, and camera lenses.” This is also known as an optical microfiber cloth or a microfiber eyeglass cloth, and it is perfect for dusting your television screen. You may also use an electrostatic cloth. As previously mentioned, this type of cloth helps to pick up dust without stirring it up due to its electrostatic surface charge. As a result, they should not be wet. So, the best option is an optical microfiber cloth because you can dampen it to spot clean.

In this room, the television is a flatscreen television on a stand. We have read the manufacturer’s care instructions, and we know that we should use a dry microfiber cloth or electrostatic cloth to dust the television. When dusting a television, you should first dust the frame, then the screen, and finally the base and stand.

1. Turn off the television and let it cool down a few minutes. Unplug the television.
2. Using either a microfiber cloth or an electrostatic cloth, dust the frame of the television from top to bottom. Begin with the top edge and work your way down the frame. Be sure to wipe the sides of the frame.
3. Next, dust the television screen. Carefully wiping in one direction, wipe from the top of the screen to the bottom, or starting from the top left, dust from left to right using a slightly overlapping tight S pattern until you reach the bottom. If any dust remains, then repeat until the area is clean. If any smudges remain, use a slightly damp optical microfiber cloth to spot clean the smudge, then immediately dry the area with a dry microfiber cloth.
4. Use your vacuum’s soft dusting brush and low suction to remove dust from any vents, ports, and cable connections.
5. Next, dust the base of the television. Start from the highest area of the base and move to the lowest. Last, dust the stand from back to front. Carefully wipe in one direction. If any dust remains at any point, then repeat the stroke until the area is clean.
6. After cleaning the base and stand, dust the cord. Plug the television back in.

**Note:** To remove smudges and fingerprints, all you will need is distilled water and a microfiber eyeglass cloth. However, never spray liquid directly on your television to avoid ruining it. We will go further into how to clean a television screen in Chapter 6: How to Clean Surfaces.

- **Dusting a Couch**—To remove dust from your couch or any upholstered furniture, vacuum it. First, remove your cushions and pillows. Next, brush off any debris under the cushions. Now, use the upholstery attachment or a brush attachment on the vacuum to loosen and suction up dust, dirt, and debris. Start at the top and move from left to right as you work your way down to the bottom. Be sure to use overlapping strokes. Next, vacuum the cushions and pillows. If weather permits, you can take the cushions and pillows outside and give them a good beating. This will dislodge dirt, debris, and dust. Lastly, use the crevice attachment to vacuum around the seams of the couch. Replace the cushions and pillows after vacuuming.
  
- **Dusting a Coffee Table**  
 Coffee tables tend to become dusty if not cleaned regularly. Remove all items from the surface before dusting. In this instance, the coffee table we are dusting contains a lamp, a telephone, and a picture frame.
  1. Dust your coffee table with a microfiber cloth.
  2. Dust the top of the table first. Begin dusting from back to front and carefully wipe in one direction or dust from left to right using a slightly overlapping tight S pattern to dust the top of the table. If any dust remains, repeat the strokes. Work your way around the top until the entire surface is dust-free.
  3. Dust any carved or engraved areas (if applicable). These areas are most likely to collect dust. Use a soft brush to get into the nooks and crannies. Then, wipe with a microfiber towel.
  4. Next, dust the table legs. Starting at the top of one leg, carefully wipe in one direction and dust from top to bottom. If any dust remains, repeat the stroke. Work your way around each leg until all of the legs of the coffee table are dust-free.
  
- 5. Alright dustbusters, we are almost at the end of dusting this room. Now, let's take a look at how to dust the items that were on the coffee table so they will be dust-free before putting them back in place.
  - **Lamp (base and lampshade)**—Make sure that the lamp is unplugged. Using a dry microfiber cloth, starting from the top of the lampshade, wipe downwards to remove dust. You may also use a vacuum cleaner with the small brush attachment, or use a lint roller to remove dust from the lampshade. Next, wipe the base of the lamp from top to bottom.
  
  - **Telephone (base and receiver)**—Pay special attention to the handset and the keypad as these areas are germ hotspots. You will have to disinfect them with a disinfectant wipe after we dust and clean the phone. Keep in mind the telephone is an electronic device, so be mindful of how you clean it and refer to the manufacturer's instructions. If you are dusting first before cleaning and disinfecting, simply use a dry microfiber towel to wipe the dust away, then clean and disinfect.

- **Picture**—Wipe the frame with a microfiber cloth before cleaning the glass picture cover. You may use a lint roller to dust the back of the picture if it's velvet. After dusting, you may use a different microfiber cloth, a glass cleaner, or a non-toxic cleaner such as a vinegar and water solution to clean the glass part of the picture frame. In the following chapter, we will discuss how to clean surfaces after dusting.

### Section 5.3 What Surfaces Need Dusting

Remember, all surfaces collect dust. Whether hard or soft, horizontal or vertical, high or low—they all get dusty and dirty. However, as previously discussed, different methods and different tools are required. One-size-fits all does not apply when it comes to dusting the various surfaces in our homes. Some surfaces that require regular dusting include, but are not limited to:

✓ Ceilings	✓ Appliances
✓ Crown molding	✓ Behind appliances
✓ Ceiling fans	✓ Bookshelves & books
✓ Window frame and sills	✓ Nightstands
✓ Wall trims	✓ Dressers
✓ Walls	✓ Armoires
✓ Vents	✓ Mirrors
✓ Corners of the rooms (ceilings and floors)	✓ Furniture
✓ Baseboards	✓ Mantles
✓ Headboards	✓ Ledges
✓ Curio cabinets	✓ Lamps
✓ Tables	✓ Lampshades
✓ Electronics	✓ Indoor plants
	✓ Soft toys

#### A Closer Look—Dusting a Living Room

Let's take a closer look at the process of dusting by using the following scenario as a guide.

- **Scenario: The Dust Mite-y Living Room**

Sister Maryam has been coming to her weekly M.G.T. Class to learn How to Keep House. She has been dusting the easy to reach areas in her home daily and some other areas weekly. However, today is the day that she performs her monthly deep cleaning. Her living room is in dire need of dusting from top to bottom. Her living room has two side chairs and a sofa. The chairs are all made from cloth with wood trim along the bottom. Beside the sofa, there are two side tables with shaded lamps and pictures on them. There is one long coffee table in front of the sofa with books and an artificial plant. The window treatments are horizontal blinds and curtains. A curio sits in one corner that is filled with pictures, awards, and trinkets. There is a television that sits on a television stand. She also has a ceiling fan with lights. Now, where do you start tackling the dust? Remember, we dust from high to low, right? In this scenario, we would do the following:

#### Before Dusting the Living Room

1. Gather needed tools.

2. Have extra dusting cloths available to replace them as needed.
3. Declutter the space.
4. Remove throw blankets, pillows, throws rugs, cushions, then take them outside and give them a good “whack.”
5. Change the air conditioning filter.
6. Change the vacuum cleaner filter.
7. Remove any items from the surfaces that you will be dusting.

### **Dusting Sister Maryam’s Living Room**

1. Ceiling
2. Ceiling fans
3. Lights and light fixtures
4. Wall vents
5. Walls and doors
6. Window frames
7. Window treatments and blinds
8. Curio (Including the awards, pictures, and trinkets on the inside)
9. Television
10. Television stand
11. Coffee and side tables (Including the base of the lamps, lampshades, pictures, books, and artificial plant)
12. Chairs and sofa upholstery
13. Trim on the bottom of the chairs
14. Bottom corners of the room
15. Baseboards

### **Section 5.4 Tidying Your Tools**

Once finished dusting, clean the items used to dust your home. This ensures that the next time you dust, you do not transfer dust from your cleaning tools to the surfaces that you are trying to clean. The process for cleaning your dusting tools will vary based on the tool. For example, microfiber cloths are washable. However, do not use bleach, fabric softener, or vinegar, as these will damage the fiber and render it ineffective in the long run. Microfiber should be cleaned in warm water using a nonbleaching detergent. Wash them with like microfiber fabrics. Remember, the cleaning process will vary based on the item that you are using. Please make sure that you are cleaning your tools as instructed by the manufacturer.

### **Section 5.5 Other Strategies to Reduce Dust Accumulation in Your Home**

Here are some additional practices to help mitigate the amount of dust, allergens, and pollutants that are in our home.

- ✓ **Remove shoes when entering the home**—Since the majority of dust actually comes from outside, removing your shoes before entering your home is paramount.
- ✓ **Regularly change the air filter**—You should regularly change the air filter in your heating, ventilation, and air-conditioning unit (HVAC unit). Dirty filters are ineffective at removing dust and allergens. Also, explore the various types of air filters that are available on the market. Filters come in different price ranges, and they offer different levels of filtration. Typically, as the price increases, so does the level of filtration. Filters can help with the reduction of a variety of substances, such as household dust,



lint, pollen, smoke, cough and sneeze debris, and bacteria and viruses. It is also important to make sure that air filters are the proper fit for your HVAC system. A filter that is the wrong size will be ineffective.

- ✓ **Use an air filtration system**—An air filtration system can help improve the air quality of our homes by removing dust particles. Air filtration systems come in a variety of price ranges and filter different things from the air. Research to find a system that suits the needs of your household.
- ✓ **Maintain a regular dusting schedule**—Although removing our shoes, using the proper air filter, and using an air filtration system are a few things that can help to reduce the amount of dust in our homes, none of these things take the place of dusting. Dusting regularly, in the correct manner, using the proper tools is a must. Develop a schedule for dusting your home, add it to your calendar, and make the time and a habit of getting it done. Remember, you should always vacuum or mop after you dust to remove the dust that has settled to the floor.

<b>Dusting Schedule</b>
<b>Daily Dusting</b>
<ul style="list-style-type: none"> <li>✓ Kitchen counters</li> <li>✓ Tables</li> </ul>

<b>Weekly Dusting</b>
<ul style="list-style-type: none"> <li>✓ Easy to reach areas</li> <li>✓ Electronics</li> <li>✓ Furniture (including items on the furniture)</li> <li>✓ Appliances</li> <li>✓ Blinds</li> </ul>

<b>Monthly Dusting or Every Two Months (as needed)</b>
<ul style="list-style-type: none"> <li>✓ Ceilings</li> <li>✓ Ceiling fans</li> <li>✓ Light fixtures</li> <li>✓ Vents</li> <li>✓ Door frames</li> <li>✓ Walls</li> <li>✓ Baseboards</li> <li>✓ Window frames</li> <li>✓ Window treatments</li> <li>✓ Replace fiberglass air filters</li> </ul>

<b>Every six months</b>
<ul style="list-style-type: none"> <li>✓ Replace high end pleated filters</li> </ul>

<b>Those who suffer from allergies</b>
<ul style="list-style-type: none"> <li>✓ Dust easy to reach spots bi-weekly</li> <li>✓ Dust hard to reach spots every two weeks</li> </ul>

## Notes


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## Chapter 6: How to Clean: Cleaning Surfaces in Your Home

*“Unclean things are for unclean ones and unclean ones are for unclean things, and good things are for good ones and good ones are for good things; these are free from what they say. For them is forgiveness and an honorable sustenance.”*

-Holy Qur’an, Surah 24:26

Cleaning your home is the first line of defense in providing a safe and healthy environment for you and your family. When cleaning your home, you are physically removing visible dirt, dust, germs, soiled items, and impurities that may be lurking. Cleaning does not kill germs, but it is a necessary step in helping to remove these disease-causing germs from your home. In the previous chapters, we studied pre-cleaning practices, such as mapping out a cleaning strategy, assessing our tools and products, and decluttering. We also learned how to dust to remove any dirt and debris before cleaning. Now that we have performed those tasks, it’s time to clean surfaces.

Before you can begin to clean a surface, you should identify the type of surface to determine how to clean it. Surfaces are either **porous** or **non-porous**. Different surfaces may require various tools, products, and methods to clean them.

**Porous surfaces** are those that have holes, either visible to the naked eye or microscopic holes, which allow the liquid to seep through or become absorbed into the surface. Porous surfaces include those made from fabric, sponge, paper, untreated wood, cardboard, natural untreated granite, natural untreated marble, and linoleum. Porous home surfaces include but are not limited to upholstered chairs, couches with cushions, rugs, drapes, and pillows. **Non-porous surfaces** are those that are completely smooth at the molecular level, allowing no liquid to pass through or seep into the surface. Non-porous surfaces include those made from plastics, glass, metals, quartz, vinyl, ceramic tile, porcelain tile, treated and sealed granite, and varnished wood. Countertops, tables, sinks, handles, and knobs are examples of non-porous surfaces in the home.

When cleaning a surface, keep in mind three things. First, always read and follow the use and care guidelines that come with that particular item. Second, identify the right tools and products to use. And lastly, use the appropriate method for cleaning.

### Section 6.1 Use and Care Guidelines

Following care instructions and guidelines is the first step in learning how to clean surfaces. Because different surfaces require different cleaning practices, reading the care instructions will prolong the life of the things in your home by ensuring they are cared for properly. The care instructions tell you what tools and products are needed to clean an item and how to safely and effectively clean a surface without causing damage. If you skip reading the care instructions, you risk damaging and destroying something that you value. Once you learn how to clean a particular surface, then you are empowered with the knowledge of how to clean similar surfaces. The following scenario will give us a picture of how this process works.

#### Sticky Stella Gets the Laptop

Sister Maryam just purchased a \$4,000 Dell Latitude Rugged Extreme laptop. Five minutes after she set up the laptop, five-year-old Stella comes running in with sticky fingers, and of course, the first thing the child does is “explore” Sister Maryam’s new laptop with her sticky,

dirty hands. The brand new, expensive laptop is now covered in sticky juice and cookie crumbs and needs a good cleaning. So, how exactly does Sister Maryam clean the surface of the laptop? To protect her investment and not lose her hard-earned money, she reviews the care instructions provided by the manufacturer. She goes to the following website to learn how to clean her laptop: <https://www.dell.com/support/article/en-us/sln308919/guidance-for-keeping-your-dell-technologies-equipment-clean?lang=en>. It states:

### *Client Systems*

*We understand customers may have questions about cleaning and disinfecting options for their Dell products. The guidance below applies to all Dell-branded PCs, monitors or display screen, docking stations, keyboards, and mice.*

- 1. We recommended you wear disposable gloves when cleaning and disinfecting surfaces.*
- 2. Turn off the device you plan to clean and disconnect AC power. Also, remove batteries from items like wireless keyboards. Never clean a product while it is powered on or plugged in.*
- 3. Disconnect any external devices.*
- 4. Never spray any liquids directly onto the product.*
- 5. Moisten a microfiber cloth with a mixture of 70% isopropyl alcohol / 30% water. The cloth should be damp, but not dripping wet. Excess moisture should be removed if the cloth is wet before wiping the product. Using any material other than a microfiber cloth could cause damage to your product.*
- 6. Gently wipe the moistened cloth on the surfaces to be cleaned. Do not allow any moisture to drip into areas like keyboards, display panels, etc. Moisture entering the inside of an electronic product can cause damage to the product. Excessive wiping potentially could lead to damaging some surfaces.*
- 7. When cleaning a display screen, carefully wipe in one direction, moving from the top of the display to the bottom.*
- 8. Surfaces must be completely air-dried before turning the device on after cleaning. No moisture should be visible on the surfaces of the product before it is powered on or plugged in.*
- 9. After cleaning or disinfecting a glass surface, it may be cleaned again using a glass cleaner designed for display surfaces following directions for that specific cleaner. We recommend you avoid glass cleaning products containing ammonia.*
- 10. Discard the disposable gloves used after each cleaning. Clean your hands immediately after gloves are removed and disposed.*

Now that Sister Maryam has read the care instructions, she is empowered with the necessary knowledge to clean the surface of her laptop. With this information, she can gather the essential tools and products to clean the equipment safely.

Like Sister Maryam, you should also seek out the care instructions before cleaning the surfaces in your home. If you do not have the care instructions, don't be timid. Reach out to the company that manufactured the item and ask for care instructions. If you are not able to contact the company, do a little investigative research. Go online and look up similar items made of the same materials to learn how to clean them. Of course, some general cleaning methods are versatile and safe, but it is best to know the manufacturer's recommendations on how to clean the particular soiled item. Once you know how to clean a specific item, then you are armed with the knowledge to clean other similar items.

## Section 6.2 Tools for Cleaning Surfaces

Now that we understand the importance of researching care instructions, we can gather the specific tools to clean the item. You may recall some of these tools from Chapter 4: How to Clean. We will briefly review these tools, but for more in-depth information regarding them, please review Chapter 4: How to Clean. Some essential tools for cleaning surfaces include but are not limited to:

- **Microfiber cleaning cloth**—A microfiber cleaning cloth is used to clean many types of surfaces and is preferred over other fabric types as it is most effective at cleaning contaminants. These cloths also won't scratch or leave streaks behind. It is the go-to tool when dusting and cleaning.
- **Sponge**—Sponges can be useful tools, especially when they are dual-sided, with one of the sides being abrasive. The abrasive side can help to tackle chores that have things that are stuck on and difficult to wipe off. Sponges should be disinfected after every use and replaced every two weeks.
- **White towels**—White towels are good to use on any stain. Since they are white, they will not transfer colors to fabrics. Also, they allow the user to tell when the stain is being lifted as it should show on the towel. Finally, white towels can be bleached and disinfected without being ruined.
- **Squeegee**—A squeegee is a useful tool for showers, windows, and mirrors. It allows for a quick way to keep the shower mold-free, while also getting rid of smudges, marks, and build-ups.
- **Bucket**—A bucket has multiple uses. They can be used to store cleaning products, mopping, or as a container for cleaning solutions. To make cleaning easy and lower the risk of cross-contamination, you can purchase multiple buckets and label them for the different cleaning areas you have designated. Then, you can place the appropriate cleaning products and supplies in the different buckets, allowing for a smooth transition as you move from one room to the next one.
- **Spray bottle**—Use spray bottles to rinse something off with water or as a container for your store-bought or homemade cleaning solutions.
- **Scrub brush**—A scrub brush is great to have on hand when a regular sponge or towel can't handle the task. Use scrub brushes on tubs, tiles, fixtures, floors, mats, and a host of other places within the home. Just make sure, before scrubbing, that the abrasiveness will not ruin the item.
- **Broom, dustpan, and mop**—To clean most hard-surface flooring in the home, use brooms, dustpans, and mops. They can aid in the daily cleaning routine to clean up messes and spills.
- **Vacuum**—A vacuum aids in removing debris from floors, upholstery, drapes, etc.
- **Paper towels**—Paper towels are incredibly multifunctional and handy to have around the home. Because of their design, paper towels can be used to wipe and dry surfaces

and soak up spills.

- **Protective attire**—Depending on the type of cleaning products you are using, you may need designated clothes for cleaning (long-sleeved shirt, long pants, etc.), an apron, goggles, etc. Knowing what to wear when you are cleaning is a matter of safety and protection. Cleaning exposes us to a plethora of contaminants, cleaning chemicals, insects, and pests. To keep your legs and arms protected, consider wearing long pants and a long sleeve shirt. An apron is also great to wear to protect the clothing that you are wearing. Some cleaning tasks require goggles to protect your eyes, especially when using certain chemicals to clean.
- **Rubber gloves**—Rubber gloves are personal protective equipment (PPE) used for cleaning to protect the hands from chemicals, contaminants, cuts, heat, and much more while performing a cleaning task.

### Section 6.3 Products for Cleaning Surfaces

Now that we have researched our care instructions and covered the different tools to clean surfaces, let's take a look at some cleaning products. Depending on what we are cleaning, the selection of a cleaning product is vital.

As mentioned previously, cleaning is the physical removal of dirt, dust, germs, soiled items, impurities, and debris from surfaces. With this in mind, cleaning does not require the use of harsh chemicals. By cleaning, you are merely clearing the surface or area before sanitizing or disinfecting it if needed. So, choose your cleaning product wisely, as it may contain dangerous chemicals that can adversely affect you and your family's health. For more information, please refer to Chapter 10: Hazards of Cleaning Products. The following are recommendations for useful cleaning products in the different areas of your home. You may recall some of these items from Chapter 4: How to Clean. Please refer to Chapter 4 for detailed information. Some essential cleaning products to clean surfaces include but are not limited to:

- **Dish soap or dish detergents**—Dish soap or dish detergent is a powerful, yet gentle, cleaning product that can perform multiple tasks. Use dish soap to clean many surfaces, safely and thoroughly, due to its ability to lift grease and grime effectively off surfaces. Dish soap is a multipurpose, versatile cleaner.
- **Castile soap**—Castile soap is “fine, hard white or mottled soap made with olive oil and sodium hydroxide.” It is a vegetable oil-based soap that is quite versatile. Its multipurpose use includes cleaning our bodies (i.e., body wash, hand soap, shampoo, etc.), and our homes (i.e., all-purpose cleaner, laundry detergent, window cleaner, etc.). It is non-toxic, natural, plant-based, and biodegradable. Never mix castile soap (alkali) with vinegar (acid). While the mixture is not toxic, it will cancel the soap properties and reduce the castile soap to oil. You should dilute castile soap with water before using it. For a mild dilution such as a window cleaner, mix  $\frac{1}{4}$  cup of castile soap with one gallon of water. For an all-purpose cleaning solution, mix one cup of castile soap to one gallon of water. For a stronger solution such as a toilet cleaner, mix  $\frac{1}{4}$  cup of castile soap to  $\frac{3}{4}$  cups of water. Castile soap is a great choice for a safer “go-to” cleaner.

- **Warm soapy water**—Warm soapy water is warm water mixed with dish soap. Warm soapy water is one of the safest cleaners to use in the home.
- **Vinegar and water**—Vinegar is a mild acid that, when mixed with water, makes a good multi-surface and multi-purpose cleaner for the home. It is the acidity of vinegar that makes it a useful “cleaner.” The acid in vinegar works as a solvent to dissolve soap scum. It also loosens mineral deposits, dirt, debris and can remove stains from appliances. Because vinegar is an acid, it can also damage natural materials. So, be sure to read the do’s and don’ts to safely use vinegar as a “cleaner” discussed in Chapter 4: How to Clean.
- **Baking soda**—Baking soda is an excellent non-toxic cleaner to use as a part of your household cleaning regimen. Use baking soda to freshen the air and as a gentle abrasive to scrub and remove tough particles and stains on certain surfaces such as steel, chrome, glass, enamel, and plastic.
- **Commercial cleaning products**—When purchasing cleaners, always read the cleaning product labels to help you determine the right product for your task. Some products require dilution. Read the product label for dilution instructions. The following is a list of commonly used cleaners. Before using any cleaning product, remember always to **read the label and use as directed**.
  - ✓ **All-purpose cleaners**—Formulated for use on many different surfaces around the house. It’s an all-in-one cleaner that keeps you from having a multitude of different bottles of cleaning products.
  - ✓ **Glass cleaners**—Used to clean glass, mirrors, windows, and other surfaces.
  - ✓ **Drain cleaners**—Used to clear blockages and build-up from pipes and drains.
  - ✓ **Oven cleaners**—Formulated to clean dirt, oil, grease, and grime from the oven.
  - ✓ **Scouring powders**—A combination of abrasive powder and detergent used to scour away stuck-on dirt and debris. Some also contain bleaching agents.
  - ✓ **Wood cleaner and polisher**—Used to clean wood such as wooden furniture, desks, tables, picture frames, etc.
  - ✓ **Disinfectants**—Products designed to kill germs. Some disinfectants contain bleach, peroxide, alcohol, etc.
  - ✓ **Floor cleaners**—Designed for use on floors. Different types of floors require different types of floor cleaners. Be sure to read the label to choose the appropriate cleaner for your floor.
  - ✓ **Grout cleaners**—Formulated to remove dirt, mold, and mildew from grout. Some grout cleaners may also contain bleaching and disinfecting agents that kill mold and mildew.
  - ✓ **Carpet cleaners and deodorizers**—Designed to capture dust and debris in carpets while deodorizing. Some varieties also contain cleaning agents to remove stains from the carpet.

Please note that the above information is not an exhaustive list of cleaning products, but Insha’Allah, this information will help you to make a more informed decision when choosing cleaning products to use in your home. Please continue to do your research and use all the information to select the cleaning products that are best for you and your family’s needs.

## Section 6.4 How to Clean Surfaces

Cleaning is an essential part of having a healthy environment in the home, and using the proper tools and products is vital to the effectiveness of cleaning. Now that we have reviewed the care instructions, the tools, and products, what's the next step? The next step is to clean. In previous chapters, we learned pre-cleaning practices. The first order of cleaning is to map out your home cleaning strategy. Next, we learned that we must assess our cleaning tools and products for what we are planning to clean. We also learned that we should wear the proper personal protection equipment, such as cleaning clothes, gloves, dust mask, or wearing any other items needed for that particular cleaning task. After that, we must declutter the space that we will be cleaning. And lastly, depending on what needs cleaning, we may have to dust the area first before cleaning the surface. Now, it's time to learn how to clean!

Cleaning involves the use of water, soap (or cleaning products), and applying friction to remove germs, dirt, debris, and other impurities from surfaces. Friction is applied to the surface through wiping, rubbing, scrubbing, scouring, brushing, etc. to loosen and remove visible debris from the surface and wipe away germs. Germs are reduced from a surface because cleaning will physically remove some of the germs. Different surface types require different cleaning methods. Cleaning a curtain is far different from cleaning a glass table. While the curtain (porous) may be cleaned with soap and water in a washing machine, the glass table (non-porous) may need to be dusted first and then cleaned with a vinegar and water solution. So, as you can see, it is important to know how to clean the different types of surfaces. Here are some manual methods used when cleaning using varying levels of friction.

- **Wiping** means to rub a surface or object lightly, especially with a cloth to remove dust, water, or grime using a back and forth motion.
- **Rubbing** means to apply pressure and friction to something with a circular or backward and forward motion.
- **Scrubbing** means to rub a surface hard with or as if with a brush, soap, and water, or other cleaning product, using short overlapping Z pattern strokes backward and forward, or a tight circular motion.
- **Scouring** means to remove dirt, grease, etc., from or to cleanse or polish by hard rubbing or scrubbing, as with a rough or abrasive material.
- **Washing** means to apply water or some other liquid to something for cleansing.

When using any of the above manual cleaning techniques, make sure to combine it with a cleaning pattern. Cleaning patterns are great to make sure that no area is left uncleaned. If you are all over the place, chances are you will miss a spot. For example, when dusting or cleaning a room, we dust or clean from top to bottom, left to right, and all the way around. This process ensures nothing is skipped. Likewise, we should use a pattern when we are cleaning a surface. Here are two commonly used patterns when cleaning:

- **Pattern 1**—Use a tight, slightly overlapping S pattern, and clean from top to bottom (vertical surfaces) or from back to front (horizontal surfaces) until the dirt is lifted. Starting at the top left, wipe while moving toward the right. When you reach the right, move down slightly and wipe while moving toward the left. Repeat this process from left to right and right to left (S pattern), working your way toward the bottom.
- **Pattern 2**—Use a tight, slightly overlapping W pattern, and clean from top to bottom (vertical surfaces) or from back to front (horizontal surfaces) to clean the surface.



For example, to clean a kitchen counter, you should first remove all the items from the counter and dust the counter, as we learned in the previous chapter. Next, start cleaning at the back of the counter where the counter meets the wall. Wipe from left to right (or vice versa) in a tight, slightly overlapping S pattern until you reach the front of the counter. If the counter is especially soiled or has stuck on dirt, you may need to rub or scrub the counter using the same tight S pattern.

Use this same pattern to clean your glass top stove. Starting at the back, left corner of the stove, scrub in tight circles while moving toward the right. When you reach the right, move down slightly and scrub in circles while moving toward the left. Repeat this process from left to right and right to left (S pattern), working your way toward the front.

Use the W pattern on large surfaces, such as cleaning a wall. In this instance, you would start at the top and use a tight, slightly overlapping W pattern to wipe the wall in a top to bottom motion. Because the wall is a large surface, you may only be able to wipe about four feet of vertical space at a time. So, to clean the entire wall, you would go from left to right (or vice versa), wiping sections of the wall in the W pattern until it is clean. Just remember, whenever you clean a surface, follow a pattern and clean from top to bottom, left to right (and vice versa), and all the way around. After wiping, rubbing, scrubbing, scouring, or washing the surface, then rinse the surface with water and dry if needed. If you cannot rinse a surface, you can spray the surface with water, then wipe it clean or use a damp cloth to wipe the surface.

In addition to manual cleaning techniques, you may also choose to clean using machines such as a washing machine, dishwasher, steam machine, carpet cleaner, and other machinery. Always follow the manufacturer's instructions.

## **Section 6.5 Cleaning Non-porous Surfaces**

In this section, we will focus on cleaning non-porous surfaces. Typically, non-porous surfaces—such as those made from metals, glass, quartz, vinyl, ceramic tile, porcelain tile, varnished wood, treated granite, or plastics—are cleaned using a detergent, a cleaner or soap and water. These surfaces do not absorb moisture, so a solution of soap and water is often a go-to cleaner for non-porous surfaces. The most common non-porous surfaces in the home are things like your stove, refrigerator, coffee table, sinks, bathtub, dining room table, cabinets, bookshelves, countertops, and the list goes on.

For best results, always read and follow the directions on the label of the cleaning product. The label will give specific instructions for types of surfaces for which the cleaner should or should not be used. It will also tell you how much of the product to use and specifically how to use the product. You should also read and follow the use and care guidelines that come with fixtures, stainless steel appliances, and other surfaces that require special care. Take the following steps, when cleaning non-porous surfaces:

### **Before Cleaning**

1. Make sure that you are wearing your cleaning clothes and other personal protective equipment (PPE) such as gloves, apron, goggles, etc. If you need to wear gloves, thoroughly wash your hands before putting on gloves. Read all labels to be sure you are wearing the appropriate protective equipment.
2. Gather the necessary cleaning supplies based on the surface to be cleaned.

3. Make sure you have good ventilation. Where possible, open a window and door and turn on the ventilation fan, such as in the bathroom. Make sure the ventilation system in your home is working properly. A well-ventilated area while cleaning prevents the chemicals from becoming concentrated in the air. Those with asthma and other respiratory illnesses must be particularly careful. It is important to keep in mind that cleaners in aerosol cans, spray bottles, and cleaning machines emit fine vapors of chemicals into the air, which can trigger asthma and other respiratory issues. To help reduce these risks, consider choosing less hazardous products to clean surfaces in the home.

**Note:** Read all hazard warnings and directions on labels of the products that you choose for cleaning. Try to use either an EPA registered product or a product with proven cleaning results. Remember, do not mix cleaning products unless the directions instruct that it is safe. Mixing cleaning products other than what is recommended can cause serious injury or death.

4. Declutter and dust.

### **Operation Clean House**

Next, we will provide some examples of the steps for cleaning non-porous items found in a room. Remember, if you learn how to clean one particular item, you now have the knowledge to clean similar items. Be sure to wear the proper personal protective equipment (PPE) while you clean. So, let's get cleaning!

### **How to Clean a Ceiling Fan**

Ceiling fans help to circulate both cool air and warm air throughout a room. Although you may not look up at it often, a clean ceiling fan can help keep the entire room clean. If the ceiling fan is not cleaned regularly, dirt and dust will accumulate on the blades and spread across the room, leaving dirt and dust on the furniture and other surfaces. The basic structure of each ceiling fan is the same—a motor unit in the middle with blades extending outward from the motor unit. The blades come in a variety of materials, including particleboard and medium density fiberboard (the most common materials), as well as hardwood, metal or other composite materials. Some ceiling fans may have one or more lights in the unit, or it may even have a chandelier. The cleaning supplies for your ceiling fan may vary based on the type of ceiling fan you have. Before cleaning your ceiling fan, look for the UL rating. UL stands for Underwriting Laboratories, which is a testing laboratory that provides certifications and ratings on the safe placement and usage of fans and other products. Outdoor ceiling fans have a UL WET rating that allows them to be hosed off with water. However, outdoor ceiling fans with a UL DAMP rating and indoor ceiling fans with a UL DRY rating should not come in direct contact with water. When cleaning your ceiling fan, a mild cleanser (like soap and water) may work best as alcohol, baby wipes, or alkaline cleaners contain harsh compounds that can stain or destroy the finish on the blades. Be sure to research your particular ceiling fan to determine the method and the materials that are safe to use.

The ceiling fan that we will be cleaning is a standard indoor ceiling fan with five medium density fiberboard blades extending out from the unit.

- Tools—Ladder or step stool, microfiber cloths, two buckets (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—Dish soap or castile soap, warm water

- Cleaning solution—Combine one gallon of warm water and one teaspoon of mild dish soap or ¼ cup of castile soap in a bucket. (You may also opt to use your preferred cleaning solution.)

Turn off the ceiling fan before you begin to clean it. Make sure the blades have come to a complete stop. Set up your ladder or step stool so that you are just beside the ceiling fan in a comfortable reaching position. Combine one gallon of warm water and one teaspoon of mild dish soap or ¼ cup of castile soap in a bucket. Immerse the microfiber cloth in the warm soapy water. Wring out any excess water, so the cloth is damp but not dripping wet. Climb the ladder to reach the ceiling fan. Use the dampened microfiber cloth to wipe around the top of the motor housing unit, rubbing areas of stuck-on dirt or debris. Next, wipe each fan blade with the dampened microfiber cloth. Start at the area of the blade closest to the motor unit and wipe the top, bottom, and sides of the blade. Repeat this process with the other four blades. As you wipe the blades, occasionally immerse the cloth in the cleaning solution to clean it of any dirt and debris, wring it out and continue.

Now we need to rinse the ceiling fan. Remember, never spray liquid directly onto your ceiling fan. Immerse a microfiber cloth in a bucket of warm water. Wring out any excess water, so the cloth is damp but not dripping wet. Rinse the ceiling fan by wiping it with the dampened cloth. Starting at the top, wipe around the motor housing unit. Then wipe the top, bottom, and sides of each blade. Allow surfaces to dry completely before turning on the ceiling fan.

### **How to Clean Vent Covers**

Cleaning your vent covers not only makes them look great, but it also helps to reduce allergens and increases the efficiency of your heating and air conditioning unit. Depending on the system, there are usually two types of vents in the home. The first type is called a supply vent, and it heats or cools the air in the home. Supply vents are usually on outer walls, ceilings, under windows, or the floor. The other type of vent is a return vent, which returns the air to your system so that it can continue regulating the temperature inside the home. The return vents can be large and positioned in a central location or can be small vents throughout the house on the interior walls close to the ceiling or in the ceiling. Both types have vent covers. There are two types of vent covers: *registers* and *grilles*. A register is a vent cover that has a mechanism on it called a damper, which is a latch that can open and close the slats to control the airflow. A grille does not have a damper to control the airflow. Vent covers are usually made of metal, plastic, or wood. Some vent covers are secured in place with screws, some have clips, and some can just be pulled off. Before you begin cleaning your vent covers, consult the manufacturer's instructions for the best cleaning method.

- Tools—Soft brush, microfiber cloths, step stool (for reaching vents in or near the ceiling), screwdriver, small foam paintbrush (optional)
- Cleaners—Dish soap or castile soap, warm water
- Cleaning solution—Combine one gallon of warm water and one teaspoon of mild dish soap or one cup of castile soap in the kitchen sink. (You may also opt to use your preferred cleaning solution.)

The room that we will be cleaning today has a painted metal register vent cover on the ceiling and is secured by screws. To clean your ceiling vents, first, turn off your air conditioning unit. Step on the step stool to reach the vent. With a screwdriver, remove the screws that are

holding the vent cover in place. Set the screws aside. Carefully pull the vent cover away from the ceiling. Fill your sink with warm water and a little dish soap or castile soap. A good ratio is one gallon of water to one teaspoon of dish soap or one gallon of water to one cup of castile soap. If the vent cover is large, you may use a tub instead of a sink. Place the vent cover in the soapy water and let it soak for 20 minutes to help loosen the dirt and grime. Lightly scrub each side of the vent cover with a soft brush or a damp microfiber cloth with a small wet foam paintbrush to clean between the slats. Be careful not to strip the finish on the vent. Once clean, rinse the vent cover with clean water and dry it with a dry microfiber cloth. Make sure the vent cover is completely dry to prevent rusting. Reinstall the vent cover. Repeat these steps with the remaining vent covers.

### **How to Clean Walls**

Cleaning your walls will not only remove dirt and stains. It may also restore color and brighten up the entire space. The materials you need to clean your walls may vary depending on the type of finish they have (i.e., flat paint, eggshell paint, semi-gloss paint, gloss paint, etc.). Before you begin cleaning your walls, test your cleaning solution in an inconspicuous place, such as behind a piece of furniture or a picture frame. Testing the solution will help you determine if it will work for your walls. If the paint still retains its color, and there are no watermarks after drying the test area, the solution should be safe to use. Please research the type of wall finish you have in your home to determine the best cleaning method.

The room that we will be cleaning today has walls with flat paint. Walls with a flat paint finish are difficult to clean because of its porous nature, and it tends to retain dirt. The methods used to clean the flat painted wall may also be used to clean eggshell, semi-gloss, or gloss painted walls.

- Tools—Microfiber cloths, sponge mop, flat head microfiber mop, magic eraser (optional), two buckets (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—Dish soap or castile soap, warm water, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the walls.)
- Cleaning solution—Combine one gallon of warm water and one teaspoon of mild dish soap or ¼ cup of castile soap in a bucket. (You may also opt to use your preferred cleaning solution.)

We will first spot clean any stains on the wall, then wash the entire wall. Cleaning the wall in this order prevents the area that was spot cleaned from looking cleaner than the rest of the walls. Clean any fingerprints, scuffs, or stains on the wall by simply dipping the microfiber cloth in water. Wring it out so that the cloth is damp, but not dripping wet. Then, gently rub the damp microfiber cloth over the stain in a circular motion. Don't rub too hard, or you may leave behind faded or discolored areas.

If the stain remains, try the same method with a little soap and water by combining one gallon of warm water and one teaspoon of mild dish soap or ¼ cup of castile soap in a bucket. If the stain is very difficult to remove, you may use a little baking soda. First, make sure to test it in an inconspicuous area as baking soda is a little abrasive and may remove some paint from the wall. After testing, if the paint still retains its color and there are no watermarks after drying, then it should be safe to spot clean with the baking soda. Dip your microfiber cloth in soapy water. Wring it out so that the cloth is damp, but not dripping wet. Then dip the tip of

the cloth into a little bit of baking soda. Gently rub it in a circular motion until the stain is removed. Rinse the residue by dipping a clean microfiber cloth into a bucket of clean water. Wring it out so that it is damp but not dripping wet. Wipe the area clean. Dry the area with a dry microfiber cloth. You may also opt to spot clean your wall using a slightly damp magic eraser instead of a microfiber cloth.

Now that the wall has been spot cleaned, it is time to clean the entire surface of the wall. Dip your sponge mop into the cleaning solution. Wring it out so that the sponge mop is damp, but not dripping wet. To clean the wall, begin near the ceiling at the corner, and drag the sponge mop slowly, downward to the floor. Move the mop back up the wall, while slightly overlapping the cleaned area. Continue using this tight, slightly overlapping W pattern. Repeat the process, moving across the wall, from top to bottom, until the entire wall is clean.

Rinse the wall by dipping your sponge mop into plain warm water in the second bucket. Wring it out so that the sponge mop is damp, but not dripping wet. Begin near the ceiling at the corner, and drag the sponge mop slowly, downward to the floor. Move back up the wall with the mop using a tight, slightly overlapping W pattern. Repeat the process, moving across the wall, from top to bottom, until the entire wall is rinsed. Dry the wall using a dry flat head microfiber mop going up and down in that same W pattern across the entire span of the wall. Please note, as a worst-case scenario, touch up flat painted walls with the original paint color.

### **How to Clean Doors**

After dusting the doors, gather the necessary tools and products to clean them. These items may vary depending on the type of door that you are cleaning. For example, does the door have a wooden or metal frame? Does it have panels? Are the panels wooden or glass? Is the door stained, varnished, or painted? Before you begin cleaning your door, test your cleaning solution in an inconspicuous area. Make sure that the cleaning solution that you are using is compatible with your door and door finish. For example, if your door has varnish on it, you should avoid extended contact with water because varnish is not waterproof, and prolonged exposure to moisture can damage the finish. Please research the type of doors that you have in your home to determine the best cleaning method. The door that we are cleaning today is a basic semi-gloss painted door.

- Tools—Microfiber cloths or towels, step stool, two buckets (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—Dish soap or castile soap, warm water, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the door.)
- Cleaning solution—Combine one gallon of warm water, one teaspoon of mild dish soap or ¼ cup of castile soap, one teaspoon of baking soda (optional) in a bucket. (You may also opt to use your preferred cleaning solution.)

For this door, we will simply use soap, water, and baking soda. Mix the cleaning solution by combining one gallon of warm water and one teaspoon of dish soap or ¼ cup of castile soap in a bucket. If you want to enhance this solution, you can add one teaspoon of baking soda. Dip your microfiber cloth into the cleaning solution. Wring it out so that the cloth is damp, but not dripping wet. Begin by cleaning the frame of the door. Starting at the top of the door frame, step on the step stool and wipe the frame, including the top edge. Wipe back and forth from one side of the top of the frame to the other to remove dirt. Occasionally immerse the cloth in the cleaning solution to clean it of any dirt and debris, wring it out and continue. Next,

starting from the top, clean one side of the door frame (either the left or right side.) Wipe in a back and forth motion, working your way down to the floor. Make sure to include the edge. Be sure to periodically immerse the cloth in the cleaning solution to clean it of any dirt and debris; wring it out and continue. Repeat this step on the other side of the frame.

Rinse the door frame by dipping a clean microfiber cloth into the bucket of clean water. Wring it out so that it is damp, but not dripping wet. Starting at the top of the door, wipe the door frame, and continue to the sides. Be sure to completely remove the soap solution.

After cleaning the door frame, it's time to clean the door. Open the door. Step on the step stool so you can see the top of the door. Wipe using a back and forth motion moving in one direction across the top of the door. If any dirt remains, dip your cloth into the cleaning solution again, rub it together to remove dirt and debris, wring it out, and wipe across the top of the door again. Next, clean the side edge of the door in the same manner. Beginning at the top, wipe using a back and forth motion all the way down until you reach the bottom of the door. Periodically immerse the cloth in the cleaning solution to clean it of any dirt and debris and continue. Repeat this step on the other side edge of the door.

Now it's time to clean the main surface of the door. Start on the cleanest side of the door. So, if it's a front door, start on the inside, not the outside. Begin at the top of the door. Starting at the top left, wipe back and forth while moving toward the right. When you reach the right, move down slightly and wipe back and forth while moving toward the left. Repeat this process from left to right and right to left (S pattern), working your way toward the bottom. Be sure to rub firmly over areas where there are stains. Pay special attention to any areas of the door that can trap dirt and debris, such as panels. As your cleaning cloth gets dirty and somewhat dry, dip it into the cleaning solution to remove dirt and debris, wring it out and continue. If a stain is very difficult to remove, you may use a little baking soda. After dampening your cloth with the cleaning solution, dip the tip of the cloth into a little bit of baking soda. Gently rub it in the stain in a circular motion until the stain is removed. Next, wipe the door handle. Get off any smudges or fingerprints.

Now it's time to rinse. Dip a clean microfiber cloth into the bucket of clean water. Wring it out so that it is damp, but not dripping wet. Rinse the door frame and door by wiping in the same order it was cleaned and remove all cleaning solution. Repeat the cleaning process on the other side of the door. Since door handles and doorknobs are hotspots for harmful germs, take a quick moment to disinfect them. Refer to the information provided in Chapter 9: How to Disinfect.

### **How to Clean Blinds**

After dusting the blinds, gather the necessary tools and products to clean them. These items may vary depending on the type of blinds that you are cleaning. Different types of blinds include: Persian or slat, Venetian, vertical, Roman, Shoji, mini, etc. Also, blinds are available in a variety of materials, including fabric, metal, plastic, paper, etc. The type and material of the blinds determine the appropriate cleaning method. Be sure to research the type of blinds you have and follow the manufacturer's instructions for the best cleaning method. In this instance, we will clean horizontal mini blinds made of plastic.

- Tools—Step stool, microfiber cloths, scrub brush, two buckets (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—Dish soap or castile soap, warm water

- Cleaning solutions:
  - Solution 1 (mild)—Combine one gallon of warm water and one teaspoon of mild dish soap or ¼ cup of castile soap in a bucket.
  - Solution 2—For a stronger castile solution, combine one cup of castile soap per gallon of warm water in a tub. For example, use four cups of castile soap in a tub with 4 gallons of warm water.
  - You may also opt to use your preferred cleaning solution.

Let's begin by cleaning the blinds while they are hanging. To clean plastic mini blinds, place an old sheet or drop cloth beneath the blinds to catch any water or cleaning solution. Mix the cleaning solution by combining one gallon of warm water and one teaspoon of mild dish soap or ¼ cup of castile soap in a bucket. Lower the blinds and open the slats. Dip the microfiber cloth into the cleaning solution and wring out the excess water leaving the cloth damp, but not dripping wet. Start by cleaning the top of the blinds, including the housing where the blinds are screwed in. Wipe the front of the housing unit from left to right (or vice versa) rubbing firmly over areas with stuck-on substances. Then wipe the underside of the housing unit in the same manner.

Then move to the top slat, starting on the left. Take the cloth and begin just to the left of the thread that connects the blinds. Sandwich the top slat between the cloth, holding firmly and move to the left, wiping toward the outermost left edge. Next, moving just to the right of the thread on the top slat, sandwich the slat between the cloth, holding firmly and move to the right, wiping all the way across the slat until you reach the other thread. Next, move the cloth just to the right of the thread on the top slat and sandwich it again between the cloth and move to the right toward the outermost right edge of the top slat. Now you have cleaned the entire top slat. Repeat this process, cleaning each slat, moving one by one, all the way to the bottom of the blinds. Finally, clean the wand (used to open and close the blinds) and the threads (used to gather, raise and lower the blinds.) Wipe the wand and the threads from top to bottom.

To rinse the blinds, take a clean microfiber cloth and dip it into the bucket with clean, warm water. Wring it out, leaving it damp but not dripping wet. Go over the entire set of blinds with the cloth, retracing each step that you covered in cleaning the blinds, to remove the cleaning solution. If necessary, dry the blinds by retracing each step with a dry microfiber cloth.

Sometimes, blinds must be taken down to clean them properly. For plastic mini blinds, carefully remove the blinds from the window. Fill a bathtub halfway with warm water and add an ounce (about two tablespoons) of mild dish soap. Place the blinds in the bathtub with the soap and warm water solution covering the blinds. Let it soak for an hour. If the blinds are heavily soiled, use a brush and scrub the blinds one slat at a time to remove dirt. If the blinds are lightly soiled, use a microfiber cloth to scrub the blinds one slat at a time. Once clean, rinse the blinds and dry them thoroughly with a towel. Hang them back up.

### **How to Clean Windows**

Dust before cleaning your windows, window frames, and any treatments, including blinds, to ensure that no dust will settle back on your cleaned window. Please refer to Section 5.2 How to Dust for more information on dusting window frames and treatments such as blinds.

Before cleaning your windows, check the weather. You want to clean your windows on a dry day. Also, choose a time during the day when the window is not exposed to direct sunlight. Direct sunlight dries your cleaning solution more quickly on the surface of the window, which can result in streaking and stains. Then gather your tools and cleaning solution. Research and follow the manufacturer's cleaning instructions for the type of windows in your home. The windows that we are cleaning today are single-hung.

- Tools—Microfiber cloths or towels, two buckets (one with your cleaning solution and one with fresh warm water for rinsing), step stool, spray bottle.
- Cleaners—White vinegar, warm water, dish soap or castile soap.
- Cleaning solutions:
  - Solution 1—Mix one gallon of warm water with one teaspoon of dish soap or  $\frac{1}{4}$  cup of castile soap.
  - Solution 2 (glass cleaner)—Use equal parts of warm water and white vinegar.
  - You may also opt to use your preferred cleaning solution.

Starting on the inside of your home, either remove curtains and window treatments or position them so they are not obstructing your access to your window. For example, instead of taking down blinds, you may simply pull vertical blinds all the way to one side or lift horizontal blinds all the way to the top. Now that nothing is in between you and your window, let's begin cleaning it.

Begin by cleaning the window frame. For this guide, we will use cleaning solution 1. Mix the cleaning solution by combining one gallon of warm water and one teaspoon of dish soap or  $\frac{1}{4}$  cup of castile soap in a bucket. Dip your microfiber cloth into the cleaning solution. Wring it out so that the cloth is damp, but not dripping wet. Step on the step stool. Starting at the top, wipe from one end of the top of the frame to the other (including the top edge) using back and forth strokes. Occasionally immerse the cloth in the cleaning solution to clean it of any dirt and debris, wring it out and continue. Next, clean one side of the window frame, starting at the top, and wipe in a back and forth motion all the way down. Make sure to include the edge. Be sure to periodically immerse the cloth in the cleaning solution to clean it of any dirt and debris; wring it out and continue. Repeat this step on the other side of the frame. Then, clean the bottom of the frame, wiping back and forth from one end to the other.

Rinse the window frame by dipping a clean microfiber cloth into the bucket of clean water. Wring it out so that it is damp, but not dripping wet. Starting at the top, wipe the top, sides, and bottom. Be sure to remove all the soap solution.

Next, clean the top windowpane and the railing that surrounds it. Dip your microfiber cloth into your cleaning solution. Wring out your cloth, making sure that it is damp but not dripping wet. Step onto the step stool so you can reach the top of the window. Wipe the top rail of the windowpane from one side to the other using a back and forth motion. Occasionally immerse the cloth in the cleaning solution to clean off any dirt and debris, wring it out and continue. Next, you will clean the glass in the top windowpane. Starting at the top left, wipe back and forth or in a circular motion while moving toward the right. When you reach the right, move down slightly and wipe back and forth or in a circular motion while moving toward the left. Repeat this process from left to right and right to left (in an S pattern), rubbing firmly over areas with stuck-on substances. Continue working your way toward the bottom of the windowpane. Periodically dip your cleaning cloth back into the cleaning solution to clean off any dirt and debris and resume where you left off.



Rinse the windowpane by wiping with a microfiber cloth dampened with clean water. Rinse the windowpane, in the same order cleaned, and remove all cleaning solution. Lastly, use a dry microfiber towel to dry your streak-free windowpane.

Now it's time to clean the bottom windowpane. Slightly open the bottom windowpane. Clean it following the same cleaning method as the top windowpane. Also, pay close attention to the bottom edge of the bottom windowpane that comes in contact with the windowsill, because it can be filthy.

Now, it's time to turn your attention to the outside of the window. Since we are cleaning a single-hung window, we will clean the exterior in 1 of 2 ways depending on the window's design.

- **Option 1: Single-Hung Windows that Tilt Inward for Easy Cleaning**

In some single-hung windows, the bottom windowpane can tilt inward in the room for easy access to the exterior of the bottom windowpane. To clean the exterior of the bottom windowpane, open and tilt inward the bottom windowpane so that it is now laying horizontal. You may choose to lay the tilted windowpane on the back of a chair for additional stability while cleaning. Starting at the top left, wipe back and forth or in a circular motion while moving toward the right. When you reach the right, move down slightly and wipe back and forth or in a circular motion while moving toward the left. Repeat this process from left to right and right to left (in an S pattern), working your way toward the bottom of the windowpane. Since you are cleaning the exterior of the window, it may have more residue on it. Be sure to rub firmly over areas with stuck-on substances. As your cleaning cloth gets dirty, periodically dip your cleaning cloth back into the cleaning solution and rub the cloth together to clean off any dirt and debris. Resume where you left off, continuing to clean your window until you reach the bottom.

Once the windowpane is clean, wipe down the sides of the window that come in contact with the window tracks. Begin at the top of one side and wipe back and forth until you reach the bottom. If any dirt remains, dip your cloth into the cleaning solution again, wash the cloth by rubbing it together to clean off any dirt and debris, and repeat the step. Repeat this process on the other side. Rinse the windowpane by using the microfiber cloth in the bucket of clean water. Wring it out so that it is damp, but not dripping wet. Wipe the windowpane, in the same order cleaned, and remove all cleaning solution. Lastly, use a dry microfiber towel to dry your streak-free windowpane.

If you have double-hung windows, then you will not need to go outside to clean the exterior of your windows – both panes will tilt inward to allow easy access for cleaning the exterior of your windows from the inside of your home.

- **Option 2: Single-Hung Windows That Do Not Tilt Inward**

If the exterior of your window is easily accessible from outside, then use the step stool to clean the window's exterior. Clean it from top to bottom using the same method used for the interior windowpane. If the exterior of your windows is not easily

accessible, then you may want to consider hiring a professional window cleaner who offers residential services to clean your exterior windows periodically.

Now that your windows are squeaky clean, let's learn how to clean the windowsill.

### **How to Clean Windowsills**

Have you ever noticed all the dirt and creepy crawly things that get trapped in your windowsill? Not to mention the mold and mildew that can begin to form due to the condensation. Begin by gathering your cleaning tools and solution that you will be using. Research and follow the manufacturer's instructions for the type windowsills you have.

- Tools—Microfiber cloths or towels, paper towels, mini-vacuum or vacuum with a narrow hose attachment, toothbrush, butter knife, two buckets (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—White vinegar, warm water, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the windowsill.)
- Cleaning solution—Mix equal parts of white distilled vinegar and warm water in a spray bottle. (You may also opt to use your preferred cleaning solution.)

Begin by raising your bottom windowpane. Use either the narrow nozzle attachment on your vacuum, a mini-vacuum, or some paper towels to get up any loose dirt, debris, or dead insects in your windowsill. Generously sprinkle and evenly disperse the baking soda along the bottom track of the window. In a spray bottle, mix equal parts of white distilled vinegar and warm water. Using the solution, spritz the baking soda. You'll know that you've sprayed enough because the baking soda and vinegar will react and begin to fizzle. Let the mixture sit on the windowsill for 5 – 10 minutes.

While you're waiting, spray the vertical tracks of the window with the vinegar and water solution. Starting at the top on one side, scrub the vertical track with an old toothbrush. Using your microfiber cloth, wipe from top to bottom. Dip your microfiber cloth into the bucket of water. Rub the cloth together to remove dirt and debris and continue wiping until the vertical track is clean. It may be necessary to respray the track with the vinegar and water solution. Because window tracks can be very dirty, you should have extra microfiber cloths and a clean bucket of warm water on hand to replace them as needed if they become too dirty. Repeat this process to clean the other vertical track of the window.

Now, it's time to clean the bottom of the windowsill. Using the toothbrush, scrub the bottom of the windowsill working either in small circular or back and forth motions moving from one side of the windowsill to the center, then from the other side of the windowsill to the center. Continue to scrub the windowsill until the dirt and debris have been lifted. After scrubbing, use a damp microfiber cloth to wipe up all dirt and debris. Depending on how dirty the windowsill is, you may have to repeat this step. Remember to keep a clean bucket of warm water and fresh microfiber cloths on hand, just in case they become too dirty and need to be replaced.

Now, let's get into those dirty, grimy corners to remove trapped dirt and debris. Wrap the blade of a butter knife in the damp microfiber cloth and work the butter knife into the corners and edges. As the cloth gets dirty, shift the blade to a clean, unused part of the cloth. If there is still dirt remaining, do another light spray of vinegar and water and repeat the process.

Once all surfaces on the windowsill are clean, dip your cloth into the water and rinse the cloth by rubbing it together. Give the entire windowsill one final wipe.

### **How to Clean Baseboards**

Clean baseboards can bring new energy to a room and give the overall impression of cleanliness. The materials you need to clean your baseboards may vary depending on their finish (i.e., wood, tile, semi-gloss paint, etc.) Before cleaning, test your cleaning solution in an inconspicuous place on the baseboards, such as behind a piece of furniture. After testing, if the paint retains its color and there are no watermarks after drying, then the baking soda should be safe for use. Please research the type of baseboard finish you have to determine the best cleaning method.

The baseboards we will be cleaning today have semi-gloss paint, which is durable and easy to clean. The methods used to clean the semi-gloss painted baseboards may also be used to clean tile baseboards.

- Tools—Microfiber cloths, towel, magic eraser (optional), cotton swabs (optional), two buckets (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—Dish soap or castile soap, warm water, and baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the baseboard.)
- Cleaning solution—Combine one gallon of warm water, one teaspoon of mild dish soap or ¼ cup of castile soap, one teaspoon of baking soda (optional) in a bucket. (You may also opt to use your preferred cleaning solution.)

Fold a towel and place it on the floor so that you may kneel comfortably on it while cleaning the baseboards. Mix the cleaning solution by combining one gallon of warm water and one teaspoon of mild dish soap or ¼ cup of castile soap in a bucket. We will work in sections, beginning at the corner of each section. Dip your microfiber cloth into the cleaning solution. Wring it out so that the cloth is damp, but not dripping wet. Beginning at the corner, wipe in one direction from left to right until you reach the end of that section. Apply moderate pressure and friction as you rub the surface. Rub firmly over areas with stuck-on substances. (Note: To clean the crevices of the corners, dip a cotton swab in the cleaning solution and rub.)

Rinse the baseboards by dipping your microfiber cloth into plain warm water in the second bucket. Wring it out so that the cloth is damp, but not dripping wet. Wipe the baseboard, in the same order cleaned, to remove all cleaning solution. Then, dry the baseboard using a dry microfiber cloth. Repeat these steps on each section of the baseboards until all baseboards have been cleaned, rinsed, and dried. For hard to clean stains, you may opt to dip the tip of your damp microfiber cloth into a little bit of baking soda and rub in a circular motion to remove the stains.

### **How to Clean a Granite Countertop**

Since granite countertops are a common choice in many homes, we will cover how to clean this type of countertop. However, be sure to research and utilize the cleaners and methods that are best suited for the type countertops in your home. Please also note that the following instructions generally apply to sealed granite countertops. Since granite is porous, granite countertops usually come with a protective sealant on the surface. An unsealed granite

countertop absorbs stains, oils, and spills. To test if your granite is sealed, place a few drops of water on the counter and wait a few minutes. If the water beads up, then the granite is sealed. If the water soaks into the counter, then the counter is not sealed, or the sealant has become weakened and needs to be resealed. It is recommended to have this professionally done. Provided that your granite countertops are sealed, they are quite easy to clean and maintain. Also, you should consult the manufacturer's instructions for the best cleaning method.

- Tools—Paper towels, microfiber cloths, two small buckets or bowls (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaner—Dish soap or castile soap, warm water, baking soda and 3% hydrogen peroxide
- Cleaning solutions:
  - Cleaning solution 1—Combine two quarts of warm water with ½ teaspoon of dish soap or ½ cup of castile soap in a small bucket.
  - Cleaning solution 2 (water stains)—Make a paste by mixing two tablespoons baking soda with one teaspoon hydrogen peroxide.
  - Cleaning solution 3 (oil stains)—Make a paste by mixing two tablespoons baking soda with one teaspoon water.
  - You may also opt to use your preferred cleaning solution.

To clean our granite countertops, we will simply use a solution of mild dish detergent and water. First, wipe the counter with a microfiber cloth or paper towel to remove crumbs and other debris. Prepare the cleaning solution by filling a bucket or bowl with 2 quarts of water and add ½ cup of castile soap or ½ teaspoon of dish soap. Immerse the microfiber cloth into the solution, then wring out the cloth, leaving it moist, but not dripping wet. Starting where the wall meets the counter, wipe across the countertops in small circular motions. Wipe from left to right and right to left in a slightly overlapping tight S pattern, until you reach the front of the counter. Apply moderate pressure and friction as you rub the surface. Occasionally immerse the cloth in the cleaning solution to clean it of any dirt and debris, wring it out and continue. Once you have wiped down the entire counter, immerse a clean cloth in plain warm water and use it to rinse the countertops. Go over your countertops with the cloth and warm water, wiping in a tight S pattern, from back to front. Lastly, use a clean, dry microfiber cloth or paper towels to dry the countertop. This will help avoid water stains and prevent streaks.

To remove water stains, make a paste of approximately two tablespoons baking soda with one teaspoon hydrogen peroxide. To remove oil stains, make a paste of approximately two tablespoons baking soda with one teaspoon water. Using a soft cleaning cloth, gently rub the paste in the stain. Rub using small circular motions or short back and forth strokes. Then, rinse and dry with a clean cloth. For tougher stains, apply the paste to the stain; cover it with plastic wrap, and let it sit overnight or up to a couple of days, depending on the toughness of the stain. Then, wipe away the paste with a soft cleaning cloth, rinse with warm water, and dry with a clean cloth.

### **How to Clean a Refrigerator**

Since bacteria are everywhere, they inevitably find their way into our food. Refrigeration slows the growth of harmful bacteria, so it will not cause illness. However, a filthy fridge can be dangerous. There are two main types of bacteria that can lurk in your fridge—spoilage bacteria and pathogenic bacteria. Spoilage bacteria cause food to spoil and produce an undesired smell, taste, and texture of the food. Pathogenic bacteria cause foodborne

illnesses, but they do not produce a change in the smell, taste, or texture of the food. Pathogenic bacteria, such as Salmonella, listeria, and E. coli, can secretly lie in wait for an unsuspecting person to consume a contaminated food item. Then it goes on the attack to adversely affect the health of its host. So, the food may look and smell great, but it's deadly on your plate. To prevent aiding and abetting this enemy's covert operation, we must take the necessary precautions by keeping a clean refrigerator. Please read and follow the manufacturer's cleaning instructions for your refrigerator. The following are some general guidelines for deep cleaning your refrigerator.

- Tools—Small scrub brush or toothbrush, coil cleaning brush, microfiber cloths, dish sponge, a vacuum cleaner with a hose attachment, paper towels, cooler, ice, trash bag, spray bottle, step stool, funnel (to assist with pouring solution into a spray bottle), large clean towel, bucket
- Cleaners—mild, fragrance-free dish soap or castile soap, warm water, vinegar, baking soda
- Cleaning solution—In a spray bottle, mix ¼ teaspoon of fragrance-free dish soap or ¼ cup of castile soap and four cups of warm water (You may also opt to use your preferred cleaning solution.)

### Step 1: Prep Your Refrigerator for Deep Cleaning

Get geared up with your PPE because we are going in. For deep cleaning, first, turn the refrigerator off by unplugging it or turn off the circuit breaker that powers the refrigerator. This is a safety precaution and will save you some money on the electric bill. Next, remove all items from the refrigerator. Perishable foods, such as dairy products, should be placed in a cooler on ice. Place the other items on the counter. Toss any old leftovers, spoiled foods, and items that are beyond their expiration date. Immediately take out the trash with the spoiled food.

Next, take out the removable drawers and shelves. Set them aside. This makes it easier to clean them and get in the nooks and crannies of the refrigerator. Allow the removable shelves and drawers to become room temperature before cleaning. This will help prevent cracks, which may occur from a sudden temperature change when washing them in warm water. In the meantime, let's get started with the interior of the refrigerator. Be sure to have multiple cleaning cloths on hand to change them as needed.

### Step 2: Clean the Interior of the Refrigerator

Since the interior of the refrigerator houses the food that we eat to sustain our health, it is important to use a non-toxic cleaner. Certain chemicals in cleaners can contaminate foods and even cause them to become flavored by the chemicals and fragrances contained in the cleaners. Mix ¼ cup of castile soap and four cups of warm water in a spray bottle. Place a towel on the floor in front of the refrigerator to catch any spills and leakage that may occur. Next, wipe out any crumbs and other debris in the refrigerator with a paper towel. Wipe from top to bottom. Be sure to wipe inside any non-removable compartments and shelving. Once all the debris is removed, generously spray all interior surfaces with the cleaner (i.e., the top, rear and side walls, non-removable shelves and drawers, the inside of the door and bottom). Although the refrigerator is not on, avoid spraying the light fixture or inside any electrical components.

Starting at the very top of the interior of the fridge, begin wiping in the rear left corner using a small circular or back and forth motion. Wipe from left to right and right to left, in a slightly

overlapping S pattern, moving from back to front. When crossing over the housing unit that contains the refrigerator controls and the interior light, carefully clean the housing unit and dials. Next, clean the back wall of the interior. Starting in the upper left corner, wipe using a small circular or back and forth motion. Wipe from left to right and right to left, in a slightly overlapping S pattern, moving from top to bottom. Next, clean the interior sides of the fridge in the same manner the back wall was cleaned.

Next, clean the bottom of the refrigerator. First, wipe up any puddles of cleaning solution that may have formed. Then, start wiping in the bottom rear left corner. Wipe in small circular or back and forth motions while moving from left to right and right to left in a tight, slightly overlapping S pattern, working from back to front. For stubborn stains and stuck-on dirt, use a small scrub brush or toothbrush dipped in baking soda and warm water, or apply a paste of baking soda and water and let it sit on the trouble spot for about 10 minutes. Then scrub and wipe it away.

Now, clean the interior of the door. Begin by wiping the outer edges of the door and door seal. Begin on the top edge of the door, nearest the door hinge, and wipe in one direction, from back to front. Then, wipe across the top of the door seal. Because the door seal can be quite nasty, replace your microfiber cloth if it has become soiled. If needed, use a toothbrush to gently scrub away caked-on debris. Next, wipe down the side edges of the door and door seal in the same manner. Next, clean the interior of the door, in the same manner, we cleaned the interior of the fridge. Starting at the top of the door's interior, wipe using a small circular or back and forth motion, moving from left to right and right to left in a tight overlapping S pattern, working down to the bottom. Clean any non-removable compartments as you come across them. Make sure to clean the edges of all shelves, the insides of all compartments, and inside any cracks or crevices. Lastly, clean the bottom edge of the door and bottom door seal in the same manner that the top and side edges were cleaned.

Now, it's time to rinse the inside of the refrigerator and the interior door. Rinse by dipping a clean microfiber cloth into a bucket of clean, warm water. Wring out excess water so that it is damp. Wipe to rinse the area clean. After rinsing, sanitize the refrigerator using one of the methods provided in Chapter 8: How to Sanitize.

**Tip:** If you have a frost-free freezer, you may follow the same steps to clean your freezer. If you do not have a frost-free freezer, follow the manufacturer's instructions to first defrost your freezer before cleaning. If the freezer compartment sits above the refrigerated component, then it should be cleaned first. Be sure to have a cooler with ice on hand to place frozen items while cleaning the refrigerator.

### Step 3: Clean the Removeable Parts

By now, the removable parts of the refrigerator should be room temperature and ready to be cleaned. Using a dish sponge, simply wash them in mild, fragrance-free dish soap or castile soap and warm water in the sink, just as you would your dishes. To remove any stubborn dirt or stuck on stains, dip the sponge in baking soda and rub them away. Rinse the removable parts thoroughly under running water. After rinsing, sanitize the removable parts using one of the methods provided in Chapter 8: How to Sanitize. Allow them to dry completely; then, place them back in the refrigerator.

#### Step 4: Clean the Exterior of the Refrigerator

Now, that the interior and removable parts of the refrigerator are clean, let's clean the exterior. The refrigerator door can be the site of fingerprints, sticky goo, and crusted goop that provide good food for germs to thrive. Mix one teaspoon of fragrance-free dish soap or one cup of castile soap with one gallon of warm water in a small bucket. Using a step stool, start at the very top, and wipe the top of the refrigerator. Immerse a clean microfiber cloth into the warm soapy water and wring out any excess water. The cloth should be damp but not dripping wet. Starting at the upper left corner of the fridge, wipe in small circular motions moving from left to right and right to left, working your way toward the front of the refrigerator in a slightly overlapping tight S pattern. Make sure to include the edges.

Next, we will clean the visible sides of the refrigerator. If your refrigerator is permanently recessed in a wall or cabinet, clean the exterior sides that are accessible, if any. Starting in the top left corner, wipe in small circular motions, moving from left to right and right to left, working from top to bottom in a slightly overlapping tight S pattern. Occasionally immerse the cloth in the cleaning solution to clean it of any dirt and debris, wring it out, and continue. Repeat this process on the other side if it is accessible. Now, we will clean the exterior of the doors. Starting in the top left corner, wipe in small circular motions, moving from left to right and right to left (S pattern) until you reach the bottom of the door. Next, clean the door handle. Take extra care in this hotspot for sticky fingers. Be sure to wipe all sides of the handle. If your refrigerator has more than one door, clean the top door first and work your way down. If it has doors that are side by side, clean the left door and then the right.

Once the exterior is clean, rinse by wiping the exterior with a microfiber cloth dampened with clean water. Wipe the area, using the same method to clean it, to remove all the soap solution. Then, wipe it with a dry microfiber towel to dry the surface. After cleaning, if you have a stainless-steel refrigerator, you may opt to enhance the shine and look of the exterior by also applying a stainless-steel cleaner of your choice or even olive oil. To disinfect the refrigerator door handle, refer to Chapter 9: How to Disinfect.

#### Step 5: Clean the Condenser Coils, Drip Pan and Underneath the Refrigerator

Refer to the manufacturer's instructions to locate the condenser coils for your refrigerator. Dirt, lint, and other debris accumulate in your condenser coils and can inhibit the efficiency of your refrigerator. Use a coil cleaning brush or the soft brush attachment on your vacuum cleaner to carefully dust the condenser coils.

Next, follow the manufacturer's instructions to locate and remove the drip pan from your refrigerator. Pour any water present in the drip pan down the sink. Using the soap and water solution, scrub the pan with a microfiber cloth to remove any buildup. Rinse the drip pan in the sink under running water to remove the cleaning solution. Use a dry towel to wipe it dry, or you may allow it to air dry. Once the drip pan is dry, reinstall it according to the manufacturer's instructions. NOTE: In some refrigerators, the drip pan is not removable and requires cleaning while in the refrigerator. Please be sure to follow the manufacturer's cleaning instructions. Lastly, if possible, roll the refrigerator away from the wall and sweep or vacuum and mop the floor underneath. Then, push the refrigerator back in place. If you are not able to move the refrigerator, then use the hose attachment to vacuum under and around the refrigerator.

## Step 6: The Grand Finale

After deep cleaning your refrigerator, sanitizing it is a must to give harmful bacteria a final death blow. In Chapter 8, we will go through the steps to sanitize the refrigerator. After cleaning and sanitizing, plug the refrigerator back in. Check that the refrigerator is set to the proper temperature (40°F for the refrigerator and 0°F for the freezer as recommended by the FDA) and return your food items. Wipe down food containers with soap and water before placing them back in the fridge. Wash the counters where the food and refrigerator parts were placed. Now, enjoy your fresh and fabulous fridge! Perform the steps to deep clean and sanitize your refrigerator at least once every three months. In the event food spoilage occurs due to an extended power outage or a food recall, the refrigerator must be immediately deep cleaned and sanitized. To maintain cleanliness in between deep cleanings, be sure to immediately clean up any spills. Put an open box of baking soda in the refrigerator to help maintain a fresh fridge daily. Be sure to label it with the date it was placed in the fridge and switch it out every three months.

## How to Clean a Cooktop

Of all the appliances in the kitchen, the cooktop typically gets the most use and is worked the hardest. With today's technology, a cooktop no longer needs to be attached to an oven. It can be set in the middle of a kitchen island and have modular features like grills and woks.

Cooktops can be either electric, gas, or induction.

- Electric cooktops have electrical coils that heat the surface of the cooktop and come in two different varieties—coil or smooth top. The coil type has coils that sit on the cooktop in a recessed cavity. When cooking, your pot or pan rests on the coils. In contrast, the smooth top has radiant elements, similar to coils, installed beneath a smooth, easy to clean glass surface. When cooking, your pot or pan rests on the glass cooking surface.
- Gas cooktops use natural gas or liquid propane to produce a flame that comes out of a burner. Each gas burner typically has a grate to cover the burner, and your pot or pan rests on the grate.
- Induction cooktops have electromagnetic coils beneath the ceramic glass surface. The electromagnetic technology creates heat when cookware made from magnetic metal encounters the induction burner.

While all three cooktops enable you to cook a wonderful, healthy meal, how to clean them will vary. Refer to the manufacturer's instructions to identify which type of cooktop you have and how to clean it properly.

## Cleaning an Electric Smooth, Glass-Ceramic Cooktop

Cleaning a glass-ceramic cooktop requires particular care. Please read and follow the manufacturer's instructions for how it should be cleaned. In this instance, we will be cleaning a generic, electric smooth, glass-ceramic cooktop.

- Tools—Microfiber cloths, a large towel, spray bottles, two large bowls (one with your cleaning solution and one with clean water used for rinsing), ceramic cooktop scraper (optional), sponge
- Cleaners—Warm water, white vinegar, dish soap or castile soap, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the cooktop.)



- Cleaning solution—Combine one gallon of warm water with one teaspoon of dish soap or 1 cup of castile soap in a large bowl. (You may also opt to use your preferred cleaning solution.)

You should always clean your cooktop after each use to prevent the buildup of residue. Before cleaning your cooktop, turn off all controls and be sure the cooktop has completely cooled. Mix the cleaning solution by combining one gallon of warm water and one teaspoon of dish soap or one cup of castile soap in a large bowl. Add warm water to the other bowl for rinsing. Next, use a damp microfiber cloth or paper towel to wipe up food spills, removing all surface debris. Next, dip a microfiber cloth into the cleaning solution. Wring out excess water, so the cloth is not dripping wet. Begin wiping at the rear left corner of the cooktop. Using small circular motions, wipe from left to right and right to left, in a slightly overlapping S pattern, until you reach the front of the cooktop. Apply moderate pressure and friction as you rub the surface. Next, rinse the cooktop by dipping a clean microfiber cloth into the bowl with plain warm water. Wring out excess water, so the cloth is not dripping wet. Wipe the cooktop starting at the rear left corner, wiping from left to right and right to left in a slightly overlapping S pattern until you reach the front of the cooktop. Occasionally immerse the cloth in the clean, warm water, wring it out, and continue until all the cleaning solution is removed and the cooktop is clean. Wipe the cooktop with a dry microfiber cloth to buff and dry the cooktop.

To remove tough stains from the glass-ceramic cooktop, you may opt to use white vinegar and baking soda with the dish soap and warm water solution. After wiping up any food spills or debris with a paper towel, spray the glass-ceramic cooktop with white vinegar. Then, generously sprinkle baking soda over the entire cooktop. Allow it to sit for at least 15 minutes. Then, immerse a soft sponge in the dish soap (not castile soap) and warm water solution, and scrub the surface. Then rinse and dry it as previously described.

For more challenging, baked-on stains, apply the vinegar and baking soda as instructed above. Then, dip a large towel into the warm soapy water. Wring the towel out so that it is damp but not dripping wet. Completely cover the cooktop with the dampened towel. Leave the towel on the cooktop for 15 minutes to loosen any stubborn baked-on stains. Depending on the severity of the stains, you may opt to leave the towel on the cooktop overnight. When time is up, use the towel to wipe the surface. Then, immerse a soft sponge in the dish soap and warm water solution and scrub the surface. Rinse and dry it as previously described. Another useful tool for removing some baked-on stains is a ceramic cooktop scraper. Gently use the scraper at a 45° angle to scrape the residue from the glass/ceramic surface. Do not use a lot of pressure to avoid scratching the surface.

Keep the following things in mind when using and cleaning your electric smooth, glass-ceramic cooktop:

- To avoid damaging your cooktop, never use steel wool or abrasive powder cleaners.
- Chlorine bleach, rust remover, or ammonia can discolor the surface.
- If spills occur, clean them immediately and do not allow them to remain on the cooktop for an extended time.
- Only use clean dishcloths or sponges. The film that remains from dirty dishcloths or sponges may cause stains on the cooktop surface after it is heated.
- Generally, cleaning products for this type of stovetop advertise the prevention of stains on the surface. You may choose to use those cleaning products.

Note: The same cleaning methods for electric glass-ceramic cooktops also work for induction cooktops since they have ceramic glass surfaces. Please read and follow the manufacturer's instructions for how your cooktop should be cleaned.

### Cleaning a Gas Cooktop

Before cleaning your gas cooktop, read the manufacturer's cleaning instructions for the particular brand that you have, and choose the best method. In this instance, we will be cleaning a generic gas cooktop with burners and grates.

- Tools—Microfiber cloths, a dual-sided sponge (with an abrasive side), a sink full of warm soapy water, paperclip, dry toothbrush, two large bowls
- Cleaners—Warm water, dish detergent, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the cooktop.)
- Cleaning solution—Combine one gallon of warm water with one teaspoon of dish soap or one cup of castile soap in a large bowl. (You may also opt to use your preferred cleaning solution.)

Before cleaning your cooktop, turn off all the controls and be sure that the cooktop is completely cooled. Remove the grates and burner caps, place them in the sink full of warm soapy water, and let them soak for 15-20 minutes. While the grates and burner caps are soaking, clean the rest of the cooktop. First, use a clean microfiber cloth or paper towel and wipe up any food spills or crumbs from the cooktop surface. Visually check the fuel ports on all the burners for burned bits of food that could be creating a burning hazard. Use a dry toothbrush to gently brush any debris out of the port.

Next, dip the sponge into the cleaning solution and wring out the excess water. Starting from the upper left corner, use the abrasive side of the sponge and scrub using circular motions to remove any stubborn stains. As you scrub the cooktop, occasionally immerse the sponge in the cleaner to clean off any debris and continue to scrub the surface until it is clean. For hard to remove baked-on stains, dip the abrasive side of the sponge in baking soda and scrub until the stain lifts. Now, rinse the cooktop by dipping a clean microfiber cloth into the bowl with plain warm water, wring out the excess water, and wipe the cooktop from back to front. Then use a clean microfiber towel to dry the cooktop.

Next, use the abrasive side of the sponge to scrub the grates and burner caps. For hard to remove baked-on stains, dip the abrasive side of the sponge in baking soda and scrub until the stain lifts. Rinse the grates and caps with plain water and dry them using a clean microfiber cloth. Place the grates and caps back on the cooktop.

Keep the following things in mind when using and cleaning your gas cooktop:

- If spills occur, clean them immediately and do not allow them to remain on the cooktop for an extended time.
- Do not use steel wool pads and abrasive cleaners, which can damage your cooktop.
- Do not uninstall the cooktop to clean its surface. The gas lines leading to the burner manifolds can be damaged, resulting in a fire or system failure.
- Be careful not to use too much water when cleaning the stovetop, as it can saturate the fuel ports. If the fuel ports get too wet, they will temporarily have trouble igniting.

- Do not spray cleaner onto the burner. It houses the ignition system, which must be kept free of moisture. Otherwise, it will damage the ignition system or cause harm to the person trying to turn on the stove due to a flare-up of fire.
- Do not use the dishwasher to clean any of the oven or cooktop components.
- Do not clean any cooktop components (like the grates) in a self-cleaning oven.
- Do not use metal objects to scrape the surface of the stovetop because it will leave scratches.

Note: If your cooktop has any stainless-steel parts, clean them using a microfiber cloth dampened in a soap and water solution. Wipe the stainless-steel housing rubbing in the direction of the grain of the stainless steel. Rinse the stainless-steel housing by wiping it with a microfiber cloth dampened with water. Lastly, wipe dry with a clean microfiber cloth.

### **How to Clean the Kitchen Sink**

Kitchen sinks are riddled with germs. In fact, a kitchen sink could have more germs than a toilet seat. Food particles from dishes can promote conditions that breed harmful bacteria such as salmonella and *E. coli*. These bacteria can then spread to your hands or may even contaminate your food. So, kitchen sinks must be cleaned and then sanitized or disinfected. Kitchen sinks come in a variety of sizes and styles. They can be top-mounted or mounted under the counter with a single basin or a double basin. They can be stainless steel, enamel-coated cast iron, or other materials. The sink we will be cleaning today is a top-mounted, single basin, stainless steel sink. Consult with your sink manufacturer to learn the best way to clean your specific sink.

- Tools— Dual-sided sponge (with an abrasive side), brush for cleaning, microfiber cloth
- Cleaners—Dish soap or castile soap, warm water, baking soda
- Cleaning solution—In a spray bottle, combine two cups of warm water with 1/8 teaspoon of dish soap or two tablespoons of castile soap. (You may also opt to use your preferred cleaning solution.)

Remove any food debris by rinsing it into the sink strainer, then discard the food waste. Combine two cups of warm water with 1/8 teaspoon of dish soap or two tablespoons of castile soap in a spray bottle. Spray the entire kitchen sink with the solution, including the faucet, spray nozzle, handles, and sink strainer. Next, liberally sprinkle baking soda along the sides and the bottom of the sink basin, including the drain. This will help to eliminate the drain's foul odor and freshen it. Using the abrasive side of the dual-sided sponge, scrub the sink from top to bottom, in a back and forth or circular motion. Scrub the faucet, spray nozzle, and handles of the sink, moving all the way around each part and use a toothbrush to clean the crevices. Next, scrub around the sides of the sink basin. Then, scrub the bottom of the sink using a back and forth or circular motion. Lastly, clean the drain and sink strainer. Scrub all their crevices using a toothbrush.

Now it's time to rinse the sink. First, use a clean microfiber cloth dampened water to wipe the cleaning solution from the exterior parts of the sink (i.e., the faucet, spray nozzle, handles, etc.). Then use warm water to rinse the baking soda and cleaning solution from the sink basin. Lastly, use a dry microfiber cloth to dry it.

Because the sink can contain a plethora of germs, it must be sanitized or disinfected after cleaning. Sanitize your sink if you plan to use it to prepare food. If not, then disinfect it. To

learn how to sanitize and disinfect, refer to Chapter 8: How to Sanitize and Chapter 9: How to Disinfect.

### **How to Clean the Bathtub and Shower**

The bathroom is among the most frequently used places in the home. Naturally, it is also the place exposed to the most bacteria, fungi, and viruses. Consequently, we must be extremely vigilant about keeping the bathroom clean. The bathtub and shower are magnets for soap scum, mildew, grime, hard water stains, and rust. Keeping this area clean helps you to stay clean. Before cleaning your bathtub and shower, please read and follow the manufacturer's instructions on how to clean them. For this section, we will be cleaning a standard plastic bathtub made of fiberglass or acrylic, a shower with a chrome showerhead with a vinyl shower curtain, and ceramic tile walls.

- Tools—Spray bottle, scrub brush, a dual-sided sponge (with an abrasive side), microfiber cloths, toothbrush
- Cleaners—Warm water, dish soap or castile soap, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the bathtub or shower.)
- Cleaning solution—In a spray bottle, mix  $\frac{1}{4}$  cup of castile soap or  $\frac{1}{4}$  teaspoon of dish soap and one quart of water.

Begin by removing any shower caddies or bottles that may be on the ledges around the shower area. Adjust the shower curtain and liner so that all the surfaces can be accessed. Mix one quart of warm water and  $\frac{1}{4}$  teaspoon of dish soap or  $\frac{1}{4}$  cup of castile soap in a spray bottle. Begin by spraying the showerhead. Then, starting on the top, left side of the shower, thoroughly spray the tiles from left to right and right to left using a slightly overlapping S pattern until you reach the bottom. Move clockwise, covering all shower surfaces with the cleaning solution. Then, spray the tub in the same manner, moving from one end to the other end. Next, generously sprinkle baking soda throughout the shower and bathtub. Allow the cleaning solution and baking soda to sit for about 5 to 10 minutes. Then, use the soft side of the sponge to wipe the showerhead using a circular motion. Next, use the abrasive side of the dual-sided sponge to scrub the shower. Starting from the top, left side of the shower, thoroughly scrub the tiles using a circular or back and forth motion, moving from left to right and right to left. Use a slightly overlapping S pattern until you reach the bottom. Move clockwise, scrubbing all the shower surfaces in the same manner. Then, using the soft side of the sponge, scrub the tub from one end to the other end. Lastly, clean the shower curtain. Dampen a microfiber cloth with the warm water and the dish detergent solution, scrub.

Now rinse the shower, tub, and the shower curtain. Use the stream setting on a spray bottle filled with clean, warm water, a bucket with clean water or a showerhead with an extendable hose to rinse the shower, tub, and curtain of all cleaning solution. Finally, use microfiber cloths to dry.

If you find that areas of the bathtub and shower need a little extra attention, you can do the following:

- To get rid of stubborn mold and mildew stains in the grout, put two cups baking soda and one cup hydrogen peroxide in a bowl and mix thoroughly. Use a toothbrush to apply the baking soda and hydrogen peroxide paste to the grout and scrub. Then rinse

with warm water. Be sure you rinse thoroughly to rid your walls of grit that could be left behind by the cleaning solution.

- To clean stubborn dirt and stains from plastic shower curtains and liners, remove the rings and place the curtain and liner in the washing machine along with a couple of towels. The towels will provide extra scrubbing power for deeper cleaning. Add the regular amount of detergent plus  $\frac{1}{2}$  to 1 cup of baking soda. Wash in warm or hot water, at the highest level that the manufacturer's instructions allow. Once the wash cycle is complete, you can hang up the liner and curtain to air dry. If the shower curtain is cloth, you can throw it in the dryer, at the lowest setting, according to the manufacturer's instructions.
- If your showerhead has stubborn mineral deposits that won't come off with a little extra elbow grease, a toothbrush, and baking soda, then take a plastic bag (large enough to fit over your showerhead) and cover the showerhead. Then fill the bag with enough vinegar to cover the surface. Next, take a rubber band and secure the bag over the showerhead and allow it to sit in the vinegar for at least 12 hours. Once the time is up, take the bag off the showerhead and allow the vinegar to run down the drain. Run hot water through the showerhead and scrub.

After cleaning the bathtub and shower, immediately disinfect them to ensure they are free of harmful germs. Refer to the instructions in Chapter 9: How to Disinfect.

### **How to Clean a Bathroom Sink**

The bathroom sink can see quite a bit of traffic due to constant handwashing, teeth brushing, and face washing, which causes the sink to accumulate grime and dirt. Sinks can be free-standing or mounted in or above a vanity cabinet or counter. Sinks are made from vitreous china (enamel-coated ceramics), stone, enameled steel, enameled cast iron, glass, acrylic, and many more materials. Refer to the manufacturer's instructions to identify which type of sink you have and how to clean it properly. In this instance, the bathroom sink we will be cleaning is made of vitreous china and mounted in a vanity with a synthetic countertop and wooden base.

- Tools—Dual-sided sponge (with an abrasive side), toothbrush, microfiber cloth.
- Cleaners—Dish soap or castile soap, warm water, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use on your sink.)
- Cleaning solution—In a spray bottle, combine two cups of warm water with  $\frac{1}{8}$  teaspoon of dish soap or two tablespoons of castile soap. (You may also opt to use your preferred cleaning solution.)

Fill your sink with hot water and let it sit for 5 minutes to help loosen up any dirt, soap scum, toothpaste, etc. Drain the sink of all water. Combine two cups of warm water to  $\frac{1}{8}$  teaspoon of dish soap or two tablespoons of castile soap in a spray bottle. Spray the entire bathroom sink, including the faucet, handles, and lift rod. Next, liberally sprinkle baking soda along the sides and the bottom of the sink basin, including the drain. The baking soda will help to eliminate the drain's foul odor and freshen it. Using the abrasive side of the dual-sided sponge, begin scrubbing the sink from top to bottom. Using a back and forth motion, scrub the faucet, handles, and lift rod of the sink. Make sure to scrub around each part and use a toothbrush to clean the crevices. Next, scrub the sides of the sink basin. Using a circular or back and forth motion, scrub from top to bottom and around the sink. Then, scrub the bottom

of the sink using a back and forth or circular motion. Lastly, clean the drain. When cleaning the drain, use the toothbrush to scrub it and all its crevices.

Now it is time to rinse the sink. First, rinse the parts outside of the sink basin by using a dampened microfiber cloth. Then rinse the sink basin. Use warm water to rinse the sink so that it is clear of baking soda and cleaning solution. Lastly, use a dry microfiber cloth to dry it. To help maintain the cleanliness of your sink, rinse it after each use.

Because the sink can contain a plethora of germs, disinfect the sink after cleaning. To learn how to disinfect, refer to Chapter 9: How to Disinfect.

### **How To Clean a Toilet**

The toilet is where bodily waste is deposited; dirty mop water is dumped, and all manner of nastiness is flushed away. If it is not cleaned properly and often, the toilet becomes a breeding ground and cesspool for germs. Our toilets should be cleaned daily and disinfected at least once per week to keep germs and viruses at bay. We will discuss disinfecting more in Chapter 9. In the meantime, the following information provides general information for cleaning the toilet. Be sure to check the manufacturer's instructions for cleaning your toilet. With the right tools and methods, keeping a clean toilet is a cinch.

- Tools—Toilet brush (one for each bathroom), microfiber cloths, paper towels, rubber gloves, toothbrush (used for the toilet only), pumice stone (for toilet only), two spray bottles
- Cleaners—Baking soda, dish soap or castile soap, water
- Cleaning solution—In a spray bottle, combine  $\frac{1}{4}$  teaspoon of dish soap or two tablespoons of castile soap with 2 cups of hot water. (You may also opt to use your preferred cleaning solution.)

Before you begin, make sure that you have proper ventilation. Leave the bathroom door open; open the bathroom window, and turn on the exhaust fan if available. To clean our toilet, we will use three simple ingredients—baking soda, dish soap, or castile soap and water. Remember, after cleaning, disinfect the toilet to ensure that we capture all the harmful germs that lurk there. After reading this section, be sure to read how to disinfect your toilet in Chapter 9.

#### **Step 1: Clean the Interior of the Toilet Bowl**

Prepare the cleaning solution by combining  $\frac{1}{4}$  teaspoon of dish soap or two tablespoons of castile soap with two cups of hot water in a spray bottle. Next, flush the toilet to remove any contents if necessary. Generously spray the interior of the toilet bowl with the cleaning solution, including under the rim. Add one heaping tablespoon of the baking soda in the toilet bowl water and sprinkle around the interior sides of the toilet bowl. Dip the toilet brush in the water and use it to spread the mixture around. Next, scrub vigorously under the rim, moving all the way around. Then, continue scrubbing around the toilet bowl while working your way down to the bottom. If your toilet is particularly dirty, you may repeat these steps. Next, close the lid and let the solution sit in the toilet bowl for 5-15 minutes while we move on to the exterior of the toilet.

#### **Step 2: Clean the Exterior of the Toilet**

Generously spray all the exterior surfaces of the toilet, then wipe working from top to bottom. First, clean the top of the toilet tank. Starting in the upper left corner, wipe using quick back

and forth strokes, moving from left to right and right to left across the top of the tank in a tight S pattern, working from back to front. Then, wipe along the edge of the top of the tank. Now, wipe the tank. Starting at the top of the left or right side, wipe from top to bottom, working around the tank to the other side using a tight W pattern. Also, clean the handle. Then wipe the back of the tank if accessible, and the bottom of the tank.

Next, we will clean the toilet bowl lid. With the lid closed, start in the rear left corner of the top of the lid and wipe while moving from left to right and right to left, working from back to the front using a tight S pattern. Make sure to wipe along the edges of the lid. Then, open the lid and repeat the process to clean the underside of the lid, starting at the top and work your way down.

Next, clean the top of the toilet seat. Wipe in a circular motion or quick back and forth strokes while moving either clockwise or counterclockwise around the entire circumference of the toilet seat. Raise the toilet seat and repeat the process to clean the underside of the toilet seat. Be sure to wipe the edges. Next, wipe around the top edge of the toilet bowl. Lower the toilet seat and close the lid. Clean the area behind the lid (between the lid and the tank). Be sure to also clean in the nooks and crannies of the lid hinges. You may use a toothbrush to scrub stubborn dirt in the hinges. Be sure to store it with your bathroom cleaning supplies, so no one mistakenly uses it to brush their teeth.

Now, wipe around the circumference of the exterior of the toilet bowl. Start at the top, working your way around the bowl, wiping from top to bottom in a tight W pattern, while working your way down to the base of the toilet. Then, clean around the circumference of the base of the toilet, continuing to work your way down to the floor. First, wipe around the front, then the sides and the back. Be sure to clean inside the grooves on the toilet bowl base as you work your way down. Once you reach the bottom, clean the bolt covers that connect the toilet to the floor.

Last, we will rinse the exterior of the toilet to ensure that no cleaning solution remains. Fill a spray bottle with warm water. Spray the entire exterior of the toilet. Using paper towels, wipe down the toilet, working from top to bottom in the same order as when cleaning the toilet. Once finished, use paper towels to wipe up any solution that may have dripped on the floor while cleaning. Now that your toilet is clean, flush the solution in the toilet bowl. NOTE: If stubborn stains remain in your toilet after cleaning, you may gently scrub them using a pumice stone. Make sure that the stone is labeled and stored with your restroom cleaning supplies to ensure that none of your family uses it for their personal hygiene.

Now that the toilet is clean, follow the steps provided in Chapter 9 to disinfect your toilet.

### **How to Clean a Glass Coffee Table**

Gather the necessary tools and cleaning products. Remove all objects from the table. Use the microfiber cloth to give the table a good dusting, as we learned in Chapter 5. Keep in mind that most glass coffee tables are made from more than one type of material (i.e., glass top with wooden or metal legs, etc.). Be sure to research the type of coffee table that you have to determine the type of cleaning solution that is best. The table that we are cleaning is a glass top coffee table with four metal legs.

- Tools—Microfiber cloths, two small buckets or bowls (one with your cleaning solution and one with clean, warm water used for rinsing), a spray bottle

- Cleaners—Mild dish soap or castile soap, warm water, vinegar
- Cleaning solutions:
  - Cleaning solution 1—Mix two quarts of warm water with ½ teaspoon of dish soap or two tablespoons of castile soap in a small bucket.
  - Cleaning solution 2 (glass cleaner)—Mix one-part vinegar and two parts water in a spray bottle.
  - You may also opt to use your preferred cleaning solution.

Mix ½ teaspoon of mild dish soap or two tablespoons of castile soap with approximately two quarts of warm water in a small bucket. Immerse a clean microfiber cloth into the warm soapy water and wring out any excess water. The cloth should be damp, but it should not be dripping wet. Wipe the tabletop from back to front, using a tight S pattern, rubbing firmly over areas with stuck-on substances. Wipe table legs, starting at the top, wipe it down and around to the floor. Rinse the table by wiping it down with a clean microfiber cloth dampened with warm water. Wipe the table dry with a clean microfiber cloth. Make sure the metal legs are completely dry to prevent rusting.

To make your own homemade glass cleaner to touch up the surface in between deep cleanings, mix a solution of one-part vinegar and two parts water in a spray bottle. Spray the vinegar solution over the glass surface of the table only. Be careful not to spray the metal legs, as vinegar is acidic, and the solution could corrode the metal. Use a microfiber cloth to wipe the glass table from back to front using a tight S pattern. Use a clean, dry microfiber cloth to dry.

### **How to Clean a Treated Wood Table**

Gather the necessary tools and cleaning products. Remove everything from the coffee table and dust it using a microfiber cloth. Keep in mind that wooden coffee tables can vary based on the type of wood. Be sure to follow the manufacturer's instructions for cleaning the type of treated wood coffee table that you have. Test out your cleaning solution on an inconspicuous spot—such as the inside of the leg—to be sure the solution does not damage the wood or the finish. If your coffee table has untreated wood, be sure to research how to clean it. Let's learn how to clean a traditional, treated wood coffee table with four wooden legs.

- Tools—Microfiber cloths, two small buckets or bowls (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—Mild dish soap or castile soap, warm water
- Cleaning solution—Mix two quarts of warm water with ½ teaspoon of dish soap or two tablespoons of castile soap in a small bucket. (You may also opt to use your preferred cleaning solution.)

To clean the table, mix ½ teaspoon of mild dish soap or two tablespoons of castile soap with approximately two quarts of warm water in a small bucket. Immerse a clean microfiber cloth into the warm soapy water and wring out any excess water. The cloth should be damp, but it should not be dripping wet. Wipe the tabletop from back to front, using a tight S pattern, rubbing firmly over areas with stuck-on substances. Make sure to include the edges. Rub the cloth over the surface, and don't let the liquid linger for long. This will help to protect the finish on the wood. Next, wipe down the table legs. Start at the top of one leg and wipe all the way down and around to the floor. Wipe inside any crevices along the leg. Repeat this step on the other table legs.



Rinse the table by wiping it down with a clean microfiber cloth dampened with warm water. Use a clean, dry microfiber cloth to dry.

### **How To Clean A Bookshelf**

Have you ever picked up a book and literally could blow a layer of dust from it? Although the bookshelf is very easy to clean, it is often overlooked. Let's begin by gathering the tools and cleaners that we will need. Research the type of bookshelves that you have and the best method to clean them. Today we are going to clean a basic four-shelf wooden bookshelf with a solid back.

- Tools—Microfiber cloths or towels, bucket, step stool, an empty box, tote, or bag (for decluttering.)
- Cleaners—Dish soap or castile soap, warm water, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the bookshelf.)
- Cleaning solution—Combine one gallon of warm water, one teaspoon of mild dish soap or ¼ cup of castile soap, one teaspoon of baking soda (optional) in a bucket. (You may also opt to use your preferred cleaning solution.)

In Chapter 5, we cleared and dusted the bookshelf. Now, it's time to clean the bookshelf. First, mix one gallon of warm water with one teaspoon of dish soap or ¼ cup of castile soap in a bucket. If you want to enhance this solution, you can add one teaspoon of baking soda. Test your solution in an inconspicuous spot to make sure that it is compatible. We will begin with the bookshelf's exterior. If your bookcase is taller than you, then step on your step stool so you can see the top of your bookshelf. Dip your microfiber cloth into the cleaning solution. Wring it out so that the cloth is damp, but not dripping wet. Starting at the top left corner, wipe back and forth or in a circular motion while moving from left to right and right to left, working your way toward the front (S pattern). Make sure to include the top edge. If necessary, immerse the cloth in the cleaning solution to clean it of any dirt and debris, wring it out and continue. Next, clean one exterior side of the bookshelf. Start from the top left corner, wipe in a back and forth or circular motion while moving from left to right and right to left, working your way toward the bottom (S pattern). Make sure to include the edges. Repeat this step on the other exterior side and back of the bookshelf.

Now we will clean the interior surfaces of the top shelf, working from top to bottom (i.e., the interior top, the interior rear panel, both interior side panels, and the horizontal slat). Then, we will clean the interior of the other shelves. While cleaning, remember to periodically immerse the cloth in the cleaning solution to clean it of any dirt and debris, wring it out and continue.

- Wipe the top of the bookshelf's interior, using a circular or back and forth motion. Move from left to right and right to left, in a slightly overlapping tight S pattern working toward the front edge of the shelf. Then, wipe the edge.
- Next, clean the interior rear panel. Starting at the top left corner, wipe using a circular or back and forth motion, moving from left to right and right to left, in a slightly overlapping tight S pattern working toward the bottom. Be sure to wipe the edge.
- Next, clean the interior side panels starting from the top, rear corner, in the same manner, the rear panel was cleaned.
- Now clean the horizontal slat (where items sit). Starting in the rear, left corner, wipe in a circular or back and forth motion, moving from left to right and right to left, in a

slightly overlapping tight S pattern working toward the front of the shelf. Be sure to wipe the front edge.

- Clean all the remaining shelves and the surrounding interior surfaces in the same manner.
- To rinse, dip a clean microfiber cloth into the bucket of clean water. Wring it out so that the cloth is damp, but not dripping wet. Rinse the entire bookshelf following the steps that were taken to clean it. This will ensure that none of the cleaning solution remains.
- Lastly, use a dry microfiber cloth to dry the entire bookshelf.

Now that your bookshelf is clean, use a dry microfiber cloth to dust your books and other items before placing them back on the bookshelf. Do a quick declutter by discarding any books or items that you are not using or place them in a giveaway bin.

### **How to Clean a TV**

In Chapter 5, we discussed how to dust a flatscreen television on a stand. If after dusting, smudges, fingerprints, or extra heavy grime still exists, proceed to the steps below to clean the television. Before you begin cleaning your television, read the manufacturer's cleaning instructions for the particular television brand that you have. For this section, we will be cleaning a generic, LCD, or plasma flat-screen television.

- Tools—At least two microfiber cloths and a small bucket (with warm water for cleaning)
- Cleaners—Warm water (You may also opt to use your preferred cleaning solution.)

When cleaning a television, you should clean the frame, then the screen and finally the base or stand. Turn off the television, unplug it and allow it to cool down for a few minutes. Allowing the television to cool down lowers the risk of damage, and when the screen is dark, the dirty spots are easier to see. You should always begin with a basic cleaning of your television before moving on to the use of any type of solution. For a basic cleaning, use a dry microfiber cloth to wipe the surface as described in Chapter 5: How to Dust. If after dusting the television, smudges, fingerprints, or extra heavy grime still exist, use warm water to clean the television. Dampen the microfiber cloth with warm water. Wring out any excess water to ensure it is damp and not dripping wet. Gently wipe the frame of the television from top to bottom. Be careful of the amount of pressure that you apply to the television. Begin at the top edge, work your way across, down the sides, and across the bottom.

Next, clean the television screen. NOTE: Be gentle. Rubbing the screen too hard may damage the pixels. There are a couple of ways you can clean the screen. Using a water-dampened microfiber cloth, you can either wipe the screen from top to bottom, moving from left to right in a tight W pattern, or you can wipe the screen starting from the top left and wipe across to the right, using a tight S pattern until you reach the bottom. Once this is complete, use a clean microfiber cloth to remove any excess water from the screen. Next, clean the base of the television. Using the water-dampened microfiber cloth, wipe from the highest area of the base and move to the lowest. If there is a stand at the bottom, then clean the stand last. Allow the surface to dry completely before plugging the television back in. If you find that wiping the screen with water doesn't remove the smudges, fingerprints, or extra heavy grime, consult the television manufacturer for further instructions. When cleaning a television, remember the following important points:

- Never spray anything directly on the screen. This could cause a shock or component failure if anything drips or seeps into the internal parts of the television.
- Never use cleaners such as Windex or cleaners that contain ethyl alcohol, ammonia, or acetone to clean the screen. These chemicals can cause your screen to turn yellow.
- Never use tools like paper towels or anything too abrasive to wipe the screen. The fibers will scratch the screen.

### **How to Clean a Telephone**

Your telephone can have a plethora of germs, bacteria, make-up, food, and other substances, especially in the cracks and crevices. If needed, use a dry microfiber cloth to dust your telephone before cleaning (as discussed in Chapter 5). Read the manufacturer's cleaning instructions for the particular telephone brand that you have. In this instance, we will be cleaning a two-piece (phone receiver and base), cordless house phone.

- Tools—At least three microfiber cloths and two small buckets or bowls (one with your cleaning solution and one with clean, warm water used for rinsing)
- Cleaners—Mild dish soap or castile soap, warm water
- Cleaning solution—Combine one quart of warm water with ¼ teaspoon of dish soap or one tablespoon of castile soap in a bowl. (You may also opt to use your preferred cleaning solution.)

Unplug the telephone before cleaning to prevent electrocution and misdialed calls. Now, mix one quart of water and ¼ teaspoons of dish soap or one tablespoon of castile soap in a bowl. First, dampen a microfiber cloth with the cleaning solution. Wring out excess water so that it is damp and not dripping wet. Wipe the back of the phone receiver from top to bottom. Turn the receiver over and wipe the front of the receiver from top to bottom. Next, clean the phone base, completely wiping all around the base. Next, dampen another microfiber cloth with plain water and wipe the surfaces of both the receiver and the base to rinse the cleaning solution. Then, use the dry microfiber cloth to dry the surfaces. Because the handset and the keypad are germ hotspots, follow the instructions to disinfect them in Chapter 9: How to Disinfect. Make sure the surfaces are completely dry before plugging the telephone back in.

### **How to Clean a Laptop**

In Chapter 5, we discussed the scenario of Sister Maryam researching how to clean her laptop via the Dell website. Laptops, like most electronics in our lives, are used frequently and can get dirty, ending up with a host of germs on them. Laptops are among the most expensive of our electronics and must be cleaned with care. Before cleaning your laptop, read the manufacturer's cleaning instructions for the particular laptop brand that you have. For this section, we will be cleaning a basic laptop computer.

- Tools—Gloves and microfiber cloths
- Cleaners—70% isopropyl alcohol (commonly known as rubbing alcohol) or use the manufacturer's approved or preferred cleaner

Turn off the laptop and unplug the device. Disconnect all external devices from the laptop (such as USB drives, HDMI cables, etc.). Dampen a microfiber cloth with 70% isopropyl alcohol. The cloth should be damp, but make sure the cloth is not dripping with the solution. When cleaning a laptop or computer, always apply the cleaning product to the cleaning tool (in this case, the microfiber cloth) and never directly onto the computer. Using the moistened microfiber cloth, gently wipe the exterior parts of the laptop. Wipe the top cover from left to

right and right to left, in a slightly overlapping tight S pattern. You may need to rub gently to remove any stuck-on substances, but be careful not to apply too much pressure. Gently wipe the underside of the laptop in the same manner. Wipe down the keyboard moving from left to right, using a slightly overlapping S pattern, until all dirt is removed. Be sure to wipe in between the keys to remove any stuck-on dirt or substances. Lastly, wipe down all other cords and cables, wiping each from one end to the other.

Next, we will clean the screen. Using the moistened microfiber cloth, carefully wipe the screen in one direction moving from the top of the display to the bottom. Be careful as excessive wiping may damage the screen. Allow the surfaces to completely air-dry before turning the laptop back on. No moisture should be visible on the laptop before it is powered on or plugged back in. Discard the disposable gloves used after cleaning. As computers are high touch areas, wash your hands immediately after disposing of the gloves. When cleaning a laptop, remember the following important points:

- Never allow any moisture to drip into areas like keyboards, display panels, etc. Moisture entering an electronic product can cause damage to it.
- Use only a soft, lint-free cloth. Avoid abrasive cloths, towels, paper towels, or similar items.
- Don't use Windex, other glass cleaners, cleaners with ammonia, alkaline cleaners, aerosol sprays, bleaches, or abrasives to clean your laptop.
- Use canned, compressed air to remove any dust or crumbs between the keys of the keyboard or in the vents. Check your manufacturer's instructions; not all of them suggest using compressed air. Never use an air compressor.

### **How to Clean Vases**

Empty your vase of all contents and debris. Gather all the necessary tools and products to clean it. These items may vary depending on the type of vase that you are cleaning. Be sure to research the type of vase that you have in order to determine the best way to clean it. Or, check the manufacturer's instructions for the best cleaning practices. Today we will be cleaning a clear glass cylinder vase.

- Tools—Dish brush or bottle brush, microfiber cloth
- Cleaners—Dish soap or castile soap, warm water, vinegar, baking soda (Before cleaning, test the baking soda in an inconspicuous area to make sure it is safe for use and does not damage the vase.)
- You may also opt to use your preferred cleaning solution.

Fill the vase with warm water and a squirt (approximately  $\frac{1}{4}$  teaspoon) of dish soap or one tablespoon of castile soap. Using a microfiber cloth, dish or bottle brush, clean inside the vase using an up and down pattern, turning the vase as you scrub, until you have cleaned the interior walls of the vase. Then, clean the bottom of the inside of the vase. Next, clean the outside of the vase using the same up and down motion, turning the vase as you go. Then, turn the vase over and clean the bottom of the vase. Rinse the inside of the vase and then the outside until all the soap is gone. Turn the vase over onto a dry towel until the water is drained. Then, turn the vase upright and dry thoroughly using a microfiber towel.

For a vase that has white film (mineral deposits) or stains, fill the vase with warm water, one tablespoon of baking soda, and  $\frac{1}{4}$  cup of white distilled vinegar. Allow the solution to sit in the vase for 30 minutes. Then, clean the vase as previously instructed.

## Section 6.6 Cleaning Porous Surfaces

Most of the day-to-day manual cleaning done in the home will be to clean the non-porous surfaces. In this section, we will focus on cleaning some of the porous surfaces. Porous surfaces allow water, liquids, particles, and vapor to pass through. This includes items made from paper, untreated wood, cardboard, natural granite, natural marble, linoleum, sponge, and fabrics (such as linen, clothing, and drapery). Unlike non-porous surfaces, most porous surfaces used daily are more difficult to clean because you cannot simply wipe them down. Below are things to consider when cleaning porous surfaces.

### Before Cleaning

- Note that hand and body hygiene is crucial. Since porous materials are permeable, then they absorb bodily fluids, dirt, oils, and other liquids found on our hands and body. Washing your hands regularly and daily bathing will limit the amount of external matter absorbed in the porous materials in your home.
- Make sure that you are wearing your cleaning clothes and other personal protective equipment like gloves, apron, goggles, etc. Thoroughly wash your hands before putting on gloves. Read all product labels to be sure you are wearing the appropriate protective equipment.
- Gather the necessary cleaning supplies based on the surface to be cleaned.

### How to Clean a Sofa

Sofas come in a variety of materials such as linen, leather, microfiber, and more. Before cleaning your sofa, check the manufacturer's instructions for the appropriate cleaning method and product to avoid ruining your couch and voiding any warranties. Typically, the cleaning instructions are on tags located on the sofa cushions. Check the front and back of all tags because some may address how to clean the sofa cover, and others may address how to clean the cushions. Even if the tags do not provide cleaning instructions, they will provide information regarding the materials from which your sofa upholstery is made. You can then use this information as a guide for researching the best cleaning methods for that material. In most cases, the tags on sofas will have cleaning codes, which are letters that indicate how the sofa should be cleaned. They are as follows:

W — This material can be cleaned using water or a water-based cleaning agent.

S — Use a special solvent-based cleaner only. Do not use water.

WS — Water or a solvent-based cleaner can be used. However, it is recommended that this type is professionally cleaned.

X — Must be vacuumed only or professionally cleaned.

Strictly adhere to the manufacturer's instructions, and be sure to test your cleaner on an inconspicuous area of the sofa. For the purposes of this guide, we will cover how to clean a fabric sofa labeled with code W. This code is commonly found on the upholstery that is the most durable and the easiest to clean.

- Tools—Microfiber cloths, vacuum, bucket, fan (optional)
- Cleaners—Distilled water, 5% white vinegar, mild dish soap
- Cleaning solution—Combine two cups of distilled water, ¼ teaspoon of mild dish soap, and one tablespoon of 5% white vinegar in a large bowl. (You may also opt to use your preferred cleaning solution.)

First, vacuum the sofa as directed in Chapter 5 to loosen and remove dirt and debris. This will prevent dirt and debris from getting ground in the upholstery fibers while cleaning. To prepare your cleaning solution, mix 2 cups of distilled water, ¼ teaspoon of mild dish soap, and one tablespoon of 5% white vinegar in a bucket. Experts recommend distilled water because it does not contain minerals that can potentially create rings and cause fading on your furniture. Immerse the microfiber cloth in the solution and wring it out a few times to rid it of excess water. Make sure the cloth is not dripping wet to prevent moisture seeping into the upholstery. Next, identify the stained areas of the couch, and use the moistened cloth to blot them out by repeatedly pressing or dabbing the cloth into the stain. Do not rub in circles or back and forth as this can distort the upholstery fibers and cause them to pill. Work from the outer edge of the stain to the center to prevent the formation of rings. Periodically, immerse the cleaning cloth in the solution to clean dirt and debris from the cloth; wring it out until damp, and continue. Next, dampen a clean cloth with distilled water only and use it to blot the cleaned areas to rinse off the cleaning solution. Allow the sofa to air dry. You may opt to place a fan in front of the sofa to expedite the drying time and to be sure it dries thoroughly.

The key to maintaining a clean sofa is to clean up spills as they occur. The longer a stain remains on upholstery, the more difficult it is to remove it. If you are cleaning up a large spill, first blot it with a towel. If the spill is thick, use a butter knife or spoon to gently scrape away the debris. Then, follow the cleaning instructions provided above or as directed in the manufacturer's instructions. For a more thorough and deeper clean, some W code upholstery sofas can be steam cleaned. There are even varieties, where the cushion covers can be removed and washed in the washing machine. Be sure to first consult the manufacturer's instructions to see if this is appropriate for your sofa.

### **How to Clean Curtains**

Curtains and drapes beautifully adorn our windows to complete the look of a room. Although the words curtains and drapes (also called draperies) are used interchangeably, there is a difference. Drapes are more formal, heavier, and tend to hang longer than curtains. Consequently, drapes are found in more formal rooms such as formal dining rooms, elegant living rooms, and upscale restaurants. Curtains are less formal and can be found in just about any room from the kitchen to the bathroom, the family room, living room, and more. Drapes extend to the floor, while curtains may stop at the length of the window. Some curtain varieties extend to the floor. Curtains are usually opened and closed by pulling on them, while draperies use a drawstring. Because of the elaborate nature of drapes, they usually must be dry-cleaned. Whether cleaning curtains or drapes, first read the cleaning and care instructions on the labels.

For this guide, we will focus on how to clean curtains since they are most used to adorn the windows in our homes. Some curtains can be laundered in the washing machine while others must be dry-cleaned or hand washed. Curtains with stitched in pleats, decorative ornaments, and stitched in swags should be dry-cleaned. A swag is a piece of fabric that is wrapped or draped over a curtain rod. Strictly adhere to the instructions provided on the label to avoid damaging your curtains. This is crucial because even if the cover of the curtain is made from a material that is machine washable, the lining may not be and will shrink. Shrinkage may also occur at the seams. When in doubt, have your curtains dry-cleaned. If the label indicates that your curtains are machine washable, here are some tips to guide you through the process.

- Tools—Washing machine, mesh bag, several towels

- Cleaners—Gentle laundry detergent, cold water (You may also opt to use your preferred cleaning solution.)

Take down the curtains and be sure to remove any hardware they may contain, such as curtain rings, hooks, weights, etc. Take the curtains outside and shake them, removing as much dust as possible. Now, load the curtains in the washer. Place lace curtains in a mesh bag before laundering. Please note that you should wash no more than two curtain panels at a time. Depending on the thickness of the fabric, more than two may overload your washer and prevent your curtains from getting cleaned thoroughly.

Next, follow the cleaning instructions on the label. If detailed instructions are not provided, wash the curtains in cold water using a gentle laundry detergent on the delicate cycle. Then, hang them to dry, preferably outside. If you have allergies, hang them inside. If inside, place towels underneath to catch the dripping water. If hung in an area with hardwood or laminate floors, place plastic trash bags under the towels to prevent the floors from becoming wet.

Once your curtains are completely dry, iron them according to the recommended setting on the label or steam them using a handheld garment steamer. Lastly, hang your curtains up and enjoy the beautiful ambiance that fresh, clean curtains bring to a room. To freshen your curtains in between cleanings, occasionally hang your curtains up outdoors or place them in the dryer on the no-heat setting.

### **How to Clean a Lamp with Lampshade**

After dusting your lamps and lampshades, gather the necessary tools and products to clean them. Be sure to follow the manufacturer's instructions for the best cleaning method for the type of lamp and lampshade you have. In this instance, we will clean a metal lamp. We will also go over how to clean a fabric and plastic lampshade.

- Tools—Microfiber cloths, two buckets, (one with your cleaning solution and one with clean, warm water used for rinsing), soft brush (optional)
- Cleaners—Mild dish soap or castile soap, warm water, vinegar (optional)
- Cleaning solution—Mix one gallon of warm water with one teaspoon of dish soap or ¼ cup of castile soap in a bucket. (You may also opt to use your preferred cleaning solution.)

### **Cleaning the Lamp**

Turn off and unplug the lamp. Allow the lamp to cool completely. Then, remove the bulb (if applicable) and gently wipe it with a dry microfiber cloth and set it aside. Remove the lampshade. Mix the cleaning solution by combining one gallon of warm water and one teaspoon of dish soap or ¼ cup of castile soap in a bucket. Fill another bucket halfway with plain water. Dip your cloth into the bucket with the cleaning solution and wring out the excess water. Starting at the top of the lamp, wipe around the lamp using back and forth strokes as you wipe. Be careful not to wipe inside the lamp socket (the area that holds the lightbulb). Go around the entire lamp base from top to bottom. Wipe the pull cord or string from top to bottom (if applicable). Firmly hold the electrical cord with the cloth while holding the base of the lamp with the other hand. Wipe from the top of the electrical cord to the end where the plug is. Do not wipe over the electrical prongs of the plug. To rinse, dampen a clean cloth in the bucket of plain water and wipe the lamp, retracing the steps you covered to clean it.

### Cleaning a Plastic Lampshade

Dampen your microfiber cloth in the soapy solution. Starting at the top, wipe the shade moving from top to bottom, using downward strokes. Continue around the entire shade. Then rinse using the cloth dampened with water, wiping in the same manner. Use a clean, dry microfiber towel to dry the lampshade.

### Cleaning a Fabric Lampshade

Fill a bathtub with warm water and add one teaspoon of dish soap (not castile soap). If the shade has grease stains, add one cup of white distilled vinegar. Remove the lampshade from the lamp. Hold it by the metal part and immerse it in the solution in the tub. Using a microfiber cloth or a soft brush, gently rub the outside of the lampshade moving from top to bottom using a straight downward stroking pattern. Go around the lampshade in this manner until the entire shade is clean. Empty the tub and rinse the soap from the lampshade with a gentle stream of water. Gently, but thoroughly blot dry with a clean, dry microfiber towel or use a blow dryer on a low setting.

Once the lamp and lampshade are completely dry, replace the bulb and the lampshade. Then, plug the lamp back in.

### How to Clean a Rug

Rugs bring a warm decorative element to your home and soften the feel of rooms with bare floors. They can become a hotbed for germs and odors if not cleaned regularly. While vacuuming them is great, they also require a deeper cleaning once or twice a year. Be sure to read the labels on your rugs and follow the manufacturer's cleaning instructions. While you can have your rugs professionally cleaned, if the label suggests you can do it yourself, this will save you a great deal of money. More importantly, it will put the power of the cleaning solution in your hands. Whichever cleaner you choose, be sure to first test it in an inconspicuous area of the rug. If it does not cause the colors to run, then this cleaner may be a winner for your rug. The rug that we will be cleaning is a synthetic rug.

- Tools—Bucket, sponge or soft-bristled scrub brush, garden hose, squeegee, plastic garbage bag (if cleaning inside) additional soft-bristled brush or vacuum, fan (optional)
- Cleaners—Mild dish soap, warm water (You may also opt to use your preferred cleaning solution.)
- Cleaning solution— Fill a bucket with warm water and add one tablespoon of mild dish liquid. (You may also opt to use your preferred cleaning solution.)

Before getting started, consider where you will clean your rug. If it's a warm, sunny day, it may be better to clean your rugs outdoors. This will enable the dust and dirt to remain outside, and you'll have the extra benefit of the deodorizing power from the sun. Also, the warm air will decrease the drying time and help the rug to dry completely. If this is not an option, then be sure to pick an area inside where the floor will not be damaged by moisture.

First, vacuum both sides of the rug to remove any loose dirt, crumbs, and other debris. Or, shake or beat the rugs outdoors as instructed in Chapter 5. To prepare the cleaner, place one tablespoon of mild dish liquid cleaner in a bucket and fill with warm water. Be sure the water is warm and not hot because it can fade the color and shrink the fibers. Next, immerse a sponge or brush into the bucket of water. A scrub brush is ideal for deep cleaning your rug. Wring out the sponge until it is moist or shake the brush a few times over the bucket to release some of the solution. Then, use the sponge or brush to work the cleaner in the rug.



Use a tight, slightly overlapping W pattern to scrub the detergent deep in the rug so that it penetrates the fibers. The cleaner should lather as you scrub. Scrub across the rug from left to right or right to left and move from the top of the rug to the bottom. Periodically, immerse the sponge or brush in the cleaning solution to clean it of any dirt and debris, then continue.

After scrubbing the entire rug, allow the cleaner to sit on the rug for about ten minutes. Then, using a garden hose, rinse the rug thoroughly until there are no more suds. Any remaining soap residue will become a magnet for dirt. Next, remove excess water from the rug by using a squeegee. This will help your rug to dry thoroughly. Place the rubber blade of the squeegee in the top corner of the rug and press down firmly while sliding it down the rug. Work across the rug, from left to right or right to left, moving down the length of the rug. Repeat each movement as needed to remove as much water from the rug as you can. You can also remove excess water by laying several towels on top of the rug and pressing them to absorb the water. Be sure to press them over the entire surface of the rug, working from top to bottom.

After removing the excess water from the rug, lay it flat to dry with the right side facing up. Once the right side of the rug is dry, flip it over for the other side to dry. If you are drying the rug indoors, place plastic garbage bags underneath it to protect your hardwood or laminate floors from moisture. You may also opt to place a fan in front of the rug to help with drying time and to ensure the rug completely dries. Be patient with the drying time. It may even take a couple of days, but it's important to allow the rug to dry completely. After both sides have dried, flip the rug over and vacuum the right side to loosen the fibers. Place it back in its room and enjoy your beautiful, clean rug.

### **How to Clean Grout**

Grout is a composite material made of cement, water, and sand and is typically used to fill the spaces between tiles. It holds tiles together, preventing moisture and water from getting into the layers underneath. It also forms a strong network around the whole structure, helping to keep every tile in its place and safe from cracks or chips. The major types of grout include:

- Unsanded grout – This type of grout is typically made from mixing cement, water, and non-sand particles and is used for wall tiles where the grout joint is less than 1/8" wide.
- Sanded grout – This type of grout is a Portland cement-based grout with silica sand, inorganic aggregates, and chemicals and is used for floor tiles where the joints are 1/8" to 3/8" wide.
- Epoxy grout – This consists of an epoxy resin and hardener. Epoxy grout for ceramic tile is highly resistant to stains and chemicals and has a tremendous bonding strength. This grout is ideal for countertops and other areas susceptible to stains.

Sanded grout is the grout typically used for most projects due to its affordability, its tight lock, and clean finish. For this guide, we will clean a sanded grout ceramic tile floor.

- Tools—Grout brush or firm toothbrush, measuring cups, bowl, microfiber cloth, floor mop, gloves, bucket, and knee pads (optional)
- Cleaners—Warm water, dish soap, hydrogen peroxide, baking soda (Before cleaning, test the baking soda and hydrogen peroxide in an inconspicuous area to make sure it is safe for use and does not damage the grout.)

- Cleaning solution—Mix 1 ½ cups of baking soda, ½ cup of hydrogen peroxide, and two tablespoons of dish soap in a bowl. (You may also opt to use your preferred cleaning solution.)

Sweep or vacuum the floor to remove any debris or dust. Place the baking soda in a bowl, add the hydrogen peroxide and dish soap and mix thoroughly. Working in small sections, use the grout brush or firm toothbrush to apply the solution to the grout lines. Let the solution sit for a few minutes. Then, scrub using a back and forth motion, moving clockwise all the way around the first tile. Continue scrubbing the grout in the small section of tiles. Then, using a damp microfiber cloth, rinse the section removing any residue. Continue cleaning all grout lines in this manner. Finally, mop the floor. Refer to Chapter 7 to learn how to mop a floor. Allow the floor to dry.

### **Tips for Cleaning Porous Surfaces**

- The most basic type of cleaning for porous surfaces is to get rid of any visible debris and contaminants. You may need to dust the surface, as explained in Chapter 5. You can remove dirt by spot cleaning with soap and water or your preferred cleaner.
- For porous surfaces like painted walls and untreated wood, test the cleanability of the surface by first washing an inconspicuous area with soap and water. You can often use a nonabrasive, all-purpose cleaner or a wood cleaner to clean these types of surfaces.
- Items that can be put in the laundry, like bed linen, drapes, sofa covers, and some soft toys, should be laundered weekly or as needed.
- Note: Porous items like paper and cardboard cannot be cleaned and are typically single-use items. Nevertheless, they can be brushed with a dry paper towel to remove dust, or they can be spot cleaned with soap and water to remove visible dirt and debris.

## **Section 6.7 Cleaning Surfaces in Action**

Let's revisit the home of Sister Maryam and take a look at how she applies what we have discussed in this chapter. In between deep cleanings, Sister Maryam periodically cleans the visible surfaces in her kitchen. The following is an overview of the steps she takes to make her kitchen sparkle.

**Step 1:** Sister Maryam gathers the tools necessary for cleaning the various surfaces in her kitchen. She has carefully selected cleaners according to the surfaces that will be cleaned, and she is armed with several cleaning cloths.

**Step 2:** Sister Maryam puts on her cleaning clothes and PPE.

**Step 3:** Using the information provided in this chapter, Sister Maryam begins cleaning the visible surfaces in the following order:

1. Upper cabinets
2. Backsplash
3. Countertops
4. Stove (outer surface, starting at the top of the stove and working down to the range, knobs, and oven door)
5. Lower cabinets



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## Chapter 7: Sweeping, Vacuuming, Mopping

In previous chapters, we learned about various products and tools that are used for dusting and cleaning our homes. We learned the significance of working from top to bottom to get our homes clean. In this chapter, we are at the very bottom—the floor. Floors have all kinds of dirt and debris lurking on them, whether visible or not. Because dust doesn't discriminate, we should frequently clean even barely used floors. Dust settles on all floors, in high and low traffic areas. Depending on the type of floor, clean them by sweeping, vacuuming, and mopping. In this chapter, we will explore sweeping, mopping, and vacuuming and how to make the floors in our homes clean and pristine.

### Section 7.1 Sweeping

Now, let's get our floors clean. Sweeping is to clear or clean (a floor, room, chimney, etc.) of dirt, litter, or the like, using a broom or brush. Sweep hard on bare floors (such as those comprised of wood, tile, marble, laminate, concrete, etc.) to rid them of dirt and debris. Vacuum carpet, rugs, and upholstery. Vacuuming will be covered later in this chapter. As previously mentioned in the last two chapters, sweeping and vacuuming should be done after dusting and cleaning to catch the particles that have fallen to the floor.

#### Tools for a Clean Sweep

Good sweeping starts with three essential tools—a broom, dustpan, and trash can. Consider the following information when selecting the right tools for effective sweeping.

- ***Selecting the Right Broom***

When selecting a broom, you should consider the type of flooring you have, the material of the broom's bristles, the shape of the broom head, and the length of the broom handle. All of these things will affect how effectively the broom will clean.

Brooms with bristles made of natural fibers (such as straw) work best on floors that have a more textured or rougher surface. The stiffness of natural fiber brooms works better at tackling debris on rougher surfaces such as wood and concrete. For a smoother floor, you may opt to use a broom with synthetic bristles (such as plastic). Synthetic bristles glide easily over smoother surfaces, while trapping dirt and debris, and are easier to maintain because they can withstand moisture. Therefore, you can wash them easily with minimal to no damage. Make sure your broom's bristles are one-directional. If your broom's bristles are askew, pointing in all different directions, this makes it more difficult to sweep up all the particles on the floor.

Angled brooms work well at getting into corners and tight places. The bristles on angled brooms are slanted, forming an angle which gives them the advantage in maneuvering to clean corners and tight spots.

Whatever broom you choose, the broom handle should be a length that is comfortable based on your height. Because of the advantages that different types of brooms have to offer, it is not uncommon for a household to have several types. For hygienic reasons, designate a separate broom for the bathroom and outdoors.

- ***Deciding on a Dustpan***

We can't have a broom without having its faithful companion—the dustpan. Once you have selected a good broom, then select a good dustpan that works for you. Keep in mind that some dustpans are handheld, requiring you to bend to use them, while others are attached to a long handle and do not require bending. Some also come as a set and have a small handheld brush that accompanies them. This can be very useful in getting up that last bit of dirt or with getting up small messes. Whatever dustpan you choose, the most important feature on a dustpan is a razor-thin lip. The lip is the front end of the dustpan, where the debris is swept into the pan. If the lip is too thick, you will end up with a nasty little strip of dirt on the floor. For best results, use a dustpan with a lip that is no more than an eighth of an inch thick.

- ***A Plastic Comb for Your Broom***

Yes, this refers to an actual hair comb. This tool is optional and is not a mandate for good sweeping. Not only is a plastic comb good for your hair, but it is also great for your broom. A plastic comb is a convenient tool for combing away particles and debris that become trapped in the bristles of the broom. Be sure to store the broom comb with your cleaning tools and label it, so no one mistakenly uses it for their hair.

### **Choosing the Right Method for a Clean Sweep**

Before your broom hits the floor, pick a central collection spot for the dirt and debris you are about to sweep. Everything you sweep will be swept toward this spot so that the dirt is gathered all in one place. Your dirt collection spot should be an area of the floor that is protected from airflow so that the wind blowing in through doors and windows doesn't ruin your sweeping efforts. When picking your spot, don't sweep yourself into a corner. The most common method of sweeping is to begin at one side of the room and sweep toward the exit. Another method is to walk around the room, sweeping from the perimeter toward the center. If the room is large, you may need to divide the room into sections so that you can sweep one section at a time. After sweeping a section, you may choose to discard the pile of dirt that has accumulated in the dirt collection spot of each section. This way, you can sweep and discard as you go. For smaller rooms, you may decide to make one pile and discard it at the end of the sweeping.

Now that we have explored tools and methods for effective sweeping, let's take a look at how everything comes together, so that dirt, dust, crumbs, and debris get swept away.

### **Steps for Effective Sweeping**

#### Before you Sweep

To make the process of sweeping easier, take the following steps before sweeping the floor.

- Be sure the floor is dry. Clean up any water or liquid before sweeping. Not only is sweeping a wet floor ineffective, but it can also ruin your broom's bristles.
- Clear the area of any items that will block your path, such as area rugs, small furniture, toys, etc. Remove any rugs or floor coverings and shake them out or beat them outside. Allow them to hang over a railing or balcony while you sweep. Move any furniture (tables, chairs, plants, etc.) before sweeping.



## Sweeping the Floor

1. Hold the broom with one hand near the top of the broom and place the other hand near the middle.
2. Start with the broom away from your body at a comfortable distance. Place the broom head on the floor and use short, firm strokes to pull the dirt and debris toward the central collection spot. Using short, firm strokes will give you more control.
3. Avoid pressing the bristles too hard into the floor or sweeping too forcefully or quickly to avoid sending dust and debris into the air.
4. When sweeping corners, make sure to place your broom at an angle (or use an angled broom) to make sure you get into the corners. A small handheld broom and dustpan is also great to get in the crevices of corners and small spaces.
5. To ensure you are reaching every nook and cranny, use one of the following strategic methods to maneuver the room as you sweep:
  - i. Move around the perimeter of the room, sweeping from the edges of the room toward the center. Sweep all of the dirt into the center of the room.  
-Or-
  - ii. Move from the far end of the room toward the door, sweeping all the dirt toward the doorway.  
-Or-
  - iii. If the room is large, divide the area into sections and sweep each section, discarding dirt piles as you go, after sweeping each section.
6. If necessary, periodically pause while sweeping to clean your broom. Sometimes clumps of hair, lint, dust bunnies, food, etc. get caught in the bristles of the broom. Stop periodically to remove this debris from the broom and place it in a trashcan to avoid dirtying other areas of your floor. Wear disposable gloves and make sure that you wash your hands if they come in contact with any debris in the broom.
7. After sweeping the dirt into a pile, sweep it into a dustpan. Hold the dustpan firmly against the floor and sweep the dirt into it. Back the dustpan up a bit to get any dirt trapped under the lip. Then, discard it into a trash bin. To pick up the remaining dust and dirt line, use a smaller handheld broom and dustpan, vacuum, or a slightly dampened paper towel.

## **How Often Should You Sweep?**

In a word, DAILY. Sweep uncarpeted floors in high traffic areas daily, such as the entryway, kitchen floor, dining room floor, and bathroom. These areas are hot spots for dust, crumbs, hair, lint, and other debris. Sweep hard floors in lower-traffic areas at least once a week. Of course, sweep up dry spills immediately as they occur. Here are some tips for sweeping success:

- ✓ Aside from periodic cleanings, avoid getting your broom wet, as it can prematurely destroy the bristles.
- ✓ Make sure the broom is in good condition before using it. Make sure the bristles are not frayed or bent. The bristles should be one-directional and not going in multiple directions. If the bristles are frayed, bent, or going in different directions, then it's time to replace the broom. Sweeping will be ineffective if your broom is not in good condition.
- ✓ Periodically clean the broom. As previously mentioned, you can use a plastic comb to clean lodged debris in the bristles of the broom. You may also vacuum your broom using one of the attachment tools. Occasionally, deep clean your broom by letting it

soak in a bucket of warm, soapy water for 30 minutes for synthetic bristle brooms or 15 minutes for natural bristle brooms. Rinse well and allow it to dry upside down until it is completely dry. Hang it or store upside down to prevent the bristles from becoming bent.

- ✓ Periodically, clean your dustpan by washing it in soap and water. Pat it dry as much as possible and then allow it to air dry.

Routinely sweeping the hard floors in your home will make your house sparkle, freeing it from dirt, allergens, and other impurities that can affect your health. May Allah bless you with *sweeping* success as you endeavor to maintain a clean and tidy home!

## Section 7.2 Vacuuming

In Chapter 5, we used our vacuums to dust items like our sofas, and in Chapter 6, we used them to remove dirt and debris from our windowsills. Now, it's time to delve deeper and use our vacuum for its primary purpose, which is cleaning our floors. Vacuuming is more than just a notion. Vacuuming is an absolute must on carpeted floors. As previously stated in Chapter 5, dust can contain arsenic, lead, and other harmful substances. Therefore, we must remove it from our homes. When we are dusting and cleaning, we begin at the top and work our way down. As a result, dust and debris fall on the floor or carpet. So, vacuuming after dusting is a must. Carpet and rugs also require deep cleaning periodically to prevent them from becoming a hotbed of germs and bacteria. In between deep cleanings, regular vacuuming is necessary to lessen the likelihood of harmful germs settling in your carpet or rug.

### The Dangers of a Dirty Carpet

Dirty carpets are hazardous to our health. While that may sound extreme, consider this: On January 23, 2018, The National Institutes of Health published a study regarding the adverse effects that carpets can have on our health. The results are staggering. The dirty carpet dangers include:

☠ Sniffles

☠ Allergy flare-ups

☠ Eye irritations

☠ Rashes

☠ Asthma

☠ Headaches

☠ Abnormal fatigue

☠ Respiratory infections

☠ Chronic cough

The report also stated that the carpet could become a “sink” or “reservoir” for dust, contaminants, and a host of microorganisms. Just think over the effect this has on our children and the members of our household. This means war! And the weapon of choice is the vacuum! Vacuuming, as part of our regular cleaning routine, will go a long way for the preservation of our health and quality of life.

## Choosing the Right Vacuum for Your Home

When choosing a vacuum that will best suit your needs, it is important to consider the particular dynamics of your household. To explore these dynamics, answer the following questions and refer to your answers when selecting a vacuum:

1. What is the composition of the floors in your home? Are they bare floors, carpeted, or a combination of the two?
2. If you have both carpeted and bare floors, which one do you have the most? Is your home primarily carpeted with a few areas with bare floors or the reverse?
3. If you have carpet in your home, what type of carpet do you have? Is it a low pile carpet, high pile carpet, or both?
4. What is the size of the area(s) you will vacuum? Are they fairly large areas or small areas?
5. Do you have any physical limitations which may cause vacuuming to be a strain? i.e., bad back, arthritis, etc.
6. What is the amount of traffic frequenting your home? Are there many people in your household? Do you entertain large groups frequently?

The answers to these questions will help determine what type of vacuum will work best for you. In general, there are five main types of vacuums—cylinder, upright, handheld, stick, and robot vacuums.

- **Cylinder vacuum cleaners** have a canister on wheels and a hose. When vacuuming, the hose is held in your hand while moving about, gliding it over the areas that are vacuumed, as the canister rolls behind you. Cylinder vacuums are small, compact, and lightweight. Cleaning occurs primarily through suction.



Pros:

- Great for vacuuming stairs.
- Excellent for reaching edges and corners.
- Easy to lift.
- The small size makes it easy to store.



Cons:

- Not as powerful and effective as upright vacuum cleaners.
- Does not “groom” the carpet. Carpet grooming is the act of moving the carpet fiber back and forth using a carpet rake or brush, which resets the fiber nap back to its original state.

- **Upright vacuum cleaners** work by pushing the machine in front of you. They are generally larger and heavier than cylinder vacuums. The cleaning mechanism has a brush bar that beats dirt from the carpet fibers; then, the vacuum sucks up the dirt.



Pros:

- The process of the brush bar action and suction nicely grooms the carpet.
- In many models, the brush bar can be disabled, so the vacuum can also be used on bare floors. This option makes it an excellent choice in homes with bare and carpeted floors.
- Its high power stands up to dirt generated in larger households with high traffic.

- Its high power can tackle jobs in larger spaces.

 Cons:

- It is heavy. It is not the machine you want to carry up and down the stairs.
- May be too heavy for people with physical limitations such as a bad back.
- Tall people may find it uncomfortable because they will have to bend over to use it.
- Its power is too much for some carpets. Uprights tend to pull up the threads in Berber carpets. Be sure to research the type of vacuum that is best for the type of carpet in your home.
- Consumers are cautioned not to use uprights on the stairs to avoid the possibility of it toppling and causing injury. However, you may use attachments to vacuum the stairs.
- You will have to use a crevice attachment to get into corners.

- **Stick vacuum cleaners**, also known as pole vacuums, are a type of upright vacuum characterized by a long narrow pole or stick which connects to an encased motor at the top near the handle and a cleaning brush at the bottom. Of the types mentioned thus far, these are the most lightweight and compact variety. The stick vacuum operates like a regular upright vacuum by pushing the machine in front of you. The brush beats up the dirt and debris as the vacuum sucks it up. The encased motor at the top of some cordless stick vacuums can be removed and used as a handheld vacuum.

 Pros:

- Pretty effective at sucking up dirt and dust.
- Super lightweight for ease of use
- Easy to whip out for quick clean-ups
- The compact size makes it easy to store. Many come with mountable storage caddies that also hold attachment tools.
- Great for maneuvering under and around furniture.

 Cons:

- Low performance on high pile carpets. Works best on bare floors, low pile carpets, and area rugs.
- Most do not have the same level of power as an upright or canister.

- **Handheld vacuum cleaners** are small, lightweight vacuums that are easy to carry around the house. Handheld vacuums are excellent for small jobs that require an immediate cleanup, such as vacuuming crumbs from the couch or dry cereal that spilled on the floor. Handheld vacuums are not for deep cleaning, so if you have carpeted rooms, you will need something with a little more cleaning power.

 Pros:

- Portable and easy to carry around the house.
- Use it to clean up dry spills on multiple surfaces.

 Cons:

- Only able to cover a small area at a time.
- May not have a lot of suction power.

- **Robot vacuum cleaners** are also known as robovacs. A robot vacuum is a compact, automated vacuum that has a small motor to propel it around the house on wheels. It contains a brush that beats up the dirt and debris while sucking it into the vacuum's internal dust bin that usually has a HEPA filter. They use intelligent programming and can vacuum your floors by themselves. Robotic vacuums have sensors that "learn" the layout of your home. These sensors also detect ledges that prevent them from falling down the stairs. They clean carpet and bare floors and minimize the amount of manual vacuuming done by the owner. Some robot vacuum cleaners are controlled remotely and can be programmed to start at a certain time each day automatically. Some models can transition between different types of flooring, such as tile and carpet. First, make sure the room is clear of any obstacles (such as toys, loose cords, socks, etc.) to ensure the robot can move freely. Once vacuuming is complete, the robotic vacuum returns to its docking station, where it recharges the battery, so it's ready for the next cleaning. Some automatically empty the dirt in a receptacle. Robot vacuum cleaners are an excellent choice for those trying to save time cleaning and those with mobility issues. Robot vacuums are not for deep cleaning, and they are not able to vacuum the stairs. You will still need an upright or canister vacuum for certain tasks. Some can also do wet-cleaning, but they are not as effective as a mop.

 Pros:

- Perfect for daily floor maintenance.
- Super convenient, especially for those with busy lifestyles.
- Saves time since it works automatically.
- It can be programmed on a schedule and to clean specific rooms.
- It can run when the owner is not home.
- The compact size makes it easy to store.
- Works on multiple floor types.
- Great for maneuvering under and around furniture.
- It detects dirt levels and goes over the area until it is clean.
- Beneficial to elderly or disabled persons.
- It can be self-charging.
- Some models can automatically empty the debris.
- Has cliff sensors to prevent it from falling down the stairs.
- Many models have HEPA filtration.
- Some are quieter than a standard vacuum cleaner.
- Some can vacuum and wet-clean in one pass.
- The compact size makes it easy to store.

 Cons:

- Low performance on high pile carpets. Works best on bare floors, low pile carpets, and area rugs.
- Most do not have the same power as an upright or canister.
- Not good for cluttered rooms.

- Doesn't work on stairs.
- Debris must be emptied daily (unless you have a model that does this automatically).
- It can be expensive.
- Primarily operate on level floors (some are limited to a 35° slope).
- Slower than vacuuming yourself.
- Since they are battery-operated, the run time is limited to the life of the battery.

### Other Vacuum Features to Consider

- **Bag vs. Bagless**

Bagless vacuums offer the ease of emptying the dust container and occasionally changing the filter. There's no need to purchase replacement bags. You would just need to keep filters on hand. However, if you have allergies, are asthmatic, or have other respiratory issues, bags are best. When emptying the dust cup on bagless machines, dust can fly in the air and become inhaled. The bag does a better job of containing the dust. Change the bag according to the manufacturer's instructions to ensure your vacuum is efficiently picking up dirt, dust, and debris.

- **Corded vs. Cordless**

Cordless vacuums offer the freedom of moving about cord-free. You can whip through the house without getting tangled up in a cord, the cord getting in the way, or having to stop to plug in the vacuum. However, since they are battery-operated, the run time is limited to the life of the battery. This can be a hassle when undertaking larger tasks that require more time. Corded vacuums maintain their power as long as they stay plugged in; however, they are not great in areas where an outlet is not available.

- **Pet vs. Regular Vacuum**

Pet vacuums are superior in their ability to handle hair, dander, and other allergens. They often have higher suction than regular vacuums and a better filtration system. Even if you do not own a pet, the higher performance of a pet vacuum may be worth having for your household.

### Helpful Tools to Make Vacuuming More Effective

Many vacuums come with great accessories that make our vacuuming tasks more efficient. If they did not come with your vacuum, some items could be purchased separately. Check the instruction manual to see which tools are compatible with your machine.

- **Crevice tool**—Used for getting into tight corners and edges.
- **Soft brush tool**—Used for removing dust from curtains and upholstery. Also known as a dusting/upholstery brush.
- **Extension tools**—Used for reaching high places and other hard to reach places such as underneath and behind furniture.
- **HEPA filter**—This is a high-level filter that filters out dust mite droppings, pollen, and other microscopic allergens. HEPA stands for high-efficient particulate air. This is especially great for persons with allergies, asthma, or other respiratory issues. Some machines come with HEPA filters, or you may opt to purchase one for your machine. Follow the manufacturer's recommendations for the type compatible with your vacuum and the installation instructions.

## Steps for Effective Vacuuming

While you might think that vacuuming is just merely plugging the cord into an electrical outlet and running the vacuum over your carpet, you can take important steps to ensure you are effectively removing the dust, allergens, dander, and germs.

### Before you Vacuum

1. **Get to know your vacuum.** Before using your vacuum, read the instruction manual to learn how to operate your machine. Be sure to carefully follow instructions to avoid injury and to ensure you are getting the most out of your vacuum.
2. **Prep your vacuum for the task at hand.** Inspect the filter. Follow the manufacturer's instructions to clean or replace if needed. A dirty filter will severely limit the vacuum's suction and can cause it to overheat. Inspect the vacuum for hair or objects in the brush that would impede your vacuum cleaner from functioning properly. If applicable, check the vacuum belt for wear and follow the manufacturer's instructions to change it. Empty the bag or dirt cup if it is more than half full. A full dirt cup decreases the performance of your vacuum. Adjust the height settings according to the type of floor (i.e., carpet, rug, or bare floor) to ensure your vacuum is on the best setting to pick up the most particles and to protect the floor from damage. Some vacuums automatically adjust the setting.
3. **Prep the room for vacuuming.** Dust before vacuuming to prevent dust from falling on your freshly vacuumed floor. Clear the floor of any objects. Make sure the floor is dry. Pretreat the carpet with baking soda. (Optional)

### Get Your Vacuuming On!—Vacuuming the Carpet

1. Decide which direction you are going to vacuum first. You can vacuum north to south and south to north and follow it up by vacuuming east to west and west to east or vice versa. Vacuuming in both directions will help yield the best results.
2. It is essential not to move too quickly. Give the suction time to do its job. Starting at the furthest end of the room, vacuum in a straight line, forming a row in the carpet, from one wall to the other. The first pass of the vacuum should be against the natural direction of the nap of the carpet. The nap is the visible, raised surface of the carpet. It is the part of the carpet that you feel under your feet. It may be comprised of yarns in a loop or yarns that are cut in a particular direction. Going against the natural direction of the nap makes the carpet look like you are distorting the carpet yarns. This also loosens the dirt and debris in the carpet.
3. Next, pull the vacuum back over the row you just made in the carpet. This will smooth out the carpet yarns. Also, the second pass of the vacuum picks up the dirt and debris that was loosened in the first pass of the vacuum.
4. Form another row directly next to the one you just completed. The new row should slightly overlap the previous one. Just as was previously done, vacuum in a straight line, from one wall to the other. Then, pull the vacuum back over this row. Continue in this fashion, forming rows until you reach the other end of the room where you began.
5. After completing the entire room (i.e., from north to south), repeat the above process to form rows in the opposite direction (i.e., from east to west). This will ensure that you are picking up the maximum amount of dirt from the carpet. Don't forget to vacuum under the furniture. Lastly, use the crevice tool to vacuum corners and edges.

Note: Once your vacuuming task is complete, empty the bag or dust cup if it is more than half full and clean or replace the filter if needed. This will make for easier vacuuming the next

time. Store your vacuum, cleaners, and any attachments safely away in their designated areas.

### **Vacuuming Bare Floors**

NOTE: Since a bare floor has no yarns and fibers that trap in dirt, the process is different. To vacuum bare floors, we will work from one side of the room and move from right to left and left to right, using short strokes, going back and forth (up and down).

Remember, it is essential not to move too quickly. Give the suction time to do its job. Starting at the farthest end of the room, work the vacuum in short strokes, back and forth, while moving across the floor, toward the opposite wall.

Once you reach the opposite wall, repeat the above step, vacuuming just below the area you just completed, working your way back to the opposite wall. Continue in this manner until the entire floor is complete.

### **How Often Should You Vacuum?**

In general, vacuuming should be part of your weekly cleaning routine. Do not wait until the carpet is visibly dirty to vacuum. By then, it is full of all manner of filth. High traffic areas require more frequent vacuuming. Vacuum dry spills from crumbs or debris immediately. If you have small children, crumbs and spills are a daily occurrence. So, you may have to whip out that stick vac or handheld vac daily. Or, if you have a robot vacuum cleaner, you can put it on a daily schedule.

### **When Vacuuming Alone Isn't Enough**

After vacuuming, if the carpet still looks visibly dirty, dingy, or smells, it's time to take things to the next level. A deep cleaning is in order with either a carpet shampooer or carpet steamer. You may have this done professionally, or you can do it yourself.

There are carpet cleaners on the market that condition the fibers and remove stains, but many contain hazardous chemicals. Soap or detergent, water and a bit of scrubbing can help to remove stains from your carpet. Just make sure you research the care instructions for your carpet and test the cleaner in an inconspicuous spot to make sure it won't fade the color.

### **More Tips for Efficient Vacuuming**

- ✓ Treat spills right away before they form stains. Adopting a habit of treating carpet spills as they happen makes keeping your carpet clean a lot easier and faster.
- ✓ Freshen and deodorize your carpet with baking soda. Sprinkle baking soda all over the carpet and allow it to sit for about 1-2 hours. The longer it sits, the better. Then, vacuum.
- ✓ Sometimes, you may notice a yarn lifted in the fabric that was pulled up by the vacuum. Use a pair of scissors to trim it down carefully.
- ✓ There is no harm in getting a robot vacuum to assist with your vacuuming tasks. Robovacs get the job done for you. This is especially helpful for people with busy schedules and those who have physical ailments that impede their ability to vacuum. Please note that robot vacuums do not have all the capabilities as your regular vacuum, so you will still have to break out that upright or canister to get certain tasks done.



## Section 7.3 Mopping

Now that we have covered how to sweep and vacuum, we are ready to take our bare floors to the next level of clean. Our swept or vacuumed bare floors are ready to be mopped. This section will equip us with information, tools, and strategies to ensure that we are effectively mopping our floors and not simply moping on our floors.

### Is it Mopping or Moping?

Let's take a moment to analyze the difference. Mopping is the act of wiping a floor or other surface clean using a mop. Conversely, moping is wandering around aimlessly. Arguably, this analysis may sound a bit silly, but consider this: If dirt, germs, and debris remain on the floor after mopping, was the goal and aim of cleaning the floor achieved? The answer is no. Therefore, in effect, moping occurred rather than mopping. Effective mopping rests in using the right tools and applying the right methods to get the job done.

### Tools of the Trade

To mop, you will need to have the following items on hand:

- ✓ Floor cleaner
- ✓ Mop
- ✓ Bucket

Now that the obvious has been stated, let's explore what may not be so obvious. Just grabbing any floor cleaner, mop, and bucket may not yield the best results. There are many varieties available for each tool, and each variety performs in different ways. The next few sections will arm us with the knowledge of how to select the best tools for our mopping jobs.

### Selecting the Floor Cleaner That's Up to the Task

When choosing a floor cleaner, use your floor type as a guide to ensure you are choosing one that will not damage your floors and will effectively get the job done. There are many commercial cleaners available on the market. Among the commercial varieties are healthier alternatives, or you can make your own floor cleaner using everyday household items such as white vinegar, alcohol, essential oils, dish detergent, and water. If you have young children or toddlers who are frequently on the floor, it is especially important to use a healthier alternative. However, these natural solutions should not be relied upon for disinfecting purposes, especially during times of illness or an outbreak.

In the article, *The Smarter Way To Mop Floors*, author Jill Lawrence O'Hara gives the following advice: "Whether you opt for a homemade or commercial cleaner, choose the one that's best for your floor type, and use it *sparingly*." Following is a list of floor types with some suggested cleaners. Be sure to research your floor type to ensure you are using the appropriate cleaner and follow the manufacturer's recommendations for cleaning your type of floor.

- **Hardwood:** If your hardwood floors are sealed with polyurethane, use a solution of mild or pH-neutral soap and water. A solution of one tablespoon of dish soap or ½ cup of castile soap in 3 gallons of warm water works well. Never use natural or commercial cleaning products with acidic additives, which can be damaging over time. Never use oils, vinegar, ammonia, or just plain water as these are not effective cleaners for

hardwood and will leave a residue. If your hardwood floors are waxed, use a damp mop only once a week to prevent warping.

- **Laminate:** Use water minimally when mopping laminate floors. Do not saturate the mop and wring it out completely. Damp mopping and spot cleaning is best. Never use commercial floor cleaners with polish. Mix 1 teaspoon of clear, mild dish soap or 2½ tablespoons castile soap to one gallon of hot water. After mopping the entire floor with a damp mop, go over it again with a mop dampened with water only and dry immediately.
- **Vinyl:** You can easily mop this type of floor with castile soap and water. Mix ½ cup of castile soap with 3 gallons of water. After mopping, go over it again with a mop dampened with water only. Another option is a solution of apple cider vinegar and water. Combine one cup of apple cider vinegar with a gallon of hot water and use a damp mop to clean the floor. After mopping the entire floor, go over it again with a mop dampened with water only.
- **Linoleum:** A simple solution of soap and water does the trick for this floor. Place ¼ teaspoon of dish soap or two teaspoons of castile soap in a spray bottle with 1 quart of hot water and spritz the surface section by section. Then, mop. Another option is to place two teaspoons of dish soap or 1/3 cup of castile soap in a bucket with 2 gallons of hot water. Dampen a mop with the solution to clean the floor. Lastly, go over the floor with a mop dampened with clean water only.
- **Stone tile:** Use a pH-neutral, non-chelating (non-acidic) cleaner that won't eat away at the surface of the stone and cause them to appear dull. Skip bleach, ammonia, lemon, and vinegar, as even small amounts could damage the seal on stone tile floors and discolor the grout. Instead, place two teaspoons of mild dish soap or 1/3 cup of castile soap in a bucket with 2 gallons of warm water. Mop the floor, then go over the floor with a mop dampened with clean water. Last, use a soft cloth to dry the floor.
- **Ceramic tile:** To mop your ceramic tile, place two teaspoons of mild dish soap or 1/3 cup of castile soap in a bucket with 2 gallons of warm water. Mop the floor using a flat mop. Then go over the floor with a mop dampened with clean water. To clean **porcelain tile**, mix white vinegar and water to create an effective, odor-eliminating, non-toxic cleanser. This non-toxic cleaning solution is especially great for households with children. To make your solution, mix ½ cup of vinegar to one gallon of water. Lastly, go over the floor with a mop dampened with clean water only.

Keep in mind that when it comes to the amount of cleaner to use when mopping, less is more. Just because you have more suds does not mean that your floors will be cleaner. Too many suds can leave a residue.

### **Finding the Top Mop**

Mops come in various shapes and sizes and in different materials that offer many uses. The following are a few types of mops to consider for your mopping jobs.

- **String mops** are the old school mops with a mophead comprised of several absorbent strings attached to a handle. The mophead is removable for cleaning. String mops are used with a mop bucket and a wringer. They are heavier than other mop types and hold a lot of water. As a result, it is a must to wring them out thoroughly before mopping. They are also useful for cleaning up large spills. Janitorial services use industrial size string mops at office buildings, schools, restaurants, etc. There are smaller varieties that have the wringer built in the mophead or can be wrung out by hand. Be sure to use gloves when using your hands to wring out the mop.
- **Sponge mops** are just as described. The head of the mop is a large sponge. There is also a mechanism on the mop handle that allows you to wring out the sponge. Sponge mops hold less water than string mops, so they work better on hardwood or laminate floors. Sponge mops also manage uneven surfaces well, so they are also great for stone or tile. Despite these wonderful qualities, they are not the best at managing edges and corners.
- **Microfiber mops** contain a mophead made of microfiber. Some are heavy-duty and made in the style of an industrial string mop, and others are more lightweight like the sponge mop. In the article, “10 Cleaning Myths and What to Do Instead,” posted on [www.consumerreports.org](http://www.consumerreports.org), the author states, “Industrial-style string mops may look impressive, but studies have shown that microfiber mops are about 20 percent more effective at removing dirt and bacteria,” Christian says. “String mops are very absorbent, so they’re great at cleaning up big spills,” he says, “but if you want to make sure you’re not leaving anything behind on the floor, use a microfiber mop.” (Farrell, M., July 06, 2018, *10 Cleaning Myths and What to Do Instead*.)
- **Strip mops** contain a mophead comprised of strips of microfiber cloth. Some are treated with chemicals to make them antibacterial. The mop handle contains a mechanism that the mophead is squeezed through to wring it out. Some varieties have a removable mophead that is machine washable. This makes them probably the most convenient to maintain. Machine washable mopheads should be laundered at least once per month. Strip mops make cleaning corners and edges a breeze. Strip mops tend to hold more water than the others, so they may not be the best choice for hardwood. Otherwise, they work well for most floor types.
- **All-in-one mops** contain a mophead with a detachable cleaning pad. Cleaning pads come in varieties that are machine washable and reusable, or disposable. All-in-one mops have a small tank that holds floor cleaner. The cleaner is transferred to the floor by pressing a lever on the handle. This eliminates the need for a bucket. All-in-one mops are very convenient for quick clean-ups but not for deep cleaning.

Because of the varied uses for each type of mop, it is quite common for households to use more than one type. Also, for hygienic reasons, do not use the same mop in the bathroom that you use in the kitchen.

### **Choosing from the Bucket List**

After choosing your top mop, you need a good bucket. A bucket is the mop’s companion. Therefore, choose a bucket that works best with the type of mophead you’re using. Plastic

buckets are best because chemicals may interact with metal buckets. **Circular buckets** are the ones we commonly think of and are frequently used with string mops. Some have a wringer mechanism built-in, so you do not have to wring out the mop with your hands. **Square or rectangular-shaped buckets** work best with rectangular shaped mops. Among both shapes, some varieties come with two compartments, where you can place the cleaning solution on one side and clean water on the other side for rinsing. If you are not using a **dual compartment bucket**, you may want to consider using two buckets—one for cleaning and one for rinsing. Some varieties also come with wheels. This permits you to easily roll the bucket with you as you clean without having to lift it.

### Storing Your Mopping Tools

Now that all the needed mopping tools are on deck, they will need an appropriate place to be stored in your home. Designate an area where your mop can be hung. You can place a drip tray or bucket underneath to catch the water as the mop dries. Although it may seem convenient to store a wet mop in a bucket, this moist bucket becomes a breeding ground for the growth of mold, mildew, and bacteria. The result is a nasty, stinky mop.

As previously mentioned in Chapter 4, you may store the appropriate cleaning products in a bucket and label it according to the room you will use it to clean. This will allow for a smooth transition as you move from room to room. It will also allow you to easily delegate the task of safely cleaning because those assisting you will have all the proper supplies to complete the job. Store the bucket in a designated cabinet or other area, preferably in or near the room you will use to clean. Do not place the mop in a cabinet or closet while it is wet. This will set the stage for the growth of mold and mildew.

### Steps for Effective Mopping

Without any further ado, let's mop!

#### Before you Mop

1. **Get geared up.** Put on your cleaning clothes and other personal protective equipment (PPE).
2. **Prep the room to be mopped.** Clear the area of any items or furniture, such as kitchen chairs or stools that would prevent you from cleaning the floor. Sweep or vacuum the floor. Otherwise, the mop will simply swish, swipe, smear, and spread dust, dirt, grit, hair, and other debris throughout the floor. Mopping over gritty, solid debris can also produce scratches on the floor. Be sure to alert the members of the household, so they are aware not to enter the room while you are mopping.
3. **Grab your mopping tools.** Prepare the appropriate cleaning solution according to the instructions on the product label or for your homemade cleaner. Remember, less is more. Too much cleaner can leave a film behind, which makes your floors look dull and is a dirt and grime magnet.

#### Mop it up!

1. Submerge the mop in the bucket so that the cleaning solution reaches the top of the mophead. Wait a moment to permit the mop to become saturated with the cleaner. Wring out excess water so the mop is damp rather than dripping wet. Too much water can block the mop's ability to lift dirt from the floor, leak into cracks and baseboards, causing damage, and leave unsightly streaks on the floor once it dries. Keep the bucket in an area of the floor that has not been mopped.

2. Hold the mop with one hand near the top and place the other hand near the middle. Begin working in the corner furthest from the doorway (or where you enter the room) and work your way toward the entrance. Starting in the corner, mop the room, moving from one side of the room to the other, going back and forth in a large S pattern until you reach the entrance of the room. This will ensure that you don't walk over the area that you just mopped.
3. For hardwood floors, mop using quick back and forth strokes in the direction of the grain of the wood. Floors with a more textured surface (such as vinyl or tile) should be mopped using a short, figure-eight pattern. Make at least two passes over each area, or more if needed. Mop following this pattern, as you move across the floor, from one side of the room to the other.
4. Apply greater pressure in areas with stubborn dirt. Have a cloth or sponge and some cleaner handy to scrub away any stuck-on dirt or stains that the mop is unable to grab after a few passes. Also, use the cloth or sponge to wipe in tight corners where the mop may not reach.
5. Mop along the edge of baseboards, but be careful not to hit up against them.
6. After several passes of the mop, dip it back in the solution, wring it out well, and continue. Beware of troubled waters in your bucket. If the cleaning solution becomes murky, take a quick moment to discard it and replenish the bucket with fresh cleaning solution. Then, continue mopping.  
NOTE: Dirty mop water should be flushed down the toilet and not poured down the kitchen or bathroom sink. This will spread germs and can produce clogs in the sink.
7. Once you have gone over the entire floor with a cleaning solution, mop the floor again using fresh, clean water to rinse away the solution.
8. Once complete, let the floor air dry. Or, depending on the recommendations for the type of flooring, you may need to go over the floor with a clean, dry cloth or clean, dry mop to dry it. Make sure no one enters the room while the floor is drying.  
NOTE: If you are mopping a large floor, divide the floor into four sections and complete the above steps for each section.

### After you Mop

First, discard the mop water by flushing it down the toilet. Thoroughly rinse out the bucket by filling it with clean water and flushing the water down the toilet. Repeat until the water rinses clear.

Now, disinfect your mop. First, rinse the mop thoroughly either in a bucket of hot water or in a utility sink if available. Then, fill the bucket with 2 gallons of hot water and  $\frac{3}{4}$  cup of bleach or use the disinfectant of your choice. Place the mophead in the solution and let it sit for 10 minutes. Then, rinse with clean water. Wring out as much moisture from your mop as you can, then hang the mop to dry. Put away cleaning products in their designated area. Put away your mop once it is dry. Enjoy your clean and pristine floor!

### **How Often Should You Mop?**

Mop up spills immediately. In general, mop high traffic areas at least once weekly (i.e., kitchens, bathrooms, entryways, etc.) Touch up these areas in between cleanings using an all-in-one mop. Mop low traffic areas at least once every two weeks, provided you sweep or vacuum them weekly.





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## Chapter 8: How to Sanitize

As we have read, daily cleaning is necessary to maintain a healthy, safe, and comfortable home environment. But remember, while cleaning removes visible dirt and some germs from the surface, cleaning alone will not kill the viruses and bacteria that can lead to illness. So, after you declutter, dust, and give the area a thorough cleaning, if you want to kill those remaining nasty germs, sanitizing or disinfecting is a must—but keep in mind there is a difference between the two.

**Sanitizing** involves the use of chemical agents or devices, like a steam cleaner, to reduce the number of harmful bacteria on surfaces to safe levels according to public health standards. Still, it does not kill all viruses and fungi. In foodservice, the Environmental Protection Agency (EPA) guidelines mandate that sanitizers must reduce the bacteria count by 99.999% within 30 seconds. While sanitizing does not totally eliminate all disease-causing microorganisms, it reduces the number of germs to a level that is safe enough for most food preparation areas, like our kitchens, making the environment in our homes healthier to inhabit. **Disinfecting**, on the other hand, involves the use of more potent chemicals to kill nearly all disease-producing germs on surfaces within 10 minutes of contact time. While there are times when disinfecting is necessary, it may leave a potentially dangerous residue. It is crucial to know when to sanitize versus disinfect to avoid unnecessarily exposing your household to harsh chemicals.

The goal of disinfecting is to “kill” nearly all germs, while the goal of sanitizing is to reduce the number of germs to a level considered safe by public health standards. Remember, sanitizing and disinfecting do not clean dirty surfaces nor remove the germs. However, they lower the risk of infection by killing some or all germs on surfaces after cleaning.

### Section 8.1 Decide Where You Need to Sanitize

Sanitizing is best for surfaces where strong chemicals may leave a residue that is harmful to people or food. Sanitizing is often done in kitchens, food preparation areas, on children’s mouthed toys, and more. To prevent the spread of harmful bacteria, sanitize all food-contact surfaces, such as countertops, pots and pans, dishes, cooking and serving utensils, cutting boards, tables, food trays, highchair trays, etc. Sanitizing is also great for small kitchen items (i.e., coffee pots, can openers, hand mixers, etc.) and objects that children come into close contact with and put in their mouths, such as toys, bottles, feeding items, and pacifiers.

### Section 8.2 Choose Your Sanitizing Tools & Products

Sanitizing is done immediately after cleaning. So, before you begin the cleaning job, if you plan to sanitize right after, take stock of what you already have in your home and be sure you have the tools and products needed for sanitizing.

#### Sanitizing Tools

The following are some tools you will need for sanitizing. Please refer to Chapter 4: How to Clean for more details regarding these cleaning tools.

- **Spray bottle**—Spray bottles can be used as a container for your store-bought or homemade sanitizing solutions or to rinse something off with water.

- **Microfiber cleaning cloth**—A microfiber cleaning cloth can be used to apply sanitizers to surfaces and is preferred over other fabric types as it is most effective at cleaning contaminants. These cloths also won't scratch or leave streaks behind.
- **Bucket**—A bucket has multiple uses. They can be used to store sanitizing products, for mopping, or as a container for sanitizing solutions.
- **Protective attire**
  - Rubber gloves protect your hands from chemicals and diseases. When sanitizing, gloves are considered part of your personal protective equipment (PPE). Read all cleaning product labels carefully to verify if manufacturers recommend the use of gloves for that particular product.
  - Wearing specific clothes for cleaning will help to protect you and your nice clothing from being ruined by chemicals and stains. Attire, such as long sleeves and long pants, will protect the skin from harsh chemicals.
  - Goggles or eye protection are helpful when using chemicals that may splash and get into your eyes or cause irritation from the fumes.
- **Dishwasher**—Dishwashers with a sanitize cycle wash the dishes and utensils for an extended time at a very high temperature to kill bacteria.

### Sanitizing Products

Sanitizing is done using either heat or products with chemicals (either natural or lab-made chemicals). In Chapter 4, we discussed several different chemical-based products used for cleaning. Some of these products are sanitizers. The M.G.T. will now become “sanitizing scientists” as we explore some of the chemical sanitizers that you may choose to use in your home. For each chemical sanitizer, we will list the active ingredient. An active ingredient is biologically active, which means it affects living matter. The Environmental Protection Agency (EPA) notes that manufacturers are not required to list all ingredients on their product labels. Government regulations only require the labels on cleaning products to list the active ingredients in cleaning products such as disinfectants, sanitizers, and fungicides that kill viruses, mold, and bacteria.

Before using any of these chemicals, be sure to read the product label to verify the surfaces that are safe to sanitize. For example, if you plan to sanitize your granite countertops, be sure the chemicals will not damage the granite. Most sanitizers sold in stores are chemical-based. They are classified as pesticides by the Environmental Protection Agency (EPA) because they kill pests such as disease-causing microorganisms. When choosing chemical sanitizers for your home, you should refer to the guidelines and recommendations provided by the Environmental Protection Agency (EPA). The following are some possible choices for sanitizing products. Choose the product or method that best suits the needs of your household.

- **Heat**—Heating is one of the oldest and most common forms of getting rid of dangerous microorganisms. Cooking and canning use heat to kill potentially harmful bacteria. Heat kills microbes by altering their cell membranes and breaking down their protein. Moist-heat (like steam and hot water) is typically more effective than dry heat because moisture is better at transferring heat through the cell wall, causing irreversible damage to the cells and destroying the microorganisms. Both steam and very hot water can effectively sanitize surfaces.

Devices that reach high heat levels and produce steam, such as steam cleaners and dishwashers, can be used to sanitize in the home. This process is only effective if the heating device has the appropriate temperature and is used for the recommended amount of time. In restaurants, dishwashers and very hot water are two of the most commonly used methods to sanitize dishes and utensils. According to the Centers for Disease Control (CDC), the sanitizing device must reach temperatures between 167° to 212° Fahrenheit to kill the influenza virus. These temperatures are extremely hot, so be sure to exercise caution when using hot water, steam, or any heat-producing machine to sanitize. In most cases, surfaces must be exposed to the heat source for at least 30 seconds to sanitize properly. Because heat-related sanitizing products vary, always follow the manufacturer's directions for your particular product to determine the correct temperature and contact time needed for sanitizing.

- **Chlorine bleach**—This common household product is an effective sanitizer for your home when safely used. The active ingredient in chlorine bleach is sodium hypochlorite. Common household bleach is usually either 5.25 percent (regular strength) or 6 percent sodium hypochlorite (ultra strength). Chlorine bleach diluted with water at a lower concentration makes it an effective sanitizer. Higher concentrations of chlorine bleach and water can serve as a disinfectant. When using chlorine bleach, be sure to refer to the manufacturer's and the Environmental Protection Agency (EPA) guidelines and exercise safety precautions to avoid any health hazard. We will refer to chlorine bleach as bleach for the remainder of this document.

### **Dilute it Before You Use It**

Bleach must be diluted with water before using it. Whether you are cleaning, sanitizing, or disinfecting, never pour bleach straight out of the bottle onto a surface. Have you ever seen a white residue left on a surface after using bleach? The white residue (mainly salt) is the result of using undiluted bleach or not diluting it properly and not rinsing it thoroughly. Bleach is mainly composed of sodium hypochlorite and water, which breaks down into salt (95-98%), water, and other substances. In addition to the unsightly residue, undiluted bleach can react with other substances and release a toxic gas. Therefore, proper dilution of bleach is vital. When mixing bleach with water, it is best to add bleach to water (rather than adding water to bleach). Using this method reduces fumes and prevents splashing. The Clorox company indicates that for household cleaning and disinfecting (or in this case sanitizing), bleach can be used in cold, warm or hot water.

Bleach has varying strengths. Before making your sanitizing solution, check the label to determine the strength of your bleach. According to the American Chemistry Council, "Common household laundry bleach, used to whiten and disinfect laundry, is typically either 5.25 percent ("regular strength") or 6 percent sodium hypochlorite ("ultra-strength")." Germicidal bleach that is used by hospitals and professional cleaning companies is often 8.25%.

Remember, sanitizing is often done in food preparation areas and on objects that should not contact dangerous chemicals, such as children's toys and feeding items. Therefore, when diluting bleach to make a sanitizer, it is used at a lower concentration than when diluting it to make a disinfectant. This lower concentration helps to avoid leaving a residue on surfaces that can be harmful to people and contaminate the food

prepared on those surfaces. According to William McGlynn, a Horticultural Processing Specialist at Oklahoma State University,

*“The germ-killing effect in a solution of chlorine bleach and water is due to available chlorine, present as hypochlorite and hypochlorous acid. Federal regulations (21 CFR Part 178) permit the use of sanitizing solutions containing sodium hypochlorite on food processing equipment and food contact articles with the following provisions:*

- *Equipment or articles sanitized with the solution must be allowed to drain adequately before contact with food.*
- *Solutions used for sanitizing equipment shall not exceed 200 parts per million (ppm) available chlorine.”*

Table 1 – Amount of chlorine bleach per gallon of water for a given chlorine concentration<sup>1</sup>

<i>Amount of chlorine bleach per gallon of water</i>	<i>Approximate concentration of total chlorine<sup>2</sup> (ppm)<sup>3</sup></i>
<b>1 teaspoon</b>	<b>65</b>
<b>1 tablespoon</b>	<b>200</b>
<b>1 fluid ounce</b>	<b>400</b>
<b>1/4 cup</b>	<b>800</b>
<b>1/2 cup</b>	<b>1600</b>
<b>2/3 cup</b>	<b>2200</b>
<b>3/4 cup</b>	<b>2400</b>
<b>1 cup</b>	<b>3200</b>

1. Assuming 5.25% sodium hypochlorite in chlorine bleach.

2. Typically present as both hypochlorous acid and hypochlorite ion.

3. ppm = parts per million.

The above table shows that according to federal regulations, the *maximum* amount of household bleach used for sanitizing food-contact surfaces is one tablespoon of bleach per one gallon of water. Do not exceed this *maximum* when creating a sanitizing solution for your home. Less bleach is also effective. To safely dilute bleach for use as a sanitizer, refer to the manufacturer’s instructions on the product label as well as recommendations provided by the Environmental Protection Agency (EPA) and the CDC. Below is useful information for using bleach as a sanitizer.

For items used for eating (like dishes and utensils), infant feeding items and toys that children will put in their mouths:

To sanitize with bleach and **one gallon** of water:

- For bleach strength of 5.25-6.25% (regular and ultra-strength bleach), use one gallon of water and two teaspoons of unscented bleach.
- For bleach strength of 8.25% (germicidal bleach), use one gallon of water and one teaspoon of unscented bleach.
- The bleach solution should remain on the surface for at least two minutes.
- Allow the bleach solution to drain and air dry. Do not rinse.

To sanitize with bleach using **one quart** of water:

- For bleach strength of 5.25-6.25% (regular and ultra-strength bleach), use one quart of water and ½ teaspoon of unscented bleach.
- For bleach strength of 8.25% (germicidal bleach), use one quart of water and ¼ teaspoon of unscented bleach.

- The bleach solution should remain on the surface for at least two minutes.
- Allow the bleach solution to drain and air dry. Do not rinse.

For food preparation surfaces like kitchen counters and stovetops:

To sanitize with bleach and **one gallon** of water:

- For bleach strength of 5.25-6.25% (regular and ultra-strength bleach), use one gallon of water and one tablespoon of unscented bleach.
- For bleach strength of 8.25% (germicidal bleach), use one gallon of water and 1 ½ teaspoon of unscented bleach.
- The bleach solution should remain on the surface for at least two minutes.
- Allow the bleach solution to drain and air dry. Do not rinse.

To sanitize with bleach using **one quart** of water:

- For bleach strength of 5.25-6.25% (regular and ultra-strength bleach), use one quart of water and ¾ teaspoon of unscented bleach.
- For bleach strength of 8.25% (germicidal bleach), use one quart of water and 3/8 teaspoon of unscented bleach.
- The bleach solution should remain on the surface for at least two minutes.
- Allow the bleach solution to drain and air dry. Do not rinse.

When applying the bleach solution to a surface, be sure to use enough sanitizing solution, so the surface remains wet for at least two minutes before it dries. The sanitizing bleach solution should air dry on the surface; do not rinse the solution. When sanitizing with a bleach solution, the active ingredient, sodium hypochlorite, is minimal enough for safe use and will not cause any harm. So, to preserve the health of your family, your beautiful sealed granite countertops, and freshly cleaned stainless-steel stove, it is crucial to use the correct concentration of the bleach sanitizing solution.

### **Chlorine Bleach Has a Shelf Life**

Before making your bleach sanitizing solution, consider how much you plan on using and only make what you will need. Why? Because bleach rapidly degrades in the presence of light and when mixed with water. Diluted bleach solutions should be used within 24 hours and then discarded, as its sanitizing ability fades with time. Do not store diluted bleach solutions for long-term use because the solution will lose its potency and will not be effective in killing germs. Bleach solutions should be stored in opaque containers (just like the store-bought container it comes in) and discarded after 24 hours.

So how long does a bottle of bleach last? Well first, let's be clear—even unused, unopened bleach can expire. Chemically speaking, liquid bleach starts as mainly salt water, and over time it slowly degrades back into salt water. When you are sanitizing with bleach, you desire to deactivate or “kill” some nasty germs. So, you want to make sure you're not just using bleach that has turned back into mainly salt and water. Bleach loses its potency, and therefore its ability to sanitize, over time and through exposure to heat and light. Most bleach products purchased from stores start to break down after six months, although the product may not have officially expired yet. Bleach begins to degrade and continues to deteriorate under the following conditions: unopened on a shelf after one year, if stored in direct sunlight, or at temperatures

above 77°F. Even in its original bottle, bleach becomes 20 percent less effective as each year goes by. Bleach cannot sanitize properly once its potency is lost, and you need to dispose of it properly. Follow the manufacturer's instructions for properly discarding bleach, which is usually done by diluting the remaining bleach with a large amount of water before pouring down the sink drain or toilet.

The Clorox Company's website explains how to check if your bleach has expired by looking for a 7-digit code printed on the bottle. This code IS NOT the expiration date, but it contains the information you need to *calculate* the expiration date. Let's take a look at the example provided by Michigan State University's Center for Ingredient Research. Printed on the bottle of bleach pictured below is the code E619337. We need to break this code into three parts, starting from left to right.



The first two characters **E6**, indicate the facility where the company manufactured the bleach. The second two numbers **19**, indicate the year the company manufactured the bleach. The last three numbers **337**, indicate the manufactured day of the year. Therefore, code **E619337** tells us this bottle of bleach was made at facility **E6** in **2019** on the **337th** day of the year, which was December 3, 2019. The expiration is one year from **December 3, 2019**, so it must be used or disposed of by **December 2, 2020**.

### **Bleach Corrodes**

Simply put, bleach is corrosive. Bleach causes a chemical reaction that can visibly destroy or irreversibly alter living tissues in plants, animals, and humans. Corrosive chemicals can burn when contacting the skin, eyes, nose, and throat. It is vital to use and dilute bleach appropriately to minimize exposure. And always wash your hands after cleaning or sanitizing with bleach.

Bleach also causes a chemical reaction that will slowly break down and corrode metal, stone, and other materials. Bleach should not be used on silver, non-stainless steel, aluminum, or chipped enamel. Refer to the manufacturer's instructions to determine what surfaces are safe to use a bleach solution.

It is also best to mix your bleach solution in a plastic bucket or bowl, rather than in a spray bottle. Sodium hypochlorite, the active ingredient in regular Clorox bleach, reacts with the metal parts in an ordinary spray bottle. As the bleach sits in the bottle, it causes the metal in the spraying mechanism to rust. So, the next time you pick up your homemade spray bottle with bleach, you might end up spraying out a rusty bleach solution, which is a far cry from cleaning and sanitizing. If you prefer a sprayer, consider purchasing a bleach solution that is prepackaged and sold in spray bottles that will not corrode or rust.

### **Hazards of Bleach**

Sodium hypochlorite, the active ingredient in household bleach, is a hazardous chemical. In addition to being corrosive, bleach is a respiratory irritant, which means it can cause inflammation or other harmful reactions in the respiratory system (the lungs, nose, mouth, larynx, and trachea). The Association of Occupational and Environmental Clinics declared sodium hypochlorite or bleach an asthmagen, which means it can cause asthma. In the workplace, bleach can cause asthma in workers who inhale large amounts (such as cleaning staff), and it can trigger asthma attacks in people with asthma. It can cause minor irritations such as a sore throat, coughing, and nasal irritations. Bleach can also cause skin and eye irritation. If swallowed, the side effects can be severe and even fatal. Therefore, bleach must be used with caution and diluted properly.

**Caution!** Remember the following points when using bleach:

- Ventilate the area to prevent inhaling dangerous fumes.
  - Always dilute concentrated products safely and in the appropriate amount to prevent unnecessarily exposing the members of your household to toxins.
  - Wear personal protective equipment such as goggles, rubber gloves, and protective clothing.
  - Never mix bleach with ammonia or vinegar, as this produces a toxic gas.
  - Before using bleach, remember to research if it is safe to use on the desired surface.
- **Hydrogen peroxide**—This is another chemical sanitizer that is great at killing germs and bacteria. The chemical makeup of hydrogen peroxide is similar to water, except it has one extra oxygen atom that allows it to break down quickly and harmlessly.

According to the Centers for Disease Control, hydrogen peroxide has the power to destroy germs and prevent infection by stopping the growth of disease-causing microorganisms. It is useful against many microorganisms, including bacteria, yeasts, viruses, fungi, and spores. According to the CDC, a 0.5% solution of accelerated hydrogen peroxide was able to destroy bacteria and viruses in one minute and mycobacteria and fungi in five minutes. Accelerated hydrogen peroxide is a patented blend of ingredients combined with low levels of hydrogen peroxide. This patented formula dramatically increases the ability of hydrogen peroxide to both clean and destroy germs. Accelerated hydrogen peroxide is used most in healthcare environments and laboratories.

The hydrogen peroxide available on store shelves is typically a regular, 3% hydrogen peroxide. Although not as germicidal as the hospital grade accelerated hydrogen peroxide, the store-bought variety has strength in its own right. The CDC reported, *“Other studies demonstrated the antiviral activity of hydrogen peroxide against rhinovirus. The time required for inactivating three serotypes of rhinovirus using a 3% hydrogen peroxide solution was 6–8 minutes.”* They also reported that when using three percent hydrogen peroxide on inanimate surfaces, it can be a “stable and effective disinfectant.” Also, the rhinovirus is harder to destroy than the coronavirus. So, in theory, 3% hydrogen peroxide should be able to “kill” the coronavirus. When using hydrogen peroxide to sanitize, you can use 3% undiluted hydrogen peroxide that is commercially available in many stores. There are two ways to sanitize with hydrogen peroxide.

**Hydrogen Peroxide Sanitation Method #1 (Heated).** Pour the undiluted hydrogen peroxide into a pot and warm it to 150 degrees Fahrenheit. Pour the warmed solution into a spray bottle. Immediately spray it onto a surface and let it sit for at least one minute. The warmed hydrogen peroxide is highly effective as a sanitizer at 130 degrees Fahrenheit. Therefore, after it is warmed, you should quickly apply it to the surface before it cools to below 130 degrees. After one minute, allow the surface to air dry or wipe clean. The heated peroxide will kill listeria monocytogenes, E. coli, and salmonella bacteria.

**Hydrogen Peroxide Sanitation Method #2 (Room Temperature).** If warming the hydrogen peroxide is not an option, you can use 3% undiluted hydrogen peroxide at room temperature. After spraying it on a surface, it must sit for 10 minutes to work as a sanitizer. After 10 minutes, allow the surface to air dry or wipe clean. Keep in mind that room temperature hydrogen peroxide is not as effective as heated peroxide (130 degrees.) The heated hydrogen peroxide will kill listeria monocytogenes, E. coli, and salmonella bacteria, while the room temperature peroxide will only kill E. coli and salmonella.

Before using peroxide, remember to research if it is safe to use hydrogen peroxide on the desired surface. Hydrogen peroxide is not corrosive, so it is safe to use on metal surfaces, glass, most countertops, and plastic. Be careful when using it on some stone surfaces, such as granite or marble. The slight acidity of hydrogen peroxide can break down the finish of these surfaces over time. While it may be used occasionally, regular use may dull the polish, etch and destroy the granite sealer. Also, like bleach, hydrogen peroxide can discolor your clothes and other fabrics.

Hydrogen peroxide is safe when used alone, but never combine it with other chemicals such as bleach or vinegar. Mixing hydrogen peroxide and vinegar produces peracetic acid, a chemical that can cause skin and eye irritation. When using the two products separately, the surface must be completely dry of hydrogen peroxide before applying vinegar.

- **White vinegar**— While most of us don’t think of vinegar as a chemical, 5% undiluted vinegar is another common household product used to sanitize. As previously mentioned, never mix hydrogen peroxide and vinegar. Also, before using vinegar, remember to research if it is safe to use on the desired surface.



**White Vinegar Sanitation Method #1 (Heated).** Pour the undiluted 5% white vinegar into a pot and warm it to 150 degrees Fahrenheit. Pour the warmed solution into a spray bottle. Immediately spray it onto a surface and let it sit for at least one minute. The warmed vinegar is effective as a sanitizer at 130 degrees Fahrenheit. Therefore, after heating it, you should quickly apply it to the surface before it cools to below 130 degrees. After one minute, allow the surface to air dry or wipe clean. The heated vinegar will kill listeria monocytogenes, E. coli, and salmonella.

**White Vinegar Sanitation Method #2 (Room Temperature).** If warming the vinegar is not an option, you can use 5% undiluted vinegar at room temperature. After spraying it on a surface, it must sit for 10 minutes to work as a sanitizer. Note that even after sitting on the surface for 10 minutes, room temperature vinegar is not as effective as warmed vinegar. While vinegar heated to 150 degrees will kill listeria monocytogenes, E. coli, and salmonella, room temperature vinegar will only kill the salmonella bacteria but not the other two. After 10 minutes, allow the surface to air dry or wipe clean.

- **Commercial Sanitizers**

In addition to the previously mentioned sanitizing solutions, you can also purchase sanitizing products. Restaurants, school cafeterias, and daycare centers use commercial sanitizers on certain surfaces to prevent exposure to harsher chemicals found in disinfectants. Some primary chemicals found in most commercial sanitizers include: chlorine, quaternary ammonium compounds, and iodine. For a safer choice, consider choosing a sanitizer with citric acid, caprylic acid, hydrogen peroxide, L-lactic acid, thymol, or ethanol as the active ingredient. These sanitizers are available as ready to use solutions in spray bottles or as concentrated solutions that must be diluted with water. Follow the dilution instructions on the label. Remember to research if this product is safe to use on the desired surface. So, sanitizing scientists, let's take a look at some of the commercial chemicals available to help you combat germs in the home.

1. **Chlorine** is the most commonly used chemical in commercial sanitizers, such as chlorine bleach, because it is highly effective and relatively inexpensive. Some typical chlorine compounds are liquid chlorine, hypochlorites, inorganic chloramines, and organic chloramines. These are all different types of chlorine-based germicides, but they all work to attack the cell membranes of the germs, breakdown the cellular proteins, and stop the cell from growing. If you purchase a chlorine-based sanitizer, follow the instructions to determine how to use your product as a sanitizer. Also, refer to the section titled, "Hazards of Bleach" to understand its hazards. For more detailed information, read Chapter 11: The Hazards of Cleaning Products.
2. **Quaternary ammonium compounds**, also known as Quats or QACs, are positively charged ions. These positively charged ions are naturally attracted to negatively charged materials, such as the proteins found in bacteria, molds yeasts, and viruses. Quats/QACs are surfactants and possess some detergency, which means that unlike most sanitizers, Quats have some cleaning power. Because they have a detergent quality, Quats can work on

surfaces that are lightly soiled, unlike most other sanitizers, where the surface must be thoroughly cleaned before sanitizing. If it's advertised as "anti-microbial," it most likely has Quats. Quats are found in hand soaps, dishwashing liquids, all-purpose cleaners, baby products, window cleaners, air fresheners, and other cleaning products.

In their diluted form, Quats are odorless, colorless chemicals that are added to a variety of cleaning, sanitizing, and disinfecting products. These chemicals are very stable, which means that they do not lose their potency for killing germs over time and have the ability to withstand high temperatures. Quats are unlike chlorine, which has a shelf life and starts to break down at higher temperatures. Another advantage of QAC's is that after being applied to a surface, they leave an antimicrobial film helping to thwart off germs even longer. Some Quats, however, do require longer contact time when used as a sanitizer because they can be slow-acting against common bacteria that cause food spoilage.

Although Quats have some benefits, there are also potential hazards that can result from their use. Direct exposure to skin can cause contact dermatitis, which may be as mild as dry red skin or severe as a chemical burn. Like chlorine bleach, Quats can also cause asthma to develop in people with no prior symptoms. This typically occurs in the form of "occupational asthma," where workers develop asthma due to frequent exposure. And like chlorine bleach, Quats can trigger asthma symptoms in people who already have asthma. If Quats splash or a mist gets into the air, eye and mucous membrane injuries can occur. Quats are also dangerous if swallowed and can cause oral and gastrointestinal injuries.

In addition, scientists suspect that Quats may be toxic to the reproductive system and developing fetus. In one research study, female mice exposed to Quats in disinfectants experienced lower fertility and the mice who did conceive had smaller babies. When the disinfectant was changed, these reproductive problems went away.

To find out if a product contains Quats, look for active ingredients that end with "ammonium chloride" such as Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium chloride. If you purchase a Quat based sanitizer, follow the manufacturer's instructions to determine how to use your product safely. Be sure to read the product label to determine if it is safe for food contact surfaces and children's toys. Also, refer to Chapter 11: The Hazards of Cleaning Products for more information.

3. **Iodine**, also known as iodophors, has been used as a sanitizer since at least the 1800s. In commercial kitchens, iodine is used with a surfactant as a carrier. This means that the iodine is usually added to something else, like a detergent or other cleaning agent, to make the compound more potent so that the solution can also kill germs. Iodine sanitizers act against bacteria, viruses, yeasts, molds, fungi, and protozoans. Because iodine sanitizers are costly and they can stain some surfaces, most people would not use iodine as a sanitizer in the home. Be

sure to read the product label to determine if it is safe for food contact surfaces and children's toys.

4. **Citric Acid** is considered a safer choice for sanitizers. Products containing citric acid may range from 0.6% to 8% concentrations and are often used at full strength when disinfecting, which means they are not diluted. According to research reported by the San Francisco Environment Department, citric acid has fewer negative impacts on health and the environment. It has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. Although it does not cause these serious health problems, citric acid may irritate the respiratory system, the eyes or the skin. Citric acid is also safer for the environment with no known aquatic toxicity; therefore, it is not toxic to animals living in water. Citric acid also has a "low persistence," meaning that this chemical does not linger long in the environment. Be sure to read the product label to determine if it is safe for food contact surfaces and children's toys.
5. **Caprylic acid**, also known as octanoic acid, is another safer choice when diluted properly and handled appropriately. When properly diluted, caprylic acid exposure has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. Caprylic acid also has a low level of persistence when exposed to the environment, so it is not a lingering environmental substance. Although the concentrated form of this chemical is highly acidic and may cause damage to the eyes, the state of California specifically recommends the use of caprylic acid in Ecolab's concentrated solution of "Disinfecting Heavy-Duty Bathroom Cleaner." Ecolab's product is sold in packaging that uses specialized dilution equipment, preventing the user from being exposed to the chemical in its concentrated form. When diluted properly using this special equipment, it may only cause moderate eye irritation. Be sure to read the product label to determine if it is safe for food contact surfaces and children's toys.
6. **Hydrogen peroxide** is recommended as a safer sanitizer in products that only have hydrogen peroxide as the active ingredient. If the product contains hydrogen peroxide along with other active ingredients, such as Quats, the product is not considered safe. When used as the only active ingredient, hydrogen peroxide has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. Like caprylic acid, hydrogen peroxide has a low persistence level and does not sustain for long periods of time in the environment. While hydrogen peroxide can be quite dangerous at high concentrations (such as 50%), products purchased from stores containing hydrogen peroxide as the active ingredient have much smaller concentrations (typically 1%-5%). And for those that require dilution, the product has very few health warnings once diluted. Be sure to read the product label to determine if it is safe for food contact surfaces and children's toys.
7. **Lactic acid** is also recommended as a safer choice when it's the only active ingredient. It is often found in concentrations of 0.18% to 7.2% in ready to use formulas, meaning these products do not require dilution. At a concentration of

3.2%, lactic acid products are used in healthcare settings to deactivate viruses and bacteria. Lactic acid has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization, although it may cause moderate eye and skin irritations. Lactic acid also has a low persistence level and has no known environmental risks. Be sure to read the product label to determine if it is safe for food contact surfaces and children's toys.

8. **Silver and citric acid** in combination are considered safer active ingredients in commercial products. Silver has no known toxic effects on humans and no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. These products are often produced in ready to use spray bottles with smaller amounts of silver (i.e., 0.003%) as compared to citric acid (i.e., 4.84%). Sanitizers containing silver are very effective against a wide range of bacteria and viruses, and their sanitizing effects can last up to 24 hours on a treated surface. Because products containing silver are more expensive, they are best used on frequently touched surfaces such as handles, doorknobs, and sink faucets. These products may irritate the respiratory system, skin and eyes, but in general, they are considered safer products. Be sure to read the product label to determine if it is safe for food contact surfaces and children's toys.
9. **Thymol** is considered a safer active ingredient for commercial sanitizers, particularly in its diluted "ready to use form." Thymol has no known associations with cancer or reproductive or developmental toxicity. However, higher concentrations of thymol may cause skin, eye, and respiratory irritation. Highly concentrated thymol may also lead to skin sensitization, which means that a person may experience inflammation or an allergic reaction after skin exposure to a product containing thymol. Thymol has the potential for respiratory sensitization (an allergic reaction in the respiratory system) and is currently listed under category "R," indicating there is not enough research to determine whether or not this chemical is a true asthamgen. Because of the additional research that is needed, the San Francisco Department of Public Health suggests that users may want to avoid the use of thymol in concentrated solutions that require dilution, particularly users with respiratory issues. The Environmental Working Group notes that sanitizing and disinfecting products containing thymol as the active ingredient are still safer alternatives than many others. Be sure to read the product label to determine if it is safe for food contact surfaces and children's toys.
10. **Ethyl alcohol**, also referred to as **ethanol**, is lower in toxicity when compared to other active ingredients in sanitizing and disinfecting products. After studying hundreds of products that could be used against the coronavirus, the Environmental Working Group lists products containing the active ingredient ethanol on its short list of safer sanitizing and disinfecting products. Be sure to choose a product that only contains ethanol as the active ingredient, and not ethanol and Quats (together) as it's not safe. Before using products containing ethanol as the active ingredient, be sure to read the product label to determine if it is safe for food contact surfaces and children's toys.

For more information or to search for safer sanitizing products, visit the Environmental Working Group's website at <https://www.ewg.org/news-and-analysis/2020/03/16-effective-and-safe-products-guard-against-coronavirus>.

## Section 8.3 How to Sanitize Using Sanitizing Solutions

### Before Sanitizing

1. Gather everything you will need for sanitizing.
2. Check to make sure the sanitizing solution is safe to use on the desired surface.
3. If you are making a sanitizing solution, make it according to the manufacturer's instructions or according to the EPA guidelines. Note if the sanitizing solution must be prepared freshly for each use (such as a bleach dilution) or if you can use previously made solutions.
4. Read all labels that contain instructions for safe and effective use of the sanitizing product, including precautions you should take when applying the product.
5. Wear your protective clothing such as clean disposable gloves, long pants, a long-sleeved shirt, and goggles if necessary. Discard disposable gloves after cleaning. If you are using reusable gloves, they should be dedicated to cleaning and sanitation only. After removing your gloves, clean and sanitize them and wash your hands immediately.
6. When sanitizing, make sure the area is properly ventilated—open windows, open doors, etc.

### Sanitizing Surfaces

1. Start with a freshly cleaned surface. Remember, sanitizing must be done immediately after cleaning.
2. Test the sanitizing solution in an inconspicuous area to make sure the sanitizer does not fade, discolor, or damage the surface.
3. Apply sanitizer to the surface for the recommended amount of time. You can apply it using a spray bottle, cloth, or a mop. Be sure to cover the entire surface with the sanitizing solution.
4. Some sanitizing solutions do not require rinsing, and you can simply allow the surface to air dry. If rinsing is required, allow the sanitizing solution to remain on the surface for the recommended contact time before rinsing. Use a spray bottle filled with water or a dampened cloth with clean water to rinse the surface. Then, air dry or wipe clean as directed.

### **Operation Sanitize**

Now that we have learned the order of operations for sanitizing, let's look at how this works.

- **Sanitizing Kitchen Countertop**—To sanitize your kitchen counters, first declutter the counters removing all items from the countertop. Dust and clean the counter, as we learned in previous chapters. Next sanitize. Use one of the following methods or use a sanitation method of your choice:
  1. **Method 1: Chlorine Bleach**—Prepare the bleach solution by placing one gallon of water in a bucket. Add one tablespoon of regular household bleach to the water. Immerse the microfiber cloth into the solution. Wring out the cloth,

leaving it moist, but not dripping wet. Starting where the wall meets the counter, wipe across the countertops from back to front in a slightly overlapping tight S-pattern until you reach the front of the counter. Be sure that every area of the countertop is wet with the sanitizer. The bleach should remain on the surface for at least two minutes. Be sure to apply enough sanitizing solution so that the surface remains wet for at least two minutes before it dries. Allow the solution to air dry on the surface; do not rinse.

2. **Method 2: Hydrogen Peroxide (heated)**—Pour the 3% undiluted hydrogen peroxide into a pot and warm it to 150 degrees Fahrenheit. Pour the warmed solution into a spray bottle. Starting where the wall meets the countertop, immediately spray the hydrogen peroxide onto the surface. Be sure that every area of the countertop is wet with sanitizer. Allow the hydrogen peroxide to sit on the surface for at least one minute. Do not rinse the countertop. Allow the solution to air dry or use a clean, dry microfiber cloth to dry the countertop.
3. **Method 3: Hydrogen Peroxide (room temperature)**—Pour the 3% undiluted hydrogen peroxide directly into a spray bottle. Starting where the wall meets the countertop, spray the hydrogen peroxide onto the surface. Be sure that every area of the countertop is wet with sanitizer. Allow the hydrogen peroxide to sit on the surface for 10 minutes. Be sure the counter has enough solution so that it stays wet for the 10 minute contact time. Do not rinse the countertop. Allow the solution to air dry or use a clean, dry microfiber cloth to dry the countertop.
4. **Method 4: Vinegar (heated)**—Pour the undiluted 5% white vinegar into a pot and warm it to 150 degrees Fahrenheit. Pour the warmed solution into a spray bottle. Starting where the wall meets the countertop, immediately spray the vinegar onto the surface. Be sure that every area of the countertop is wet with sanitizer. Allow the warmed vinegar to sit on the surface for at least one minute. Then wipe with a clean microfiber cloth.
5. **Method 5: Vinegar (room temperature)**—Pour the undiluted 5% white vinegar directly into a spray bottle. Starting where the wall meets the countertop, spray the vinegar onto the surface. Be sure that every area of the countertop is wet with sanitizer. Allow the vinegar to sit on the surface for 10 minutes. Be sure the counter has enough solution so that it stays wet for the 10-minute contact time. Then wipe with a clean microfiber cloth.
6. **Method 6: Other Sanitizing products**—When using commercially available sanitizing products, always read the manufacturer’s instructions on the label before using the product. Sanitize your kitchen counters according to the manufacturer’s instructions. To search for safer and healthier commercial sanitizing products, visit <https://www.ewg.org/guides/cleaners/>.
7. **Method 7: Steam**—To sanitize your kitchen countertops using steam, refer to Section 8.4 Sanitizing Surfaces with Steam.

- **Sanitizing Dishes, Utensils, Heat-Safe Toys and Feeding Items**

Remember, cleaning always comes before sanitizing. The following are suggestions for how to sanitize dishes, utensils, toys, and infant feeding items (like bottles).

Because these are smaller items, sanitizing them is often through submerging in either hot water or a chemical sanitizing solution.

1. **Method 1: Dishwasher**—Clean the items and place them in the dishwasher. Use the hot water setting and a heated drying cycle or use the sanitizing setting.
2. **Method 2: Boiling**—After the items have been cleaned, place the disassembled items into a pot, and cover with water. Put the pot over heat and bring it to a boil. Boil the items for five minutes. Remove the items with clean tongs.
3. **Method 3: Chlorine bleach**—First wash and rinse all dishes, glassware, and utensils that you intend to sanitize. This is important because the debris from the dirty dishes reacts with bleach, decreasing the concentration and its effectiveness. Prepare a sanitizing solution of 2 teaspoons of unscented chlorine bleach per one gallon of water. Submerge all items completely in the solution and allow them to soak two minutes. Use gloves or tongs to remove the items and allow them to drain and completely air dry. The sanitizing solution for dishes is diluted enough that any remaining bleach will break down quickly.

Use the same process to sanitize infant feeding items. After sanitizing, place the items on a clean, dish towel or paper towel in an area protected from dirt and dust. Allow the items to air-dry thoroughly before storing them. Do not use a dish towel to rub or pat items dry because doing so may transfer germs to the items.

To ensure the potency of your sanitizing solution, prepare no more than three gallons of water with two tablespoons of bleach (the same as six teaspoons) at a time. Make more as needed.

4. **Method 4: Hot water**—After washing dishes, completely submerge them in 170°F water and let them soak for at least 30 seconds. Use a thermometer to check the water temperature. Use gloves or utensils to remove dishes from the hot water and allow them to air dry completely.

- **Sanitizing a Refrigerator**—After deep cleaning your refrigerator, sanitizing it is the final death blow to any pathogenic or spoilage bacteria that may be present. First, follow the instructions provided in Chapter 6 to deep clean your refrigerator. Then, use one of the following methods to sanitize your refrigerator or use a sanitation method of your choice.

1. **Method 1: Hydrogen Peroxide (heated)**—Pour the 3% undiluted hydrogen peroxide into a pot and warm it to 150 degrees Fahrenheit. Immediately, pour the warmed solution into a spray bottle. First, spray the entire interior surface. Starting at the very top of the interior of the fridge, spray the warm hydrogen

peroxide onto the surface. Then, spray along the back of the refrigerator interior, starting in the upper left corner of the fridge, moving from left to right and right to left, working from top to bottom. Be sure to spray along non-removable shelves and inside any non-removable drawers. Next, spray along the left side of the fridge interior, working from top to bottom. Then repeat on the right side. Now, spray the bottom of the refrigerator. Next, spray the inside of the door and spray the door seal along the edge of the door interior. Be sure that every area of the fridge interior is wet with sanitizer. Next, spray the door handle and the removable parts. Allow the hydrogen peroxide to sit on the surface for at least one minute. Do not rinse. Wipe using a clean microfiber cloth. Once the surfaces have dried, return the removable parts, plug in the refrigerator, and return the food items to the fridge.

2. **Method 2: Vinegar (heated)**—Pour the undiluted 5% white vinegar into a pot and warm it to 150 degrees Fahrenheit. Pour the warmed solution into a spray bottle. Now sanitize the refrigerator following the process used in Method 1: Hydrogen Peroxide (Heated).
3. **Method 3: Chlorine Bleach**—IMPORTANT NOTE: Be sure to check the manufacturer’s instructions to ensure that bleach is safe to use on the interior and exterior surfaces of your refrigerator. Once verified, prepare the bleach solution by placing one gallon of water in a bucket. Add one tablespoon of regular household bleach to the water. Immerse the microfiber cloth into the solution. Wring out the cloth, leaving it moist, but not dripping wet. Starting at the very top of the interior of the fridge, wipe from back to front in a tight S pattern. Then, wipe the back of the interior of the refrigerator. Starting in the upper left corner of the fridge, wipe from left to right and right to left in a tight S pattern, working from top to bottom. Wipe the non-removable parts such as shelves and drawers, working from back to front. Then, wipe the interior of the door, working from top to bottom. NOTE: Most manufacturers discourage the use of bleach on the door seal because it can wear it out over time. Only use bleach on the door seal in extreme cases where thick mold and mildew are present. Otherwise, be sure that every other area of the refrigerator interior is wet with the sanitizer. Next, wipe down the refrigerator handle. Lastly, wipe down each of the removable parts. The bleach solution should remain on the surface for at least two minutes. Be sure to apply enough of the sanitizing solution so that the surface remains wet for at least two minutes before it dries. Allow the solution to air dry; do not rinse. Once the surfaces have dried, return the removable parts to the refrigerator. When sanitizing with bleach, allow the refrigerator to air out for a few hours with the door open before returning food items. After a few hours have passed, plug in the refrigerator and return the food items to the fridge.
4. **Method 4: Other sanitizing products**—When using commercially available sanitizing products, always read the manufacturer’s instructions on the label before using the product. Sanitize your refrigerator according to the manufacturer’s instructions. To search for safer and healthier commercial sanitizing products, visit <https://www.ewg.org/guides/cleaners/>.



5. **Method 5: Steam**—To sanitize your refrigerator using steam, refer to Section 8.4 Sanitizing Surfaces with Steam.

- **Sanitizing a Cooktop**

First, follow the instructions provided in Chapter 6 to clean your electric, gas, or induction cooktop. Make sure the surface is dry. Next, follow the manufacturer's instructions to sanitize your cooktop. The following information provides general sanitizing methods for gas, induction, and electric smooth glass-ceramic cooktops.

1. **Method 1: Chlorine Bleach**—IMPORTANT NOTE: Be sure to check the manufacturer's instructions to ensure that bleach is safe to use on the cooktop. Once verified, prepare the bleach solution by placing one gallon of water in a bucket. Add one tablespoon of regular household bleach to the water. Immerse the microfiber cloth into the solution. Wring out the cloth, leaving it moist, but not dripping wet. Starting at the rear of the cooktop, wipe from back to front in a tight S pattern. The bleach solution should remain on the surface for at least two minutes. Be sure to apply enough of the sanitizing solution so that the surface remains wet for at least two minutes before it dries. Allow the solution to air dry; do not rinse.
2. **Method 2: Hydrogen Peroxide (heated)**—To sanitize the glass-ceramic cooktop, pour ½ cup of 3% undiluted hydrogen peroxide into a pot and heat to 150 degrees Fahrenheit. Using a funnel, pour the warmed solution in a spray bottle. Spray the entire cooktop surface with the solution. Allow the hydrogen peroxide to sit on the cooktop for one minute. Do not rinse the cooktop. Wipe the cooktop using a dry microfiber cloth.

To sanitize the gas cooktop, pour ½ cup of 3% hydrogen peroxide into a pot and heat to 150 degrees Fahrenheit. Place the warm solution in a bowl. Wearing rubber gloves, dip the microfiber cloth into the heated hydrogen peroxide. The cloth should be moist but not dripping wet. Wipe the grates and burner caps. Now wipe the cooktop. Starting from the rear left corner, wipe the cooktop surface, in a slightly overlapping S pattern until you reach the front. Be sure to cover the surface with the solution completely. Allow the hydrogen peroxide to sit for one minute. Do not rinse. Wipe the grates, burner caps, and cooktop using a dry microfiber cloth. Once everything is dry, place the grates and caps back on the cooktop.

3. **Method 3: Vinegar (heated)**—To sanitize the glass-ceramic cooktop, pour ½ cup of 5% undiluted distilled vinegar into a pot and heat to 150 degrees Fahrenheit. Using a funnel, pour the warmed solution in a spray bottle. Now spray the surface and sanitize following the steps used in Method 2: Hydrogen Peroxide (heated) for glass-ceramic cooktop.

To sanitize the gas cooktop, pour ½ cup of 5% undiluted vinegar into a pot and heat to 150 degrees Fahrenheit. Place the warmed solution in a bowl. The cloth should be moist but not dripping wet. Wipe and sanitize the gas cooktop following the steps used in Method 2: Hydrogen Peroxide (heated) for gas cooktop.

4. **Method 4: Hydrogen Peroxide (room temperature)**—To sanitize the glass-ceramic cooktop, use a funnel to pour ½ cup of 3% hydrogen peroxide directly into a spray bottle. Spray the entire cooktop surface with the solution. Allow the hydrogen peroxide to sit on the cooktop for ten minutes. Be sure the cooktop has enough solution so that it stays wet for the 10-minute contact time. Do not rinse the cooktop. Wipe the cooktop using a dry microfiber cloth.

To sanitize the gas cooktop, pour ½ cup of 3% hydrogen peroxide directly in a bowl. Dip a microfiber cloth into the peroxide. The cloth should be moist but not dripping wet. Wipe the grates and burner caps. Starting from the rear left corner, wipe the cooktop surface, completely covering the surface with the solution. Allow the hydrogen peroxide to sit for ten minutes. Do not rinse. Wipe the grates, burner caps, and cooktop using a dry microfiber cloth. Once everything is dry, place the grates and caps back on the cooktop.

5. **Method 5: Vinegar (room temperature)**—To sanitize the glass-ceramic cooktop, use a funnel to pour ½ cup of undiluted 5% distilled vinegar directly into a spray bottle. Now spray the entire surface and sanitize following the steps used in Method 4: Hydrogen Peroxide (room temperature) for glass-ceramic cooktop.

To sanitize the gas cooktop, pour ½ cup of 5% undiluted vinegar directly in a bowl. Dip a microfiber cloth into the room temperature, vinegar. The cloth should be moist but not dripping wet. Wipe and sanitize following the steps used in Method 4: Hydrogen Peroxide (room temperature) for gas cooktop.

6. **Method 6: Other sanitizing products**—When using commercially available sanitizing products, always read the manufacturer's instructions on the label before using the product. Sanitize your cooktop according to the manufacturer's instructions. To search for safer and healthier commercial sanitizing products, visit <https://www.ewg.org/guides/cleaners/>.
7. **Method 7: Steam**—To sanitize your cooktop using steam, refer to Section 8.4 Sanitizing Surfaces with Steam.

- **How to Sanitize the Kitchen Sink**

The kitchen sink is one of the dirtiest parts of the home and can be a hotbed for germs such as *E. Coli* and salmonella. It is crucial to reduce the number of germs in the sink to acceptable levels for food preparation by sanitizing the sink immediately after cleaning it. Be sure to consult with your sink manufacturer to learn the best way to sanitize your specific sink. The following information provides general guidelines for sanitizing a top-mounted, single basin, stainless steel sink.

1. **Method 1: Chlorine bleach**—Put the stopper in the sink and fill the sink with one gallon of hot water. Add one tablespoon of bleach to the water. Using a sponge, wipe all surfaces of the sink with the bleach/water solution. The bleach solution should remain on the sink for at least two minutes. Remove the

stopper. Allow the bleach solution to drain and air dry. Do not rinse.

2. **Method 2: Hydrogen Peroxide (heated)**—Pour ½ cup undiluted hydrogen peroxide into a pot and warm it to 150 degrees Fahrenheit. Pour the warmed solution into a spray bottle. Immediately spray the entire sink and let it sit for at least one minute. The warmed hydrogen peroxide is highly effective as a sanitizer at 130 degrees Fahrenheit. Therefore, apply it to the sink before it cools. After one minute, allow the sink to air dry or wipe clean. The heated peroxide will kill listeria monocytogenes, E. coli, and salmonella bacteria.
3. **Method 3: Vinegar (heated)**—Pour ½ cup 5% distilled vinegar into a pot and warm it to 150 degrees Fahrenheit. Pour the warm solution into a spray bottle. Immediately spray the entire sink and let it sit for at least one minute. After one minute, allow the sink to air dry or wipe clean. The heated distilled vinegar will kill listeria monocytogenes, E. coli, and salmonella bacteria.
4. **Method 4: Other sanitizing products**—When using commercially available sanitizing products, always read the manufacturer’s instructions on the label before using the product. Sanitize your kitchen sink according to the manufacturer’s instructions. To search for safer and healthier commercial sanitizing products, visit <https://www.ewg.org/guides/cleaners/>.
5. **Method 5: Steam**—To sanitize your kitchen sink using steam, refer to Section 8.4 Sanitizing Surfaces with Steam.

## Section 8.4 Sanitizing Surfaces with Steam

Steam sanitizing uses heat produced from bringing water to a high temperature to remove dirt and germs. You can use steam to sanitize your kitchen, bathroom, toilets, floors, carpets, upholstered furniture, and more. Steam can also get rid of pests like bedbugs, fleas, dust mites, and other allergens on the surface. Steam cleaning can be economical by saving you the expense of purchasing cleaning products. After the initial purchase of the steam machine, you only need water.

So how does steam sanitizing work? When heating water in the normal atmospheric pressure, its temperature rises until it reaches 212°F, which is the boiling point for water. Adding heat does not raise the temperature, but it converts the water into steam. 212°F is the minimum temperature needed to kill 99.9% of common household germs, bacteria, viruses, dust mites, and bedbugs. Steam Cleaners Pro recommends using steam machines that will heat water to a *consistent* 212 degrees to sanitize. At this temperature, steam can cut through the microscopic pores on a variety of surfaces to destroy germs and allergens. Many steam machines can even reach temperatures over 212 degrees by heating the water under pressure (similar to a pressure canner). The increased pressure forces the boiling point to exceed 212°F. Some industrial steam machines can reach temperatures over 350 degrees. Be sure to check the appropriate temperature settings for sanitizing surfaces with your steamer.

There are three basic types of steam machines: handheld, canister, and a push machine (like a steam mop). The key is to choose a product that will create a steady, abundance of steam to sanitize effectively. Handheld steamers can be lightweight, portable, and convenient to use





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## Chapter 9: How to Disinfect

As we have read over the past several chapters, regular cleaning is necessary to maintain a safe and comfortable environment in the home. Cleaning is essential because this process removes visible dirt and some germs in the home, making it safer for you and your entire family. But cleaning alone will not kill the viruses and bacteria that can lead to illness. As we learned in Chapter 2, germs are tiny microorganisms that may be lurking around your home, waiting to get inside your body and make you sick. So how do we kill these microscopic germs? After giving the area a good cleaning, disinfecting is necessary to say goodbye, and good riddance, to viruses and bacteria. Daily disinfecting is especially required when someone in the home is sick and during times when there is an outbreak of a disease.

**Disinfecting** refers to using chemicals to kill all disease-producing germs on surfaces. Studies have also shown that you can use extremely high heat to disinfect surfaces, but the surface must be exposed to the correct temperature for the specified amount of time. Although disinfecting does not clean dirty surfaces or remove the germs, it kills the germs that remain after cleaning to lower the risk of spreading infections further than cleaning alone. To measure the effectiveness of disinfectants against particular germs on hard surfaces, the Environmental Protection Agency (EPA) developed testing methods and standard operating procedures. If a tested product destroys all organisms within 10 minutes, then the EPA approves it to be labeled as a “disinfectant.”

In this chapter, we will learn when disinfecting is necessary, as well as some tools and products that help to get the job done. After learning how to disinfect our environment correctly, Insha’Allah, we will be able to stop those disease-causing germs in their tracks.

### Section 9.1 Decide Where and When to Disinfect

Disinfecting is necessary when **all** disease-causing microorganisms must be “killed” to provide a safe environment. This is especially true for surfaces that may have come into contact with dangerous germs. Whereas in food preparation areas (such as restaurants and your home kitchen) the focus is on sanitizing to reduce the number of germs to a safe level, other areas of the home, like the bathroom, need to be disinfecting to eradicate harmful germs. Hospitals and health care facilities also disinfect to ensure the eradication of all germs. During an outbreak of a disease-causing pathogen like a virus, the Centers for Disease Control (CDC) recommends that you clean and disinfect your home *daily* in order to kill the virus. Depending on the number of people (and items) coming in and out of your home, you may need to disinfect multiple times a day.

The best way to keep your family safe and your home germ-free is to clean regularly, disinfect frequently and use the disinfecting product correctly. When disinfecting, pay special attention to surfaces that people tend to touch a lot, such as door handles, light switches, phones, keyboards, computer mouse, remote controls, stair handrails, etc. Also, pay attention to horizontal surfaces such as countertops, kitchen tables, desktops, and other places where cough and sneeze droplets might land.

A one-time deep clean is not enough to ensure your home is free of germs during an outbreak of a virus. Just consider what we learned in Chapter 2. When a person secretes bodily fluids into the air—such as through talking, sneezing, coughing, spitting, drooling,

slobbering, or vomiting—these droplets of body fluid can travel up to six feet and land on surfaces throughout the home. If a person touches the surface where the droplets landed and then touches their eyes, nose, or mouth, the droplets carrying the germs can get inside the body and make someone sick. If you deep clean and disinfect on Monday, and then a person sneezes in the house on Tuesday (sending germ-filled droplets into the air), the great cleaning job you did on Monday will not be enough to keep you safe. During an outbreak, daily cleaning and disinfecting are a must.

To deactivate or kill the microscopic germs left on surfaces, you should clean and disinfect high-touch surfaces daily, especially in common household areas. High-touch surfaces simply mean surfaces that are touched often throughout the day. These include:

- ✓ Counters
- ✓ Tabletops
- ✓ Hard-backed chairs
- ✓ Doorknobs/door handles
- ✓ Stair handrails
- ✓ Bathroom fixtures
- ✓ Toilets
- ✓ Sinks—including hardware such as faucets and their knobs
- ✓ Phones
- ✓ Computer mouse and keyboard
- ✓ Laptops and tablets
- ✓ Touch screens
- ✓ Remote controls
- ✓ Bedside tables
- ✓ Light switches
- ✓ Lamp switches
- ✓ Window parts (such as window locks and the cord used to open or close curtains and blinds)
- ✓ Thermostats, radiator valves, humidifier knobs, AC buttons
- ✓ On/off buttons on appliances (such as oven knobs, microwave buttons, coffee pots, blender switches)
- ✓ Handles on objects (such as on the refrigerator, freezer, oven, dishwasher, drawer pulls, etc.)
- ✓ Toys (Note: Do not disinfect toys that small children may put in their mouths as the harsh chemicals could pose a hazard; opt to sanitize instead.)

When disinfecting, concentrate your disinfecting efforts on these high-touch areas as well as areas like the bathroom. Since all bodily fluids can transmit viruses, the bathroom requires special attention.

As you map out the areas of your home that need daily disinfection, consider whether or not members of your household are *already* sick. Keep in mind that if a person in the home is sick with a contagious virus, you should quarantine the ill person from the other members of the household. Quarantine simply means that the sick person stays in a specific room, away from other people in the home. We will review this subject matter in greater detail in Chapter 10: Cleaning Your Home When a Person Has a Virus. Also, follow the home care guidance provided by the Centers for Disease Control (CDC) and other medical professionals.

## **Section 9.2 Choose Your Disinfecting Tools & Products**

Disinfecting should be done immediately after cleaning. Therefore, if you intend to disinfect, make sure you have the tools and products needed before you begin to clean.

### **Disinfecting Tools**

The following are some tools you will need for disinfecting. Please refer to Chapter 4: How to Clean for detailed information regarding these cleaning tools.



- **Spray bottle**—Spray bottles can be used as a container for your store-bought or homemade disinfecting solutions or to rinse something off with water.
- **Microfiber cleaning cloth**—A microfiber cleaning cloth can be used to apply disinfectants to surfaces and is preferred over other fabric types as it is most effective at cleaning contaminants. Also, these cloths won't scratch or leave streaks behind.
- **Bucket**—A bucket has multiple uses. Buckets can be used for storing disinfecting products, mopping, or as containers for disinfecting solutions.
- **Paper towels/Disposable cloths**—Paper towels can be used to wipe surfaces or to dry surfaces.
- **Protective attire**
  - Rubber gloves protect your hands from chemicals and diseases. When disinfecting, gloves are considered part of your personal protective equipment (PPE). Read all disinfecting product labels carefully to verify if manufacturers recommend the use of gloves for that particular product.
  - Wearing specific clothes for cleaning will help to protect you and your nice clothing from being ruined by chemicals and stains. Clothing, such as long sleeves and long pants, will also protect your skin from contacting harsh chemicals.
  - Goggles or eye protection may be helpful if you are using chemicals that may splash and get into your eyes or cause irritation from the fumes.

### **Disinfecting Products**

Disinfecting is usually done using chemicals and sometimes heat. You can disinfect with common household products that may already be in your cabinet, such as chlorine bleach and alcohol—both of which are recommended by the Centers for Disease Control (CDC). You may also choose to purchase commercially available disinfectants. Whatever disinfectant you choose, be sure the product will be effective against the specific germ(s) that you are trying to kill.

Chemical disinfectants are classified as pesticides by the Environmental Protection Agency (EPA) because they kill pests, such as disease-causing microorganisms. For commercially available disinfectants, the EPA conducts testing to ensure that the claims made by the manufacturer are accurate, and the product does what the label states. For example, the label on Lysol Disinfecting Wipes states that they disinfect Influenza A Virus (H1N1) and Staphylococcus Aureus (Staph). The label states that 14 additional germs are disinfecting, or in essence, “killed” by the wipes. Since Lysol is an EPA registered disinfectant, this means the EPA evaluated these claims during the product registration process to ensure they are valid. Keep in mind that you must follow the instructions on the label to ensure the disinfectant product works effectively, as claimed.

### **Dissecting Disinfectants!**

In Chapter 8, we discussed several chemical-based sanitizing products. Well, guess what? Some of these products are useful as disinfectants. The M.G.T. will now take a moment to “dissect disinfectants” as we look at some of the products we can use in the home. Before using any of these chemicals, be sure to refer to the manufacturer's and the Environmental

Protection Agency's (EPA) guidelines and exercise safety precautions to avoid the product becoming detrimental to your health. Also, choose your disinfecting product wisely, as it may contain dangerous chemicals that can adversely affect you and your family's health. Lastly, check the product information to see if it is safe to use on the surface that requires disinfection. For example, if you plan to disinfect the granite countertops in your bathroom, be sure the chemical you intend to use will not damage the granite. Ultimately, you have to decide what method is best for you and your family's health and safety.

- **Chlorine bleach**—This is a commonly sold household product that, when safely used, can effectively disinfect your home. The active ingredient in chlorine bleach is sodium hypochlorite. Bleach attacks mycobacteria, which is “a bacterium of a group which includes the causative agents of leprosy and tuberculosis,” as well as small viruses, and some bacterial spores. Higher concentrations of bleach and water can serve as a disinfectant, while lower concentrations will only sanitize. When using bleach, be sure to refer to the manufacturer's instructions and the Environmental Protection Agency (EPA) guidelines and exercise safety precautions to avoid the product becoming detrimental to your health.

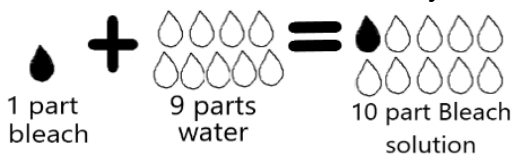
➤ **Dilute Before You Disinfect**

In Chapter 8, we discussed the need to dilute bleach before using it. This is also true when using bleach as a disinfectant. Remember, if bleach is not diluted properly and rinsed off when necessary, it will leave behind a white residue (which is mostly salt) on your surfaces. Along with that unsightly residue, you and the members of your household will be unnecessarily exposed to harsh chemicals. Undiluted bleach can react with other substances and release a toxic gas. Therefore, proper dilution of bleach is crucial. When mixing bleach with water, it is best to add bleach to water (rather than adding water to bleach). Using this method helps to reduce fumes and prevent splashing. Keep in mind that although we use bleach solutions to eradicate germs, this does not mean that more is better.

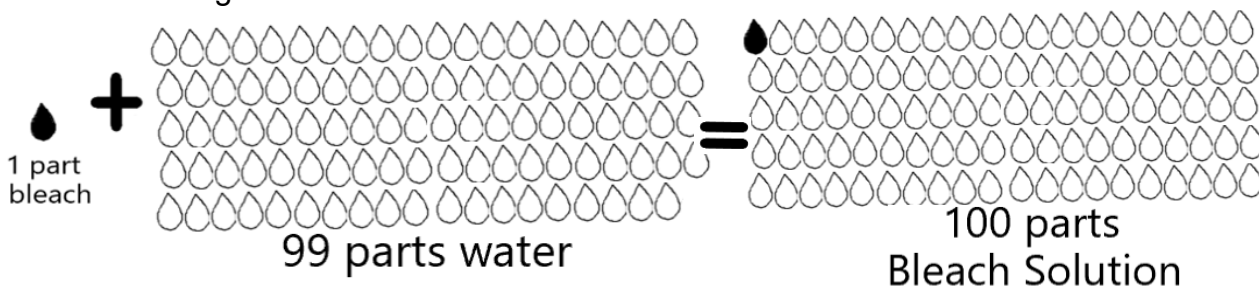
Before making your disinfecting solution, check the label to determine the strength of your bleach. According to the American Chemistry Council, “Common household laundry bleach, used to whiten and disinfect laundry, is typically either 5.25 percent (“regular strength”) or 6 percent sodium hypochlorite (“ultra-strength”).” Germicidal bleach that is used by hospitals and professional cleaning companies is often 8.25%. Understanding the concentration of your bleach solution is important for achieving effective disinfection. For disinfection with regular household bleach (5.25% or 6.00% sodium hypochlorite), dilute the bleach in water according to the following ratios:

- a strong solution that has a large ratio of bleach to water (a 1:10 ratio), or
- a mild solution that has a small ratio of bleach to water (a 1:100 ratio).

For example, a one to 10 ratio (1:10) of bleach solution means that out of 10 parts, 1 part is bleach and 9 parts are water, for a total of 10 parts (see the illustration below). A 1:10 dilution of bleach to water is approximately 1½ cups of bleach added to one gallon of water. This is a highly potent concentration of bleach and is considered caustic, which means it can burn your skin.



A one to 100 ratio (1:100) of bleach solution means that out of 100 parts, 1 part is bleach and 99 parts are water, for a total of 100 parts (see the illustration below). A 1:100 dilution of bleach to water is approximately 2.5 tablespoons to 4 tablespoons ( $\frac{1}{4}$  cup) of bleach added to one gallon of water. This is a much weaker concentration. This solution has the least amount of bleach that is effective for disinfecting.



The higher concentrations of bleach are used for hard-to-kill bacteria and spores, while lower concentrations are used for disinfecting germs that are easier to destroy. For the novel coronavirus, the CDC recommends a solution of  $\frac{1}{3}$  cup of household bleach to one gallon of water or four teaspoons of household bleach per quart of water. They also recommend leaving the bleach solution on the surface for at least one minute.

Disinfecting bleach solutions must remain wet on the surface for a specific amount of time to be effective. This is referred to as contact time or dwell time. The dwell time may vary, depending on the strength of the bleach solution and the type of microorganism you are trying to kill. For example, for the hard-to-kill spore form of *Clostridium difficile*, the Centers for Disease Control (CDC) recommends a higher concentration of bleach solution ( $1\frac{1}{2}$  cups per gallon of water) and a 10-minute contact time. For the easier to kill coronavirus that causes COVID-19, the CDC recommends a much smaller concentration of bleach solution ( $\frac{1}{3}$  cup per gallon of water) and a contact time of “at least 1 minute.” Note that prior to March 26, 2020, the CDC recommended a 5-minute contact time to disinfect areas contaminated with the novel coronavirus. However, this recommendation was changed on March 26, to “at least 1 minute”. The World Health Organization (WHO) published recommendations of at least a 5-minute contact time for bleach solutions to kill the influenza virus. For general household disinfection, the Clorox company recommends a contact time of 5 to 6 minutes, depending on your product type. Based on this information, the 5-minute contact time would be the most conservative approach. However, it’s best to follow the manufacturer’s instructions for the appropriate contact time of their bleach product. After the specified contact time, the surface should be rinsed with clean water to remove any residue from the bleach solution.

To determine how to dilute your bleach safely for use as a disinfectant, refer to the manufacturer’s instructions on the product label as well as recommendations provided by the Environmental Protection Agency (EPA) and the CDC. The following is some useful information for using bleach as a disinfectant.

To disinfect with bleach and **one gallon** of water:

- For bleach strength of 5.25-6.25% (regular and ultra-strength bleach), use one gallon of water and 1/3 cup of bleach.
- For bleach strength of 8.25% (germicidal bleach), use one gallon of water and two tablespoons of bleach.
- The bleach solution should remain on the surface for at least five minutes.
- After the contact time, rinse the surface with clean water and wipe clean.

To disinfect with bleach using **one quart** of water:

- For bleach strength of 5.25-6.25% (regular and ultra-strength bleach), use one quart of water and four teaspoons of bleach.
- For bleach strength of 8.25% (germicidal bleach), use one quart of water and 1 ½ teaspoon of bleach.
- The bleach solution should remain on the surface for at least five minutes.
- After the contact time, rinse the surface with clean water and wipe clean.

The Clorox company indicates that for household cleaning and disinfecting, you can use bleach in warm, cold, or even hot water. Be sure to apply enough disinfecting solution for the surface to remain wet at least five minutes before it dries. It is best to store your homemade bleach solution in an opaque container (just like the storage container it comes in). Diluted bleach solutions should be used within 24 hours and then discarded, as its disinfecting ability fades with time.

Bleach loses its ability to disinfect over time and also through exposure to heat and light. Most bleach products purchased from stores expire one year from the date of production. Refer to the information in Chapter 8: How to Sanitize to determine the expiration date for your bleach. Bleach begins to degrade and continues to deteriorate under the following conditions:

1. Unopened after one year on a shelf
2. Stored incorrectly in direct sunlight
3. Stored at temperatures above 77°F

Bleach can no longer disinfect properly once the product loses potency, and must be disposed of properly. Follow the manufacturer's instructions for discarding bleach, which is usually done by diluting bleach in a large amount of water before pouring down the sink drain or toilet.

### ➤ **Hazards of Bleach**

In Chapter 8, we learned that bleach is a hazardous material. It is corrosive to metals such as non-stainless steel, silver, aluminum, and chipped enamel, which is why bleach solutions should always be mixed in a plastic bucket or bowl and never in a metal pail or a spray bottle with metal parts. Do not mix bleach with ammonia or vinegar. This can produce a highly toxic gas called chlorine gas, which causes cellular damage in the nasal passageways and lungs and can also lead to death. Chlorine gas also forms when bleach reacts with acids. Avoid mixing bleach with any other product because they can react negatively. Bleach can cause irritations to the skin, eyes, nose, and mouth. And internally, it can irritate the respiratory system via the larynx, trachea, and the lungs. Bleach can cause asthma in people

continuously exposed to it, such as cleaning staff, and it can cause asthma symptoms in people who already have the condition. Always use caution when disinfecting with bleach and be sure to dilute the solution properly.

**Caution!** Remember the following points when using bleach:

- Ventilate the area to prevent inhaling dangerous fumes.
  - Always dilute concentrated products safely and in the appropriate amount to prevent unnecessarily exposing the members of your household to toxins.
  - Wear personal protective equipment such as eye protection, rubber gloves, and protective clothing.
  - Never mix bleach with ammonia or vinegar, as this produces a toxic gas.
  - Before using bleach, remember to research if it is safe to use on the desired surface.
- **Alcohols** are organic chemical compounds made of two parts—a hydroxyl group and an alkyl group. Alcohol in the form of ethyl alcohol (also known as ethanol) and isopropyl alcohol (also known as isopropanol) have similar disinfectant properties. Ethyl alcohol is typically the alcohol found in alcoholic beverages, while isopropyl alcohol is the type of alcohol in drugstore rubbing alcohol. Hospitals and healthcare facilities use both types of alcohol to disinfect and sterilize equipment. Alcohol in solutions between 60% and 90% alcohol (with 10% to 40% water) quickly kills bacteria, fungi, and viruses.

For the highest effectiveness, the CDC, the World Health Organization, and the Journal of Hospital Infection recommend using alcohol solutions at concentrations of 70% alcohol and 30% water (as opposed to higher or lower concentrations of alcohol). Most rubbing alcohol found in stores has 70% alcohol concentration. This concentration is best as a disinfectant because the presence of water is crucial in destroying or stopping the growth of microorganisms. Water helps the alcohol to be more effective in penetrating the cell wall and breaking down the proteins, causing the microorganism to “die.” Water also helps to slow down the alcohol evaporation when applied to a surface, increasing surface contact time and enhancing effectiveness. According to a study published by the Journal of Hospital Infection, solutions of 70% alcohol should be left on surfaces for at least one minute to inactivate or “kill” human coronaviruses. In the CDC Guideline for Disinfection and Sterilization in Healthcare Facilities, the CDC notes that when using alcohol to inactivate the tuberculosis bacteria, a 5-minute contact time is required. Tuberculosis bacteria are much more difficult to kill than human coronaviruses. When disinfecting using 70% Isopropyl alcohol, apply enough of the alcohol solution so that the surface remains wet for one to five minutes.

A significant advantage of alcohol solutions is they do not leave any residue on treated items. While it is a great disinfectant, a 70% alcohol solution will be very rough on your hands. So, do not use alcohol as a hand sanitizer or instead of washing your hands. Alcohols may harden rubber and dissolve certain types of glue, so be careful if the surface you are disinfecting has these materials. Because alcohol is available in smaller quantities than chlorine bleach, it is most often used to disinfect smaller surfaces or small items. Alcohol tends to evaporate more quickly, so when using

alcohol, be sure to apply enough to allow the surface to remain wet for the recommended contact time. Alcohols are volatile and flammable. So, do not use alcohol near open flames. Also, be sure to test it on an inconspicuous spot because alcohol can remove paint and the finish on some surfaces.

- **To disinfect with alcohol:** Pour 70% strength alcohol into a spray bottle and spray the surface. You may also use a cloth to wipe the alcohol onto a surface. Allow it to sit for at least one minute or five minutes for greater effectiveness. For the 5-minute contact time, be sure to use enough alcohol so that the surface can remain wet. Allow the surface to air dry.
- **Alcohol Storage and Shelf Life**

Isopropyl alcohol (common rubbing alcohol) is a very stable chemical, and when stored under proper conditions, it can last a long time. Always refer to the printed expiration date on your particular bottle of alcohol. If you are unsure of the expiration, contact the product manufacturer. The Production Automation Corporation, a national distributor of medical and automotive supplies, advises that most alcohol solutions can last for two to three years. Decon Laboratories states that their isopropyl alcohol has a shelf life of two years. The best storage environment for alcohol is in a cabinet or closet away from light, heat sources, and open flames. Store alcohol solutions in proper containers, and tightly seal the top after use to avoid the evaporation of alcohol. If the top is loosely sealed, the alcohol can evaporate, leaving the water behind. If this happens, your 70% alcohol may decrease to a smaller percentage and is no longer effective as a disinfectant. Bottles with alcohol-containing solutions should be clearly labeled.
- 70% alcohol is a great disinfectant for the following items: Mirrors, stainless steel appliances, porcelain sinks, chrome sinks and faucets, bathroom fixtures, light switches, doorknobs, remote controls, a computer mouse, keyboards, and mobile phones. It also works great as a glass cleaner, can remove stains from microfiber, and much more.
- **Hydrogen Peroxide** is an acid that breaks down into hydrogen and water. Research has proven the disinfecting power of hydrogen peroxide. In Chapter 8, we learned that accelerated hydrogen peroxide effectively eradicates germs. Accelerated hydrogen peroxide is a patented blend of surfactants and other ingredients combined with low levels of hydrogen peroxide. The CDC reported, “A 0.5% accelerated hydrogen peroxide demonstrated bactericidal and virucidal activity in 1 minute and mycobactericidal and fungicidal activity in 5 minutes.” The Journal of Hospital Infection published a study that analyzed more than 20 other research studies. These studies revealed that 0.5% accelerated hydrogen peroxide could inactivate or kill human coronaviruses within one minute. Also, The Science Direct Journal published several studies indicating that a 0.5% solution of accelerated hydrogen peroxide can inactivate or kill non-enveloped viruses, which are more difficult to kill than enveloped viruses. Accelerated hydrogen peroxide dramatically increases the ability of hydrogen peroxide to both clean and destroy germs. Accelerated hydrogen peroxide is often used in healthcare environments and laboratories.

Vaporized hydrogen peroxide, (the vapor from peroxide after heated to 248 degrees), is used in laboratory settings to sterilize and decontaminate surfaces. It was recently approved to decontaminate N95 respirator masks for reuse in healthcare settings due to the shortage of personal protective equipment. But the hydrogen peroxide vaporization process is a highly sensitive, highly dangerous chemical process that is only carried out by trained science professionals and is not for use in the home.

The hydrogen peroxide available on store shelves is typically a regular, 3% hydrogen peroxide. Although not as germicidal as the hospital grade accelerated hydrogen peroxide, the store-bought variety has strength in its own right. The Centers for Disease Control (CDC) acknowledges that 3% hydrogen peroxide is germicidal and can kill a wide range of microbes including bacteria, yeasts, fungi, viruses, and spores. The CDC reported, "*Other studies demonstrated the antiviral activity of hydrogen peroxide against rhinovirus. The time required for inactivating three serotypes of rhinovirus using a 3% hydrogen peroxide solution was 6–8 minutes.*" They also reported that when using 3% hydrogen peroxide on inanimate surfaces, it can be a "stable and effective disinfectant." Keep in mind, the rhinovirus (a non-enveloped virus) is harder to destroy than the coronavirus (an enveloped virus). So, in theory, 3% hydrogen peroxide may be effective against the SARS-CoV-2 virus. However, more research is needed to prove if 3% hydrogen peroxide can deactivate the SARS-CoV-2 virus.

If you remember in Chapter 8: How to Sanitize, we suggested that for greater germ-fighting power, hydrogen peroxide should be heated to 150 degrees and then applied to surfaces. When heated, hydrogen peroxide will help to kill not only viruses (which are usually easier to kill) but also some bacteria (which tend to be harder to kill than viruses). Chapter 8 gives detailed instructions on how to sanitize using hydrogen peroxide. Although 3% hydrogen peroxide can be effective for some viruses and bacteria, it is best to use a safer choice, commercial disinfectant with hydrogen peroxide as the active ingredient to disinfect surfaces.

- **White vinegar** contains acetic acid, which can destroy certain bacteria and viruses. A small number of studies have shown that white vinegar is antibacterial, especially when it comes to killing bacteria on food during food preparation. In one study, a 6% solution of white vinegar was able to kill the bacteria that cause staph infections and E.coli, but the vinegar had to sit on the surface for at least 15 minutes. Another study found that a 6% solution of white vinegar was able to kill the tuberculosis bacteria, but in this instance, the vinegar had to sit on the surface for 30 minutes. While this is encouraging, the lengthy contact time and lack of research make household vinegar insufficient for use as a disinfectant. Vinegar is not registered for use as a disinfectant with the EPA, and you should not use vinegar to disinfect.

Note that when chemically combined, the acetic acid (in vinegar) plus the hydrogen peroxide is known as peracetic acid. Peracetic acid has been registered with the EPA as a disinfectant since 1985. But you should *never* mix hydrogen peroxide and vinegar at home. Combining the two can be dangerous and is best left to the science professionals.

- **Other Commercial Disinfectants**

You can also purchase products sold as disinfectants. These disinfectants contain some of the same active ingredients as sanitizers, including chlorine bleach, hydrogen peroxide, and quaternary compounds. For a safer choice, consider choosing a disinfectant with citric acid, caprylic acid, hydrogen peroxide, thymol, or ethanol as the active ingredient. These disinfectants are available as ready to use solutions in spray bottles or as concentrated solutions that must be diluted with water. Follow the dilution instructions on the label. While all these products have proven germ-killing action, some may be better for your health than others.

When choosing disinfecting products for your home, refer to the guidelines and recommendations provided by the Centers for Disease Control (CDC) and the Environmental Protection Agency (EPA). So how do you know what products to buy from the store? It depends on what microorganisms you are trying to kill. A list of the EPA's Registered Antimicrobial Products for Use Against Novel Coronavirus SARS-CoV-2, the cause of COVID-19, can be found at [www.epa.gov/listn](https://www.epa.gov/listn) which will redirect you to the full link (<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>).

This list, referred to as "List N," includes products that meet the EPA's criteria for use against SARS-CoV-2 (the cause of COVID-19). The EPA acknowledges that because SARS-CoV-2 is a new virus, these products were not tested against SARS-CoV-2 to determine whether or not they were effective at killing the virus. While the disinfectants on the EPA List N have not been tested against SARS-CoV-2, the EPA expect that these products will kill the virus because 1) these products have been proven effective against a harder-to-kill virus, or 2) these products have been proven effective against another type of human coronavirus that is similar to SARS-CoV-2.

As of May 6, 2020, there were 402 different EPA registered products on this list. While this is quite a lot, many of these products contain similar ingredients. The number of registered products is high because each company registers its specific product and receives a different product number. To see if a product in your home is on the list, visit [www.epa.gov/listn](https://www.epa.gov/listn), and follow the EPA's instructions, which states:

*"To find a product, enter **the first two sets of its EPA registration number** into the search bar below. You can find this number by looking for the EPA Reg. No. on the product label.*

*For example, if EPA Reg. No. 12345-12 is on List N, you can buy EPA Reg. No. 12345-12-2567 and know you're getting an equivalent product."*

They go on to say:

*"When using an EPA-registered disinfectant, **follow the label directions** for safe, effective use. Make sure to follow the contact time, which is the amount of time the surface should be visibly wet, listed in the table below. [Read our infographic on how to use these products.](#)*

***These products are for use on surfaces, NOT humans."***

The EPA infographic list the following six steps:

*"6 Steps for Safe & Effective Disinfectant Use*



- **Step 1:** Check that your product is EPA-approved—Find the EPA registration number on the product. Then, check to see if it is on EPA’s list of approved disinfectants at: [epa.gov/listn](http://epa.gov/listn)
- **Step 2:** Read the directions—Follow the product’s directions. Check “use sites” and “surface types” to see where you can use the product. Read the “precautionary statements.”
- **Step 3:** Pre-clean the surface—Make sure to wash the surface with soap and water if the directions mention pre-cleaning or if the surface is visibly dirty.
- **Step 4:** Follow the contact time—You can find the contact time in the directions. The surface should remain wet the whole time to ensure the product is effective.
- **Step 5:** Wear gloves and wash your hands—For disposable gloves, discard them after each cleaning. For reusable gloves, dedicate a pair to disinfecting COVID-19. Wash your hands after removing the gloves.
- **Step 6:** Lock it up—Keep lids tightly closed and store out of reach of children.”

You should choose disinfectants that are best for you and your family’s needs. If you choose to purchase a disinfectant, be sure to look for the EPA Registration Number on the product label. Then, look for that registration number on List N. If the product’s number is on the list, then the product is a match, and it can be used against the SARS-CoV-2 virus, which causes COVID-19 known to most as the coronavirus. These products may be sold and marketed with different brand names. However, if they have the same EPA registration number, they are the same product.

Note that the CDC recognizes that the selection and use of disinfectants are dynamic. This means that the list of products may change over time, and products may become available that were not in existence when the EPA guideline was written. As newer disinfectants become available, you can continue to refer back to the EPA website to remain up to date; and choose products cleared by the FDA and the EPA as well as products proven to disinfect based on information in the scientific literature.

The following information details some of the most common active ingredients in disinfectants, which are some of the same ingredients used in sanitizers. Products will often indicate that you should create a stronger dilution or possibly establish a longer contact time for the product to be effective as a disinfectant. Please refer to Chapter 11 for detailed information on the hazards of these cleaning products. Remember to choose the products best suited for you and your family’s health.

1. **Chlorine** is the most commonly used chemical in commercial disinfectants, such as chlorine bleach, because it is highly effective and relatively inexpensive. Some typical chlorine compounds are liquid chlorine, hypochlorites, inorganic chloramines, and organic chloramines. These are all different types of chlorine-based germicides, but they all work to attack the cell membranes of the germs, breakdown the cellular proteins, and stop the cell from growing. If you purchase a chlorine-based disinfectant, follow the instructions to determine how to use your product as a disinfectant. Before using products containing chlorine-based compounds as the active ingredient, be sure to read the product label to

determine whether or not the product is safe for use on your particular surface. For more detailed information, read Chapter 11: The Hazards of Cleaning Products.

2. **Quaternary ammonium compounds**, also known as Quats or QAC's, are positively charged ions that are naturally attracted to negatively charged proteins found in bacteria, molds, yeasts, and viruses. In their diluted form, Quats are odorless, colorless chemicals that are added to a variety of disinfecting products. These chemicals are very stable, which means that they do not lose their potency for killing germs over time and have the ability to withstand high temperatures. Quats are unlike chlorine, which has a shelf life and starts to break down at higher temperatures. Another advantage of QAC's is that after being applied to a surface, they leave an antimicrobial film helping to thwart off germs even longer. Some Quats, however, do require longer contact time when used as a sanitizer because they can be slow-acting against common bacteria that cause food spoilage.

Although Quats have some benefits, there are potential hazards that can result from their use. Direct exposure to skin can cause contact dermatitis, which may be as mild as dry red skin or severe as a chemical burn. Like chlorine bleach, Quats can also cause asthma to develop in people with no prior symptoms. This typically occurs in the form of "occupational asthma," where workers develop asthma due to frequent exposure. And like chlorine bleach, Quats can trigger asthma symptoms in people who already have asthma. If Quats splash or a mist gets into the air, eye and mucous membrane injuries can occur. Quats are also dangerous if swallowed and can cause oral and gastrointestinal injuries. In addition, scientists suspect that Quats may be toxic to the reproductive system and developing fetus. In one research study, female mice exposed to Quats in disinfectants experienced lower fertility and the mice who did conceive had smaller babies. When the disinfectant was changed, these reproductive problems went away.

To find out if a product contains Quats, look for active ingredients that end with "ammonium chloride" such as Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium chloride. If you purchase a Quat based disinfectant, follow the manufacturer's instructions to determine how to use your product safely. Before using, be sure to read the product label to determine if the product is safe to use on your surface. Also, refer to Chapter 11: The Hazards of Cleaning Products for more information.

3. **Citric acid** is considered a safer choice for disinfectants. Products containing citric acid may range from 0.6% to 8% concentrations and are often used at full strength when disinfecting, which means they are not diluted. According to research reported by the San Francisco Environment Department, citric acid has fewer negative impacts on health and the environment. It has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. Although it does not cause these serious health problems, citric acid may irritate the respiratory system, the eyes or the skin. Citric acid is also safer for the environment with no known aquatic toxicity; therefore, it is not toxic

to animals living in water. Citric acid also has a “low persistence,” meaning that this chemical does not linger long in the environment. Before using products containing citric acid as the active ingredient, be sure to read the product label to determine if the product is safe to use on your surface.

4. **Caprylic acid**, also known as octanoic acid, is another safer choice for disinfecting when diluted properly and handled appropriately. When properly diluted, caprylic acid exposure has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. Caprylic acid also has a low level of persistence when exposed to the environment, so it is not a lingering environmental substance. Although the concentrated form of this chemical is highly acidic and may cause damage to the eyes, the state of California specifically recommends the use of caprylic acid in Ecolab’s concentrated solution of “Disinfecting Heavy-Duty Bathroom Cleaner.” Ecolab’s product is sold in packaging that uses specialized dilution equipment, preventing the user from being exposed to the chemical in its concentrated form. When diluted properly using this special equipment, it may only cause moderate eye irritation. Before using products containing caprylic acid as the active ingredient, be sure to read the product label to determine whether or not the product is safe for use on your surface.
5. **Hydrogen peroxide** is recommended as a safer disinfectant in products that only have hydrogen peroxide as the active ingredient. If the product contains hydrogen peroxide along with other active ingredients, such as Quats, the product is not considered safe. Keep in mind that using hydrogen-peroxide based disinfectants is not the same as using regular 3% hydrogen peroxide that can be purchased from the drug store. These commercial disinfectants have been formulated to both stabilize the hydrogen peroxide and boost its germ-fighting power. When used as the only active ingredient in commercial disinfectants, hydrogen peroxide has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. Like caprylic acid, hydrogen peroxide has a low persistence level and does not sustain for long periods of time in the environment. While hydrogen peroxide can be quite dangerous at high concentrations (such as 50%), products purchased from stores containing hydrogen peroxide as the active ingredient have much smaller concentrations (typically 1%-5%). And for those that must be diluted, the product has very few health warnings once diluted. Before using products containing hydrogen peroxide as the active ingredient, be sure to read the product label to determine whether or not the product is safe for use on your surface.
6. **Lactic acid** is also recommended as a safer disinfectant in products that only contain lactic acid as the active ingredient. It is often found in concentrations of 0.18% to 7.2% in ready to use formulas, meaning these products do not have to be diluted. At a concentration of 3.2%, lactic acid products are used in healthcare settings to deactivate viruses and bacteria. Lactic acid has no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization, although it may cause moderate eye and skin irritations. Lactic acid also has a low persistence level and has no known environmental risks.

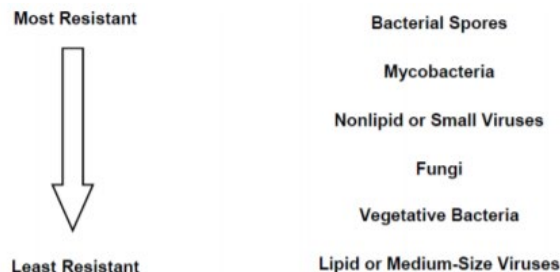
Before using products containing lactic acid as the active ingredient, be sure to read the product label to determine whether or not the product is safe for your surface.

7. **Silver and citric acid** in combination are considered safer disinfectants. Silver has no known toxic effects on humans and no known associations with cancer, reproductive or developmental toxicity, asthma, or skin sensitization. These products are often produced in ready to use spray bottles with smaller amounts of silver (i.e., 0.003%) as compared to citric acid (i.e., 4.84%). Disinfectants containing silver are very effective against a wide range of bacteria and viruses, and their disinfecting effects can last up to 24 hours on a treated surface. Because products containing silver are more expensive, they may be preferable for use on frequently touched smaller surfaces such as handles, doorknobs, and sink faucets. These products may irritate the respiratory system, skin, and eyes, but in general, they are considered safer products. Before using products containing silver as the active ingredient, be sure to read the product label to determine whether or not the product is safe for use on your surface.
8. **Thymol** is considered a safer active ingredient for commercial disinfectants, particularly in its diluted “ready to use form.” Thymol has no known associations with cancer or reproductive or developmental toxicity. However, higher concentrations of thymol may cause skin, eye, and respiratory irritation. Highly concentrated thymol may also lead to skin sensitization, which means that a person may experience inflammation or an allergic reaction after skin exposure. Thymol has the potential for respiratory sensitization (an allergic reaction in the respiratory system), but is currently listed under category “R”, indicating there is not enough research to determine if this chemical is a true asthmagen. Because of the additional research that is needed, the San Francisco Department of Public Health suggests that users may want to avoid the use of thymol in concentrated solutions that must be diluted, particularly users with respiratory issues. The Environmental Working Group notes that sanitizing and disinfecting products containing thymol as the active ingredient are still safer alternatives than many others. Before using products containing thymol as the active ingredient, be sure to read the product label to determine whether or not the product is safe for use on your surface.
9. **Ethyl alcohol**, also referred to as **ethanol**, is lower in toxicity when compared to other active ingredients in sanitizing and disinfecting products. After studying hundreds of products that are effective against the coronavirus, the Environmental Working Group lists products containing the active ingredient ethanol on its short list of safer sanitizing and disinfecting products. Be sure to choose a product that only contains ethanol as the active ingredient, and not ethanol and Quats as these are not as safe. Before using products containing ethanol as the active ingredient, be sure to read the product label to determine whether or not the product is safe for use on your surface.

For more information or to search for safer disinfecting and sanitizing products, visit the Environmental Working Group’s website at <https://www.ewg.org/news-and-analysis/2020/03/16-effective-and-safe-products-guard-against-coronavirus>.

## Section 9.3 The Science Behind Disinfection

The EPA List N has simplified the process for choosing a disinfectant for your home. But if you study the science of disinfectants even further, you will find that there are three levels of disinfectants as specified by the Centers for Disease Control: low, intermediate, and high. Low and intermediate-level disinfectants are sufficient to kill the novel coronavirus. The following figure, provided by the Food and Drug Administration, lists various disease-causing germs. The germs at the top (bacterial spores and mycobacteria) are most resistant to chemical disinfectants. These require intermediate and high-level disinfection. The germs at the bottom (lipid or medium-sized viruses like the human coronavirus) are the least resistant to chemical disinfectants. Low-level disinfectants can kill these germs.



Modified from Favero, M.S. and Bond, W.W., Chemical Disinfection of Medical and Surgical Materials. In: Disinfection, Sterilization, and Preservation, 5th Ed Phila: Lippincott Williams & Wilkins 2001: 881-917.

Figure 1. Descending Order of Resistance of Microorganisms to Germicidal Chemicals.

- **High-level disinfectants** are used in hospitals, surgical centers, and health care facilities to disinfect critical items that will contact areas inside the human body. High-level disinfectants destroy all viruses, vegetative bacteria, fungi, mycobacterium, and some bacterial spores. High-level disinfectants are considered “chemical sterilant” and have stricter regulations than low and intermediate disinfectants. They are regulated by the EPA as well as the Food and Drug Administration (FDA). Persons handling high-level disinfectants should exercise great caution. These products must be correctly diluted, and proper personal protective equipment is required, including masks, gloves, goggles, and long-sleeved clothing.
- **Intermediate-level disinfectants** are registered with the EPA (Environmental Protection Agency), and they are on the EPA List N. These disinfectants have a tuberculocidal claim, which means they can kill the bacteria that cause tuberculosis. Why is this important? Because if a product can kill tuberculosis (a mycobacteria that is very difficult to kill), then it can also kill many other very dangerous germs. Handling intermediate-level disinfectants requires care. These products must be correctly diluted, and proper personal protective equipment is required, including masks, gloves, goggles, and long-sleeved clothing.
- **Low-level disinfectants** are registered with the Environmental Protection Agency (EPA), and they are on the EPA List N. These disinfectants do not have a tuberculocidal claim, but they have claims on their labels for the hepatitis B virus and HIV. This means low-level disinfectants cannot kill tuberculosis, but they can kill other

very dangerous germs such as the hepatitis B virus, HIV, and the human coronavirus. Low-level disinfectants are also hospital-level disinfectants, which means that they demonstrate the capability to kill three types of dangerous bacteria that are more resistant to chemicals than other bacteria—Staphylococcus aureus, Pseudomonas aeruginosa, and Salmonella choleraesuis.

## Section 9.4 How to Disinfect Using Disinfecting Solutions

Now that we have gotten a closer look at the disinfecting products that are available, let's use one of these products to kill those germs in the home!

### Before Disinfecting

1. Gather everything you will need for disinfecting.
2. Check to make sure the disinfecting solution is safe to use on the desired surface.
3. If you are making a disinfecting solution, make it according to the manufacturer's instructions or according to the EPA guidelines. Note if the disinfecting solution must be prepared freshly for each use (such as a bleach dilution) or if you can use previously made solutions.
4. Read all labels that contain instructions for safe and effective use of the disinfecting product, including precautions you should take when applying it.
5. Wear your protective clothing such as clean disposable gloves, long pants, a long-sleeved shirt, and goggles if necessary. Discard disposable gloves after cleaning. If you are using reusable gloves, they should be dedicated to cleaning and disinfection only. After removing your gloves, clean and sanitize them and wash your hands immediately.
6. When disinfecting, make sure the area is properly ventilated—open windows, open doors, turn on ventilation fan, etc.

### Disinfecting Surfaces

1. Start with a freshly cleaned surface. Remember, disinfecting must be done immediately after cleaning.
2. Apply the disinfectant to the surface for the recommended amount of time. You can apply it using a spray bottle, cloth, or a mop. Be sure to cover the entire surface with the disinfecting solution.
3. Some disinfectants do not require rinsing, and you can simply allow the surface to air dry. If rinsing is required, allow the solution to remain on the surface for the recommended contact time. Then, use a spray bottle filled with water or a dampened cloth with clean water to rinse the surface. Lastly, air dry or wipe clean as directed.
4. To prevent contact with contaminated cleaning cloths, immediately discard disposable cloths after using. Launder reusable cloths immediately using detergent and disinfectant. Do not launder cleaning cloths with regular laundry or place them in hampers with clothes.

## Section 9.5 Operation Disinfect!

Now that we have learned the order of operations for disinfecting, let's look at how this works.

- **Disinfecting Bathroom Counters**—To disinfect your bathroom counters, first declutter, dust, and clean the counter, as we learned in previous chapters. Next, disinfect. Refer to the manufacturer's instructions to determine the best method to

disinfect your bathroom counters. In this instance, we will disinfect the bathroom counter using one of the following methods:

1. **Method 1: Chlorine Bleach**—Prepare the bleach solution by placing one gallon of water in a bucket. Add 1/3 cup of regular household bleach to the water. Immerse the microfiber cloth into the solution. Wring out the cloth, leaving it moist, but not dripping wet. Starting where the wall meets the counter, wipe across the countertops from back to front in a slightly overlapping tight S-pattern until you reach the front of the counter. Be sure that every area of the countertop is wet with the disinfectant. The bleach should remain on the surface for at least five minutes. Be sure to apply enough disinfecting solution so that the surface remains wet for at least five minutes. After the 5-minute contact time, rinse the counter to remove any bleach residue. To rinse, immerse a clean cloth in plain warm water and use it to wipe in a tight S-pattern, from back to front. Allow the countertop to air dry or use a clean, dry microfiber cloth to dry the countertop. Drying the countertop will help avoid water stains from moisture and prevent streaks.
  2. **Method 2: Alcohol**—Pour the 70% undiluted alcohol into a spray bottle. Starting where the wall meets the countertop, spray the alcohol onto the surface in an S pattern, from back to front, to ensure complete coverage of the countertop. Allow the alcohol to sit on the surface for at least 5 minutes. Be sure the counter has enough solution so that it stays wet for the 5-minute contact time. Allow to air dry or use a clean, dry microfiber cloth to dry the countertop. Drying the countertop will help avoid water stains from moisture and prevent streaks. You may also rinse by going over your countertops with a cloth dampened with warm water, wiping in a tight S-pattern, from back to front. Allow to air dry and use a clean, dry microfiber cloth to dry the countertop.
  3. **Method 3: Other Disinfecting Products**—Before using commercially available disinfecting products, always read the manufacturer’s instructions on the label. Disinfect your bathroom counters according to the manufacturer’s instructions. To search for safer and healthier commercial disinfecting products, visit <https://www.ewg.org/guides/cleaners/>.
- **Disinfecting Tub/Shower**—To disinfect your tub and shower, first declutter, dust, and clean the tub and shower, as we learned in previous chapters. Next, disinfect. Refer to the manufacturer’s instructions to determine the best method to disinfect your tub/shower. In this instance, we will disinfect the tub/shower using one of the following methods:
    1. **Method 1: Chlorine Bleach**—Before you begin, properly ventilate the area. Fill a bucket with one gallon of water and then add 1/3 cup of bleach to the water. Next, take your microfiber cloth, dip it into the solution, and wring it out, leaving it moist, but not dripping wet. Then, starting at the top, left side of the shower, wipe from left to right and right to left using a slightly overlapping S pattern until you reach the bottom. Move clockwise, covering all shower surfaces with the disinfectant. Then, wipe the tub in the same manner, moving from one end to the other end. Be sure to saturate the

surface with disinfectant. Allow the disinfectant to sit for five minutes. Then rinse the showerhead, walls, bathtub, and curtain—dry using microfiber cloths.

2. Method 2: Other Disinfecting Products—Before using commercially available disinfecting products, always read the manufacturer’s instructions on the label. Disinfect your bathroom counters according to the manufacturer’s instructions. To search for safer and healthier commercial disinfecting products, visit <https://www.ewg.org/guides/cleaners/>.
- **Disinfecting Bathroom Sink**—To disinfect your bathroom sink, first declutter, dust, and clean the counter, as we learned in previous chapters. Refer to the manufacturer’s instructions to determine the best method to disinfect your bathroom sink. In this instance, we will disinfect the bathroom sink using one of the following methods:
    1. Method 1: Alcohol—Before you begin, properly ventilate the area. Start by pouring your 70% strength alcohol in a spray bottle. Spray the sink from top to bottom. Allow the alcohol to sit on the surface for at least one minute, but for more germ-killing power, let it sit for five minutes. Then, allow the surface to air dry.
    2. Method 2: Chlorine Bleach—Put the stopper in the sink and fill the sink with one quart of hot water. Add four teaspoons of bleach. Using a sponge, wipe all surfaces of the sink with the bleach/water solution. The bleach solution should remain on the sink for at least five minutes. Remove the stopper from the sink. Then, rinse the surface with clean water and wipe to dry.
    3. Method 3: Other Disinfecting Products—Before using commercially available disinfecting products, always read the manufacturer’s instructions on the label. Disinfect your bathroom sink according to the manufacturer’s instructions. To search for safer and healthier commercial disinfecting products, visit <https://www.ewg.org/guides/cleaners/>.
  - **Disinfecting Toilet**—To disinfect your toilet, first clean the toilet, as we learned in previous chapters. Next, disinfect. Refer to the manufacturer’s instructions to determine the best method to disinfect your toilet. In this instance, we will disinfect the toilet using one of the following methods:
    1. Method 1: Chlorine Bleach—Pour 1/3 cup of bleach into the toilet bowl. Immerse your toilet brush in the bleach solution and begin scrubbing just under the rim. Scrub vigorously all the way around. Then, continue scrubbing around the toilet bowl while working your way down to the bottom. Next, scrub the opening at the bottom of the toilet where the waste is flushed away, scrubbing back and forth around the opening. Next, close the lid and let the bleach sit in the toilet bowl for 10 minutes. After ten minutes, flush the toilet. In the meantime, we will disinfect the exterior of the toilet.

Place one gallon of water in a bucket. Add 1/3 cup of regular household bleach to the water. Immerse a cleaning cloth into the solution. Wring out the cloth,



leaving it moist, but not dripping wet. Wipe the exterior of the toilet, working from top to bottom in the same manner as when cleaning it. Be sure that every area of the toilet's exterior is wet with the disinfectant. After applying the bleach solution to the surface, the bleach should remain on the surface for at least five minutes. Be sure to apply enough of the disinfecting solution so that the surface remains wet for at least five minutes.

After the 5-minute contact time, rinse the exterior of the toilet by wiping it with a cloth dampened with warm water to remove any bleach residue. Allow the toilet to air dry or dry it using a clean, dry microfiber cloth. Drying the toilet will help avoid water stains from moisture and prevent streaks.

2. **Method 2: Other Disinfecting Products**—Before using commercially available disinfecting products, always read the manufacturer's instructions on the label. Disinfect your toilet according to the manufacturer's instructions. To search for safer and healthier commercial disinfecting products, visit <https://www.ewg.org/guides/cleaners/>.

- **Disinfecting Electronics**—For electronics, such as tablets, touch screens, keyboards, and remote controls, you should follow the manufacturer's instructions for cleaning and disinfecting. For most electronics, alcohol-based wipes or alcohol sprays containing 70% alcohol can be used as a disinfectant.

## Section 9.6 Disinfecting Soft Surfaces

Although daily disinfection is typically for the hard (non-porous) surfaces in the home, you may find it necessary to disinfect soft surfaces. If a person vomits on your couch or a child wets the carpet, you will likely need to disinfect. To disinfect soft (porous) surfaces, first, remove any visible contaminants using cleaners that are safe for use on the surface. Then, launder machine washable items according to the manufacturer's instructions. (Refer to Section 9.7 Disinfecting Items That Go in the Laundry.) Use the highest water temperature recommended and thoroughly dry items in a dryer or air dry (as instructed). For items that are not machine washable, use EPA-approved products suitable for porous surfaces with the emerging viral pathogens claim. Be sure to choose a product that will not damage or stain the surface.

## Section 9.7 Disinfecting Laundry

Wear disposable gloves when handling soiled laundry, especially from an ill person. Immediately discard the gloves after use. If using reusable gloves, they should be for cleaning and disinfecting only. Clean and disinfect reusable gloves after each use. After removing the gloves, wash your hands immediately. If no gloves are available, wash your hands immediately after handling dirty laundry. Avoid shaking out dirty laundry indoors to prevent dispersing germs in the home environment. Follow the manufacturer's laundering instructions. Use the highest temperature setting recommended and thoroughly dry items in a dryer or air dry as recommended. Periodically, clean and disinfect clothes hampers. To make this process easier, consider lining the clothes hamper with a garbage bag or a machine-washable laundry bag. Simply machine wash the laundry bag according to the instructions provided above or toss the garbage bag after using it.

## Section 9.8 Disinfecting Surfaces with Heat

As mentioned in Chapter 8, heat is a powerful tool for killing disease-causing microorganisms. However, using the right method is vital for heat to work effectively as a disinfectant.

### Steam Sterilization

Steam sterilization is a process used in laboratories to kill viruses on medical equipment and other surfaces. If you have ever had a surgical procedure done, those items used for the procedure were likely sterilized. Sterilization “kills” all microorganisms on the surface, which prevents a person from catching a disease after using or touching that item.

Steam sterilization exposes the item to direct steam at the necessary temperature and pressure for the specified time. The steam must reach a specific temperature to ensure that microbes are killed. In hospital settings, the two most common steam-sterilizing temperatures are 250°F (121°C) and 270°F (132°C). These temperatures (and other high temperatures) must be maintained for a minimal time to kill microorganisms. According to the Centers for Disease Control, the recommended exposure period for steam sterilization at 250 degrees is 30 minutes. But in laboratories, there are vacuum-sealed machines that can decrease the recommended steam exposure time to 4 to 6 minutes. Steam sterilization is used as an intermediate and high-level disinfectant method since it can be used on critical and semi-critical items in the healthcare environment.

But what about using steam as a disinfectant in the home? Home steam machines need to reach at least 212 degrees to produce steam for sanitizing, but the temperature must be much higher to disinfect (closer to 250 degrees with longer exposure). In a recent interview, Dr. William Schaffner, an infectious disease specialist and professor at Vanderbilt University School of Medicine, explained that steam is used in medical and institutional environments under controlled settings. And it is unclear if steam would be as effective against a virus on a home surface, such as trying to kill the SARS-CoV-2 virus on your countertops. Dr. Schaffner stated, “I’m not sure whether the time-temperature relationships that you would use when you’re steaming a countertop, couch, or hardwood floor, would kill the virus.” Medical professionals believe that, in theory, high-temperature steam machines may be used to kill the novel coronavirus in the home, but at this time, the research appears lacking.

At the Cornell University Department of Molecular Medicine, Dr. Ruth Collins suggests that soap and hot water may help your home steam machine to kill the virus. Why is soap helpful? The coronaviruses are enveloped viruses, which means they have a protective layer of fat surrounding them. The soap helps to break down the fatty layer, making it easier for steam to kill the virus. So, if you were attempting to use steam to kill the human coronavirus on a hard surface, these studies suggest that applying hot soapy water to the surface, and then steam cleaning it, could aid in killing the virus. However, sufficient research is not yet available to support using home steam cleaners as a viable means of disinfecting. Currently, the CDC does not have guidelines to disinfect with steam. Nevertheless, this chapter provides plenty of useful options, and there’s a vast body of research to explore which methods are best suited for your household.



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## Chapter 10: Cleaning Your Home When a Person Has a Virus

We have learned much about germs and how to remove them from our homes by cleaning, sanitizing, and disinfecting. Knowing how to clean your home is critical. When a person is sick, cleaning can be a matter of life and death. It is not uncommon for household members to catch a "bug" or be "under the weather," especially during certain times of the year. When there is a pandemic or outbreak of a deadly disease, we must be especially vigilant if a person in the home becomes sick.

Influenza, or the flu, is a cyclical illness that tends to sicken and even kill many people in the United States every year. According to the Centers for Disease Control (CDC), "during the 2018-2019 influenza season, the CDC estimated that 35.5 million people got sick with influenza, 16.5 million went to a health care provider for their illness, 490,600 were hospitalized, and 34,200 died from influenza." The flu statistics are eye-opening. Even more staggering, at the time of this writing, more than one million people in the United States have been stricken with COVID19 (the coronavirus) since December 2019, with more than 81,000 deaths. These have become common illnesses that severely sicken many and turn deadly for some. Therefore, we must know how to eradicate a virus as quickly as possible if a person in our home becomes infected.

Given the prevalence of influenza, the coronavirus, and other harmful illnesses, someone in your home may get sick. Those charged with "keeping house," must know how to properly clean the home and care for the person who becomes ill.

### Section 10.1 Preventing the Spread of a Virus

No one wants the flu, coronavirus, or any other contagious disease. People take precautions every year to avoid catching influenza, and now we are searching for ways to avoid the coronavirus. The flu is an illness that saps your energy and produces fever, chills, aches, pains, and other discomforts. This can last for days. Some even pass away from complications associated with the flu. Now we are witnessing similar or worse suffering with the coronavirus.

Some get vaccinated as a preventative measure for the flu. Ironically, people who get the flu vaccine can still contract the illness. In a June 28, 2019 article on WebMD, it states, "The overall effectiveness of last flu season's vaccine was only 29% because it didn't protect against a flu virus that appeared later in the season, according to the U.S. Centers for Disease Control and Prevention." The article goes on to say, "...the vaccine was 47% effective into February, but that dropped to just 9% after the late strain showed up..." After looking at the effectiveness of the flu vaccine, or the lack thereof, we should see that our real protection is not in the vaccination. After all, according to this report, at its most effective point, it was less than 50% effective. At its least effective point, it was less than 10% effective. That means that at best, approximately 5 out of 10 people vaccinated still caught the flu, and at worst 9 out of 10 people vaccinated still became ill with the viral infection.

In a Final Call article titled, "The Scourge of Biological and Chemical Weapons In America," The Honorable Minister Louis Farrakhan states,

*"We cannot continue to allow our enemies to vaccinate us and our children. They make it "the law"—and it is the law, in some places, that we can't go to school unless*

*we allow them to vaccinate us. But why should we trust you to vaccinate us and our children? Our children are all we have. Should we put our children in the hands of those who have used chemistry and biology, and vaccinations, to lessen our power to reproduce, and to kill us off?*

*“No. We must develop the scientists that will examine whatever you offer us because we know you as a blood shedder, we know you as a liar, we know you as a deceiver and a murderer. So why would we trust you with our precious gift, our children? In the 1960s, The Honorable Elijah Muhammad advised his followers not to take the polio vaccine. He said some of the early vaccines we could take, but now that this Kissinger National Security Study Memorandum 200 on depopulation is the policy of our government, we have to be careful of what injections we allow ourselves to take.*

*“Did you know that there are different flu vaccine shots? According to one of our researchers, he went to the doctor, and she recommended a flu shot, and he refused, saying that he didn’t want a flu shot due to the excessive mercury and other additives used as preservatives. And she told him: “Oh! We have a flu shot that is a non-preservative, that does not have any additives that we give to Jewish people, and those who are knowledgeable about the chemical additives in these vaccines ...” However, the general population does not have this knowledge to make this choice.”*

Rather than inject the body with ineffective, toxic chemicals, the best preventative measure is knowing what and when to eat to boost the immune system. Please refer to How To Eat To Live Books 1 and 2 by The Most Honorable Elijah Muhammad for Divine Guidance on how to ward off illness and achieve optimal health through eating the right foods, eating one meal a day, and fasting.

### **Someone in my household has the coronavirus, the flu, or another contagious disease. What should I do?**

Say a prayer and ask Allah to heal the sick member of your household. Ask for His protection for the other members in the home, and ask Allah to strengthen you as you guard your home against the infectious disease. Focus on quickly restoring the sick person to good health and preventing further spread of the virus in the home. To do this, 1) isolate the ill person in a separate area of the home, 2) immediately clean and disinfect the home, and 3) continue to clean and disinfect the home daily. Let’s explore how to implement each of these steps.

### **Section 10.2 Isolate and Contain the Sick Person**

When you first learn that a member of your home has a contagious illness such as the coronavirus or the flu, quarantine the ill person from the other members of the household. Quarantine simply means that the sick person should stay in a specific room, away from other people in the home. The Centers for Disease Control (CDC) recommends that after a person becomes exposed to the coronavirus, they should self-quarantine, monitoring the symptoms for 14 days post-exposure. This means that if a person in your home becomes exposed, you should isolate them in a designated “sick” room for at least 14 days. Isolation and containment of the sick person will prevent further spread of disease by significantly decreasing the amount of interaction with those who are not ill. As the caregiver, you should also follow home care guidance provided by the CDC and other medical professionals. Think of this as war, and the virus, or whatever pathogen you are trying to kill, is the enemy. It is easier to fight an enemy confined to one location than trying to defeat an enemy that is all

over the place, roaming about the home. Although the virus is an invisible enemy, it must be eradicated.

As soon as you suspect that someone in your home has an infectious disease like coronavirus or the flu, assign the sick person to a specific room in the home. The designated “sick” room can be a bedroom with a door that closes to create as much isolation as possible. Open a window, if possible, to keep the fresh air flowing. Once the ill person is isolated, the rule is only sick people in the sick room. No other persons are allowed except the designated caregiver when necessary. If the sick room is a room that is typically shared with others, they should temporarily move to another area of the home. This may seem like an inconvenience, but health professionals recommend it to prevent further spread of the disease and to save lives. Isolation and containment also apply to children who share bedrooms. Only the sick child should remain in the sick room. Keep the following items in the sick room to make it comfortable and easier to manage:

- Box of tissues
- Paper towels
- Cleaning supplies
- Lined trash can with a plastic trash bag
- Hand sanitizer
- Water for drinking
- Thermometer
- Humidifier—A humidifier puts moisture back into the air. The additional moisture in the air may help the sick person to breathe better.
- Facemasks—When they leave the sick room, the sick person should wear a face mask even if they are just going to another area of the house, such as the bathroom.

If you absolutely must share a room with a person infected with SARsCov2 (the virus that causes the coronavirus), the CDC recommends that you ensure the room has good airflow. Improving ventilation in the room helps to reduce respiratory droplets that are in the air. To increase the air circulation, open up the windows and, if possible, turn on a fan. The sick person, as well as others around them, should also wear a face mask when in a shared space.

### **Designate a Bathroom**

If your home has more than one bathroom, it is a good idea to have any infected persons to use one bathroom. The CDC advises that the sick person should clean and disinfect their own bathroom if they are able to clean. If a separate bathroom is not available, every time the ill person uses the shared bathroom, it should be cleaned and disinfected, paying particular attention to clean and disinfect the high-touch surfaces. When cleaning a shared bathroom, the CDC recommends that the caregiver should wait as long as possible after the sick person uses the bathroom, before going in to clean and disinfect. Wear a mask and gloves when cleaning and disinfecting a bathroom used by an infected person.

An article published by WebMD indicates that when someone has a virus such as the cold or flu, half the bathroom faucets are riddled with the virus. When cleaning and disinfecting the bathroom, pay special attention to the faucet and sink, light switches, doorknobs, toilet surfaces including the toilet handle and inside the commode, mirrors, bathtub/shower, wastebaskets, and the floor. Toothbrushes should be allowed to air out. If the sick person

does not have their own designated bathroom, separate the sick member's toothbrush from the rest of the families' toothbrushes. Make sure that the toothbrush is thrown away and replaced after the sick person has recovered. The article also notes that you should give the sick person their own hand towel to avoid spreading disease through a shared towel.

### **Dishes**

The person who is ill should eat all meals in the sick room. They should have assigned dishware, and no one should share plates, utensils, or glasses with them. Wear gloves when handling them and wash them with detergent and hot water immediately following use. You may also wash the dishes in a dishwasher. Don't allow soiled dishes to sit around; germs on the dishes can multiply within minutes. You may also use disposable dishware and simply discard it once used. Remember, always wash your hands after removing gloves or handling anything that comes from the sick room.

### **Trash**

Dedicate a trash can for items used by the sick person or disposable items used in the sick room (such as paper towels). Place a plastic trash bag in the trash can. Always use gloves when handling trash from the sick room, and wash your hands immediately after handling trash.

### **Laundry**

Designate a separate clothes hamper for the sick person. Hampers should also be cleaned and disinfected according to the guidelines for disinfecting surfaces. Consider lining the clothes hamper with a plastic garbage bag or a washable laundry bag. Wear disposable gloves when handling soiled laundry from a sick person and then discard the gloves after each use. If you use reusable gloves, dedicate them to cleaning and disinfecting the sick room only. Immediately wash your hands after removing the gloves. If no gloves are available, wash your hands immediately after handling the laundry.

Do not shake out dirty laundry to avoid dispersing germs through the air. Follow the manufacturer's instructions to wash clothing, linen, towels, and other items. Launder items using the highest recommended water temperature and dry items thoroughly in a dryer.

### **Cleaning the Sick Room**

In the bedroom and bathroom dedicated to the sick person, the caregiver should only enter the room to clean on an as-needed basis. The CDC recommends that the sick person clean and disinfect their own space as much as possible if they are physically able. Just be sure to equip the "quarantine" room with personal cleaning supplies for the sick person. If the person is unable to clean, the caregiver should clean as needed, such as if the person vomits or the area is visibly soiled. While your instinct may be to clean the sick room often, going in and out of the sick room increases your risk of exposure to germs and spreading them through the home.

If you must go into the sick room, be sure to wear your personal protective equipment, including a mask, gloves, long pants, a long-sleeved shirt, etc. Discard disposable gloves and wash your hands after leaving the sick room. Continue to monitor your own health to be sure you have not contracted the illness.



## **Spiritual Food**

Last but not least, provide the sick person with plenty of spiritual food to cleanse the mind. The right word can have a profound impact on our ability to recover from illness. In Book 2 of *How to Eat to Live*, The Most Honorable Elijah Muhammad states, *“To get good results from eating the proper foods, we must have good thoughts.”* In *Closing the Gap*, on page 318 it states,

*“The Honorable Elijah Muhammad told me once that, “It takes five hundred seconds, eight minutes and twenty seconds for the light, traveling at a hundred and eighty-six thousand miles per second, to travel from the sun to the earth.” Likewise, he said, “It takes five hundred seconds, eight minutes and twenty seconds for the blood to make a complete circulation between the heel and the brain and back.” He said, “When you go to visit a person that is sick, if you put the right word in their ear, within eight minutes and twenty seconds, you will see a change in the spirit of such person.”*

*“What that told me was that the level of energy, light, spiritual power that is contained in the right words, communicated from the right motivation, energizes the brain of the recipient of such word. That energy is delivered to every part of the body, thereby increasing the energy level of that person.”*

Scientific studies conducted by the National Institutes of Health and the Mayo Clinic also conclude that optimism has a positive effect on immunity. As the caregiver, you can help the sick person by giving them good spiritual food in the form of the Holy Qur’an, books, and lectures by The Most Honorable Elijah Muhammad and The Honorable Minister Louis Farrakhan.

## **Section 10.3 Immediately Clean and Disinfect the Home**

It is crucial to increase the cleaning and disinfecting of your home as soon as you know that someone in your home is ill with a contagious disease. Don't wait until someone else in the home comes down with a full-fledged case. Get on top of it right away. When the sniffles, sneezes, and coughs begin, quickly attack the situation by hitting it with a one-two punch! First, focus on restoring the health of the person who is ill by attending to their medical needs. Second, provide the household with a clean and disinfected environment, which will help speed recovery and guard the health of those who are well.

### **Clean and Disinfect the Common Areas**

All high touch surfaces must be thoroughly cleaned and disinfected daily. Refer back to previous chapters of this guide for step-by-step instructions on how to clean and disinfect surfaces. Attention should first be given to common areas shared by members of the household. Although you may have moved quickly to isolate and contain the sick, remember there was a period when the infected person was not displaying any outward symptoms. The incubation period for the flu ranges from one to four days, with the average being two days. The Harvard Medical School recently published research indicating the average incubation period for the coronavirus is five to six days. While this is the average, the study shows that people could start showing symptoms after only three days, or as long as 13 days, which supports the CDC recommendation to self-quarantine for 14 days after potential exposure.

Because there is a period when people are asymptomatic, or not showing any outward symptoms of illness, then it is possible that germs were spread in other areas of your home before the sick person was contained. Additionally, other people in the home could be

infected and potentially spreading germs but have not yet displayed any symptoms. As a result, it is necessary to clean and disinfect your entire home after isolating the person who has caught the virus.

Some of those common areas that require cleaning and disinfecting are:

- ✓ Bathroom(s)
- ✓ Kitchen
- ✓ Living room
- ✓ Family room
- ✓ Dining room
- ✓ Game room/playroom
- ✓ Hallways
- ✓ Shared bedrooms
- ✓ Any other room the sick person had access to

### **Germ Lurking Hot Spots**

As you begin to clean the home, remember that high touch surfaces can be germ lurking hot spots. High-touch surfaces are those most likely to be touched frequently. The more people touch these surfaces, the higher the potential for them to become infected with germs and then spread to others. Be careful to clean and disinfect these germ lurking hot spots, especially if someone becomes ill. As a reminder from previous chapters, the germ lurking hot spots include:

- ✓ Counters and tabletops
- ✓ Hard-backed chairs
- ✓ Doorknobs/door handles
- ✓ Stair handrails
- ✓ Bathroom fixtures
- ✓ Toilets
- ✓ Sinks—including hardware such as faucets and their knobs
- ✓ Phones
- ✓ Computer mouse and keyboard
- ✓ Laptops and tablets
- ✓ Touch screens
- ✓ Remote controls
- ✓ Bedside tables
- ✓ Light and lamp switches
- ✓ Window parts (such as window locks and the cord used to open or close curtains and blinds)
- ✓ Thermostats, radiator valves, humidifier knobs, AC buttons
- ✓ On/off buttons on appliances (such as oven knobs, microwave buttons, coffee pots, blender switches)
- ✓ Handles on objects (such as on the refrigerator, freezer, oven, dishwasher, drawer pulls, etc.)
- ✓ Toys (Note: Be sure to use “safer choice” disinfectants or sanitize.)

An article published by WebMD titled, "Cleaning Hit List: What to Disinfect," discusses things that we should disinfect after someone has had the flu. These include:

**Your phone.** According to research conducted by a microbiology professor at the University of Arizona in Tucson, 80% of phones in homes that have a person with the flu have the flu virus on them.

**The remote control.** The remote is one of the most touched—and least cleaned—items in the home. A sneeze or cough in one's hand, then a touch of the remote, and it's a party of germs in the palm in your hand.

**Tables.** Most tables in the home are frequently touched. This includes kitchen tables, play tables, coffee tables, and night tables. Make sure these germ spots get a good cleaning and disinfecting often.

**Laptops and computers.** Always follow the manufacturer's cleaning instructions. Refer to the previous chapters for information on how to clean and disinfect electronics.

**Stuffed animals.** Wash stuffed animals on the highest possible temperature setting. If they are not machine washable, clean the surface and use the baking soda method detailed earlier in this book to clean stuffed toys. Put the stuffed animals away for a few days to allow any viruses on the surface to die.

**Sheets, blankets, towels.** If they are white, you can wash them at a high temperature using laundry detergent and bleach. Be sure to follow the manufacturer's instructions. Wash colors at high temperatures with laundry detergent and color-safe bleach.

WOW! Does that seem like a lot! It could be, but it's much better to take the time to do it right in the beginning than to have pathogens spreading and sickening the members of your household. The key is knowing the main areas to clean and disinfect and then making it happen. You'll be finished before you know it.

### **How Should I Clean?**

Utilize what you have learned in previous chapters to properly clean and disinfect the home. Follow the correct steps for dusting, cleaning, sweeping, mopping, vacuuming, etc. Don't skip steps! Each step is crucial, and a building block for the next one. Use all cleaners, sanitizers, and disinfectants according to the manufacturer's instructions. To begin, ventilate the area by opening windows and doors where possible. This lets fresh air in and old, stale, germ air out. Additionally, a ventilated area protects against inhaling chemicals. Use the necessary personal protective equipment (gloves, masks, apron, etc.) to protect yourself from the germs you are killing and the chemicals used to kill them. Select and use the correct cleaning methods and tools for the task at hand. Don't use sponges to clean surfaces as they harbor germs. Microfiber cloths are a better alternative. Clean all surfaces first using dish detergent and warm water, or a cleaner of your choice. Then, you must disinfect. Be sure to check the label to verify that the disinfectant is effective against the virus and follow the instructions to disinfect the surface.

After cleaning and disinfecting, dispose of all waste and cleaning solutions properly. Properly clean and disinfect your cleaning supplies and tools to ensure that you are not using dirty and contaminated items. Have extra cleaning cloths on hand to avoid recontamination.

By cleaning and disinfecting in this manner, you will be helping your family stay safe from germs. According to the CDC, influenza viruses can "live" on surfaces for up to 48 hours. A study published in the New England Journal of Medicine reported that the SARS-CoV-2 virus could remain active on hard surfaces such as plastic and stainless steel for up to three days. And norovirus, which causes vomiting and diarrhea, can remain active on surfaces for weeks. It is also vital that everyone in the house washes their hands regularly for at least 20 seconds using warm water and soap. Hand washing goes a long way in the prevention of the spread of infectious disease.

## **Germ Lurking Hot Spots Outside of the Home**

Provided that you and the members of your household are not quarantined, you will have to leave the house when necessary. Be mindful of germ lurking hot spots outside the home. Take special care to clean and disinfect the high touch areas in your car, such as the steering wheel, gears, door handles, controls, etc. Watch out for those hot spots in the workplace, at school, etc. Keep your workspace clean and disinfected. As you go about your travels, avoid touching doorknobs with bare hands, as well as light switches, doorknobs, etc. Wash your hands if you come in contact with any of these items. This will help guard your health and others who may come in contact with those items.

## **Section 10.4 Continue to Clean and Disinfect Post Sickness**

Isolating the sick person not only helps to maintain the health of others in your home, but it will also greatly assist in your effort to clean and disinfect. The Centers for Disease Control advises that the person can leave the sick room under the following conditions: 1) the person has not had a fever for at least three full days without the use of medicine that reduces fever, 2) other symptoms such as cough or shortness of breath have improved, and 3) at least seven days have passed since the person's symptoms first appeared.

As previously mentioned, the CDC recommends allowing sick persons to clean their own area as much as possible. After the person has recovered, thoroughly clean, and disinfect all surfaces in the room where they were contained and the bathroom that they used. Also, clean and disinfect all other high touch surfaces throughout the home. Remember, even though the sick person was confined to one room, you were not! It is also important to air out your house, especially the room that the ill person was in as they recovered. Pay special attention to clean and disinfect the following areas in the room where the sick person was contained.

- ✓ Bed (headboard, footboard, mattress)
- ✓ Bedding (comforters, sheets, pillows, pillowcases, blankets, etc.)
- ✓ Desks, nightstands, and tables (The surface and the objects that are sitting on the surface must be cleaned and disinfected. Whenever people cough, viral particles travel through the air and settle on surfaces and objects.)
- ✓ Chairs (Pay special attention to the sidearm rests where we often put our hands.)
- ✓ Remote controls
- ✓ Electronic devices
- ✓ Telephones (Do not overlook telephones. They harbor a lot of germs whether we are sick with the flu or not. The flu can live on telephones for a few hours up to two days.)
- ✓ Doorknobs
- ✓ Light and lamp switches (Be sure to turn off and unplug the lamp first.)
- ✓ Dirty clothing
- ✓ Laundry basket that held soiled clothing
- ✓ Trash can
- ✓ Thermometer
- ✓ Medicine dispensing spoons
- ✓ The floor (vacuum, sweep, and mop based on the floor type)
- ✓ Any other items touched or in the general vicinity of the person who is ill.

In addition to the above, if it is a child who is sick, be sure to also clean and disinfect the following:



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## Chapter 11: The Hazards of Cleaning Products

Throughout this guide, we have learned a variety of cleaning, sanitizing, and disinfecting methods, along with several products to help get the job done. You may choose one or two simple cleaning products or purchase a plethora of supplies for your home. The cleaning product may be a gentle, natural cleanser with little to no harmful effects or a harsh chemical with potential dangers to your health or the environment. The choice is yours. Whatever product you choose, it is always best to use, dispose, and store it safely and in a manner that will not cause injury or harm to yourself or others. In this chapter, we will discuss some of the common ingredients in cleaning products, along with some known physical hazards and health hazards that may occur.

A hazard is simply a source of danger or risk. Cleaning products can pose physical hazards and health hazards. Physical hazards are those that are likely to result in sudden injury when a cleaning product is used improperly. An example is an explosion caused by a flammable cleaning product left too close to an open flame. Health hazards are those that could cause a person to become ill or suffer adverse health effects. An example is skin irritation or breathing problems after being exposed to a cleaning product.

Proper dilution of cleaning products, adequate ventilation, and using personal protective equipment (gloves, long pants, long-sleeved shirt, face mask, etc.) will go a long way to help you stay safe and avoid hazards while cleaning. In addition, avoid mixing cleaning products unless otherwise instructed to do so on the product label. The wrong combination of chemicals can cause severe injury or even death. Carefully follow the manufacturer's instructions when mixing chemicals. Following these precautions will help to guard you and your loved ones against the potential hazards that are associated with the use of everyday household cleaners. We will begin our study of hazards by figuring out what exactly is in our cleaning products.

### Section 11.1 Cleaning Product Labels

As M.G.T. scientists, we should always read the label of any cleaning, sanitizing, or disinfecting product before using it. Have you ever looked for the ingredients of the cleaning products that you use every day? With a little time and effort, and if you know where to look, you can find them. Let's start with the simple products first and then investigate the labels on some of the more complicated commercial cleaning products.

#### Simple Ingredient Products

**Baking soda** is probably one of the most common and most useful cleaning products in your cabinet. If you turn over a box of baking soda, you will notice there is only one ingredient listed: sodium bicarbonate. This is the chemical name for ordinary household baking soda.

**Hydrogen peroxide** is a simple product discussed throughout this book. The product label for common hydrogen peroxide states that the active ingredient is "Hydrogen Peroxide 3% (stabilized)," and the inactive ingredient is "purified water." **Vinegar** is another simple product. The product label states that it is "White distilled vinegar diluted with water to 5% acidity." Another one of the simplest, yet beneficial cleaners is **castile soap**. Originally made with 100% olive oil, today, castile soap is typically a combination of olive oil, water, and a third ingredient that turns the oil into soap and gives it more of a lathering quality. This third ingredient varies based on the manufacturer, but it may be something such as sodium

carbonate, sodium hydroxide, or potassium hydroxide. Depending on the type and brand you choose, castile soap may also contain other vegetable oils (such as palm kernel oil, coconut oil, avocado oil, jojoba oil, walnut oil, or hemp oil). In addition to these cleaning and sanitizing products, **alcohol** is one of the most-simple disinfectants. The product label on typical drugstore rubbing alcohol states that the active ingredient is “Isopropyl alcohol 70%,” and the inactive ingredient is “purified water.”

These are common, everyday cleaning, sanitizing, and disinfecting products you can use in the home. These products have relatively straight forward product labels with only a few ingredients. However, simple ingredients do not always mean the product is safe. For example, 30% white distilled vinegar only has two components—vinegar and water—but this industrial product is strong enough to kill weeds and must be handled with care as it can burn the skin and damage surfaces.

### **Complex Commercial Cleaners**

Many of us use commercial cleaning products, so investigating these product labels is especially important. In most cases, this is where we will find an abundance of chemicals that can cause both physical and health hazards if not used with care. Along with a list of product ingredients, the label for commercially available products may also include a list of “Precautionary Statements” that indicate potentially harmful effects of the product. These precautionary statements may be broken down into “Dangers,” “Warnings,” or “Physical and Chemical Hazards.” As budding scientists, we should read all precautionary statements before using any cleaning, sanitizing, or disinfecting product.

As you search for the ingredients on a product, note that due to proprietary law, all of the ingredients may not be disclosed on the product label. However, the active ingredients should always be listed. The active ingredient is the chemical in the product that causes the product to perform as it is intended. In cleaning products, active ingredients are often antimicrobial chemicals added to help it kill germs, bacteria, and viruses. For regular everyday cleaning, you likely do not *need* a product with active ingredients, but you may find that they have been added to your cleaner. For sanitizing and disinfecting, these active ingredients are necessary to eradicate harmful germs. For example, if a product says that it “removes mold and mildew,” then the active ingredient is the chemical in the product that gets rid of the mold and mildew. If a product says that it will “kill influenza and coronavirus,” then the active ingredient deactivates these viruses. Active ingredients are tested in laboratories to ensure their effectiveness. The other ingredients either boost the active ingredient(s), help in the cleaning process, or are dyes or fragrances. To find the other ingredients, you may have to go to the company’s website or contact the manufacturer directly. You may also search on websites that compile product label information such as the Consumer Product Information Database ([www.whatsinproducts.com](http://www.whatsinproducts.com)), the Smart Label Insight company directory ([www.smartlabel.org](http://www.smartlabel.org)), or the Environmental Working Group directory (<https://www.ewg.org/guides/cleaners/>)



For chemical-based products, the active ingredients are often listed in small print on the front of the product. For example, on a can of Lysol Disinfectant Spray, the ingredients are listed as follows:

**Active Ingredients:**

- Alkyl (50% C14, 40% C12, 10% C16) dimethyl benzyl ammonium saccharinate.....0.10%
- Ethanol.....58.00%

**Other Ingredients:**.....41.90%

**TOTAL:**.....100.00%



Listed next to the ingredient is a percentage. The percentage represents the proportion of that particular ingredient as compared to all of the ingredients in the product. In this can of Lysol Disinfectant Spray, out of all of the ingredients in the product, the ingredient *Alkyl (50% C14, 40% C12, 10% C16) dimethyl benzyl ammonium saccharinate* makes up 0.10% of the entire product. The second ingredient, ethanol, makes up 58% of the entire product. These two main ingredients are both antibacterial agents. The “other” ingredients make up 41.90% of the product. While they are not listed on the product label, these “other” ingredients are listed on the website for the Lysol parent company, Reckitt Benckiser.

Below is the full list of ingredients for Lysol Disinfectant Spray (Lemon Scent), as given on the Reckitt Benckiser product information website. Listed next to each ingredient is the function of the ingredient, according to the manufacturer’s website. Take a look and see if you know what the ingredients are. Take note of how many you can identify versus how many are not familiar. Also, notice that because the product is scented, it contains more ingredients. Yes, scents add to the chemical count.

**Lysol Disinfecting Spray (Lemon Scent)**

- Alkyl (50% C14, 40% C12, 10% C16) dimethyl benzyl ammonium saccharinate (**Antimicrobial Active** aka germ killer)
- Ethanol (**Antimicrobial Active** aka germ killer)
- Water (**Diluent:** Adjusts the concentration of ingredients in a product to deliver target benefits.)
- Butane (**Propellant:** Disperses the product from an aerosol can.)
- Propane (**Propellant:** Disperses the product from an aerosol can.)
- Ethanolamine (**pH Adjuster:** Controls the pH level of a product to ensure stability and maximize performance.)
- Fragrance/Parfum (**Fragrance:** Changes the odor of a product to impart a pleasant odor or impart a pleasant fragrance in the air during or after product use.)
- MEA-Borate (**Corrosion Inhibitor:** Helps maintain fresh product contents from corrosion or deterioration.)
- MIPA-Borate (**Corrosion Inhibitor:** Helps maintain fresh product contents from corrosion or deterioration.)
- Ammonium Hydroxide (**pH Adjuster:** Controls the pH level of a product to ensure stability and maximize performance.)
- Alpha-Hexylcinnamaldehyde (**Fragrance Component:** A component of fragrance oil.)
- Citronellyl Nitrile (**Fragrance Component:** A component of fragrance oil.)
- d-Limonene (**Fragrance Component:** A component of fragrance oil.)

- Dihydromyrcenol (**Fragrance Component:** A component of fragrance oil.)
- Dipropylene Glycol (Isomer Unspecified) (**Fragrance Component:** A component of fragrance oil.)
- Eugenol (**Fragrance Component:** A component of fragrance oil.)
- Orange Oil, Sweet (**Fragrance Component:** A component of fragrance oil.)
- Orange Oil, Sweet, Terpenes (**Fragrance Component:** A component of fragrance oil.)
- Isobutane (**Non-Functional Constituent**)
- t-Butyl Alcohol (**Non-Functional Constituent**)

The following are the ingredients in two more typical cleaning and disinfecting products, along with the purpose of each ingredient, according to the manufacturer.

### **Clorox Disinfecting Bleach (Regular)**

- Water (solvent)
- Sodium hypochlorite (helps to kill certain germs)
- Sodium chloride (table salt and rock salt; used to thicken and stabilize formulas)
- Sodium chlorate (one of the substances from the natural break-down of sodium hypochlorite)
- Sodium carbonate (an alkalinity builder added to improve cleaning efficiency; also known as washing soda and soda ash)
- Poly Diallyldimethylammonium Chloride (a film-forming or antiseptic agent in cleaning formulations; also known as polyDADMAC)
- Sodium hydroxide (an alkali pH adjuster in cleaning products; helps to remove soils that are fatty, oily or acidic; also known as caustic soda or lye)
- Polyacrylic acid, Sodium bisulfite terminated (used in laundry detergents to prevent soils from depositing on fabrics during the laundry cycle)

### **Palmolive Dish Detergent (Pure + Clear)**

- Water (consistency)
- Ammonium lauryl sulfate (cleaning and foaming agent)
- Ammonium laureth sulfate (cleaning and foaming agent)
- Lauramidopropylamine Oxide (cleaning and foaming agent)
- Isodeceth-6 (cleaning and foaming agent)
- Sodium Chloride (controls thickness)
- Poloxamer 124 (controls thickness)
- SD Alcohol 3-A (controls thickness and clarity)
- Magnesium sulfate (controls thickness)
- Fragrance (pleasant scent)
- Pentasodium pentetate (maintains product stability)
- Methylisothiazolinone (preservation)
- Benzisothiazolinone (preservation)
- Methylchlorisothiazolinone (preservation)
- Dyes (colors)
- Sodium bisulfite (maintains product stability)

These are just a few examples of the chemicals in three household cleaning and disinfecting products. Households that routinely use chemical-laden products risk exposure to an excessive amount of hazards every single day! As a result, we must know the common risks that are associated with these cleaning products.

## Section 11.2 Safety Data Sheets

As consumers, we must be proactive and seek out product safety information. For each hazardous chemical product that a company makes available to the public, the Occupational Safety and Health Administration (OSHA) requires that either the manufacturer, the distributor, or the importer provide a Safety Data Sheet (SDS) for end-users. In this “sheet” (which may be anywhere from 10 to 15 pages), the manufacturer details the physical and chemical makeup of the product along with safety precautions that should be taken. By law, employers must provide Safety Data Sheets to their employees who will be using these potentially hazardous chemicals. Although provided by employers, any person can access a product’s Safety Data Sheet. It may be beneficial to research the SDS for products you regularly use to understand what you are using in your home. Each Safety Data Sheet contains the following 16 sections:

Section 1: Product and company identification	Section 9: Physical and chemical properties
Section 2: Hazards identification	Section 10: Stability and reactivity
Section 3: Composition/information on ingredients	Section 11: Toxicological information
Section 4: First-aid measures	Section 12: Ecological information (non-mandatory)
Section 5: Fire-fighting measures	Section 13: Disposal considerations (non-mandatory)
Section 6: Accidental release measures	Section 14: Transport information (non-mandatory)
Section 7: Handling and storage	Section 15: Regulatory information (non-mandatory)
Section 8: Exposure controls/personal protection	Section 16: Other information

While these sheets provide a lot of information, pay special attention to Section 2: Hazards Identification, Section 4: First-aid measures, Section 8: Exposure controls/personal protection, and Section 11: Toxicological information.

For example, in the Clorox Regular Bleach Safety Data Sheet (SDS), Section 2 warns that the product “causes severe skin burns and eye damage” and describes what to do if the product gets on your skin and eyes. Section 2 of the Clorox Regular Bleach SDS also warns that “heart conditions or chronic respiratory problems such as asthma, chronic bronchitis, or obstructive lung disease may be aggravated by exposure to high concentrations of vapor or mist.” Section 4 (first aid) explains what you should do if the Clorox bleach comes into contact with your eyes or skin. It also states what to do if Clorox bleach is inhaled or ingested. Section 8 (physical and chemical properties) gives the chemical name of the product and describes the personal protection equipment that you should wear when handling Clorox bleach, including gloves and a long-sleeved shirt.

Section 11 (toxicological information) further details the toxicity of Clorox bleach. It states whether any of the ingredients in the product are known carcinogens (cancer-causing). For Clorox regular bleach, the Safety Data Sheet indicates that the “carcinogenic potential is unknown” or “no information available.” These statements indicate there may not be enough information to determine whether the product would cause cancer. The Environmental Working Group, a non-profit organization centered around protecting human health and the environment, notes that research is necessary to help consumers make informed choices on the safety and toxicity of products they are using, including whether the product is a carcinogen.

### **Section 11.3 Chemicals That Cause Health Hazards**

Let’s review some substances commonly found in a variety of cleaning products and some of their harmful effects.

**1,4-Dioxane** is a chemical found in many popular laundry soaps. It is a by-product of the industrial processing of synthetic ingredients (like PEG and polyethylene compounds). 1,4-Dioxane is an impurity, and the Environmental Protection Agency recognizes it as a “probable human carcinogen,” which means it can cause cancer. In studies, animals exposed to 1,4-Dioxane developed liver tumors at a higher rate than those who were not exposed. Other studies have been done testing exposure to 1,4-Dioxane in an occupational setting, but these studies were inconclusive, according to the EPA.

**2-Butoxyethanol**, also known as **Butyl Cellosolve**, is found in window cleaners, kitchen cleaners, and multipurpose cleaners. By law, 2-Butoxyethanol does not have to be listed on product labels. If 2-Butoxyethanol is inhaled, it can cause irritation, a sore throat, and tissue damage. Depending on the level, this chemical can contribute to things such as narcosis, pulmonary edema, and kidney and liver damage. If a cleaner containing 2-Butoxyethanol is used in an unventilated room, then the levels that you are exposed to can potentially exceed the levels considered to be safe according to workplace safety standards.

**Ammonia** is found in various cleaning products, such as glass cleaner. Ammonia can also be purchased as a stand-alone all-purpose cleaner. It is also used as a polishing agent for fixtures. Ammonia is an easily inhaled respiratory irritant that can cause a temporary cough, burning in the nose, throat, and respiratory tract. Inhaling ammonia can also cause more severe issues such as chronic bronchitis, asthma, and triggers asthma attacks in those who already have it. Some develop occupational asthma, such as workers who inhale too much of it on their jobs. Ammonia can be fatal if swallowed. It is also a skin irritant and can cause blindness if it gets in the eyes. Ammonia produces a poisonous gas if mixed with bleach.

**Borax and boric acid** are chemicals commonly used to make homemade cleaning products. Both borax and boric acid compounds help to stabilize the other ingredients that are in laundry soap and dish soap. They can also be released as a by-product of other chemicals. For example, some cleaning products contain an oxygen bleaching chemical called sodium perborate. As the bleaching process takes effect, it releases the chemical sodium borate. According to the European Union, these “bor-” related chemicals can be toxic to the reproductive system of both men and women, and they are considered chemicals that are of “very high concern.” Men who are increasingly exposed to boric acid have a higher chance of a lowered sperm count. Studies showed that male animals exposed to borax and boric acid

experienced testicular atrophy, while female animals experienced decreased ovulation and decreased fertility. Animal studies also show that borax and boric acid can affect the unborn fetus, causing abnormalities in the development of the skeleton and lower birth weight.

**Diethylene glycol monomethyl ether**, a chemical solvent (also known as DEGEME and methoxydiglycol), is often an ingredient in degreasers and other heavy-duty cleaners. The European Union has already banned DEGEME in cleaners as they suspect that it can cause damage to a person's fertility as well as the developing fetus. These chemicals are a part of a group of chemicals known as "glycol ethers," which have been linked to problems with fertility along with reproductive and developmental toxins. Studies have shown that both men and women who are regularly exposed to glycol ethers on the job are more likely to experience some type of reproductive problem, including low sperm count and birth defects. People are exposed to DEGEME and other glycol ethers when the skin absorbs the chemical or they are inhaled. California lists four of these glycol ethers on their Proposition 65 list of toxins that cause developmental problems in males.

**Ethanolamines (mono-, di- and tri-)** are a group of chemicals made of alcohol and amino acids. Some common forms of the chemical include monoethanolamine (MEA), diethanolamine (DEA), and triethanolamine (TEA). These ethanolamines are often added to soaps, shampoo, shaving cream, cosmetics, and cleaning products. They are dangerous because they can cause cancer and cause toxins to build up in bodily organs. The National Toxicology Program lists Nitrosodiethanolamine (NDEA) as a carcinogen, and studies have shown that NDEA can cause kidney tumors and liver cancer in animals. Both DEA and TEA have also shown to cause liver cancer in animals. These ethanolamines are toxic to the reproductive organs in humans and can damage the liver and kidneys. They can also negatively affect the memory and brain function of the developing fetus. The European Commission prohibits the use of diethanolamine (DEA), particularly in cosmetic products, to reduce a person's exposure to these harmful chemicals.

**Fragrances** are often added to many products. The word "fragrance" on cleaning product labels indicates there may be unnamed ingredients in the product. There is no requirement for listing the specific fragrance ingredients on the product label; therefore, when you use a product with "fragrance," it can be extremely difficult to determine what chemicals you are being exposed to. The International Fragrance Association (IFRA) states that fragrance ingredients are "basic substances used for odor or malodor coverage." The IFRA has listed over 3,100 different ingredients on its list of fragrances. Fragrances found in most cleaning, sanitizing, and disinfecting products are typically a mixture of many chemicals, including Volatile Organic Compounds (VOCs). VOCs are man-made chemicals present in liquid and solid products that can be released into the air as a gas once the product is used. These various gases emitted by VOCs can have adverse health effects. The array of chemicals in fragrances can potentially be absorbed through the skin, swallowed, and inhaled into the lungs, provoking asthma, allergies, lung irritation, skin irritation, and eye irritation. To avoid the potential toxins from fragrances, consider choosing "fragrance-free" products. However, even though a product is labeled "unscented," there may be fragrance chemicals added to cover up the odor of the product.

**Formaldehyde**, also known as formalin, is a pungent, colorless gas found in household products. Formaldehyde is a well-known carcinogen and has been designated as such by the United States government and the World Health Organization. When dissolved in water,

formaldehyde turns into formalin, a chemical that is used as an industrial disinfectant. Some chemicals in cleaning products release formaldehyde as a by-product. For example, manufacturers may add preservatives such as bronopol to a product. As the bronopol works to kill microbes faster and extend the life of the product, it releases the dangerous chemical formaldehyde. Avoid synonyms of bronopol such as 52-51-7, 2-Bromo-2-nitropropane-1,3-diol, 2-Nitro-2-bromo-1,3-propanediol, Bronidiol, Bronocot, Bronosol, Bronotak, HSDB 7195, Onyxide 500, beta-Bromo-beta-nitrotrimethyleneglycol, and more. Carpet cleaners, air fresheners, and building materials may also contain formaldehyde. Formaldehyde exposure occurs by inhaling the fumes or exposed skin coming in contact with the substance. This dangerous chemical can depress or slow down the central nervous system resulting in slowed brain activity. In lab tests, formaldehyde has also damaged genes. It also is a sensitizer that has been linked to asthma and allergic reactions, dizziness, depression, loss of sleep, chronic fatigue, joint pain, ear infections, headaches, and chest pain. The Environmental Working Group notes that formaldehyde exposure is worse on days where it is smoggy, as this is when the ozone levels are high.

**Oxalic acid** is a substance that is naturally found in plants, but in its concentrated form, it is highly corrosive. It is used in cleaning products as a rust remover and stain remover. It is also used to treat wood surfaces. Oxalic acid causes irritations to the eyes, skin, digestive tract, respiratory tract, and kidneys, with burns to these areas as well. It may also cause possible damage to an unborn fetus.

**Perchloroethylene or “PERC”** is found in dry-cleaning solutions, spot removers, and carpet and upholstery cleaners. PERC is a neurotoxin and possible carcinogen. A neurotoxin is a poison that adversely affects the nervous system. PERC is often inhaled and is linked to dizziness, loss of coordination, and damage to the liver, kidneys, and nervous system.

**Petroleum Distillates** are liquid chemicals derived from petroleum. They are solvents added to heavy-duty cleaners because of their ability to eat through tough grease and grime. The most common petroleum distillates are paint thinners or mineral spirits. They are highly flammable and can damage lung tissue and nerve cells. **Naptha** is a common petroleum distillate added to products used for cleaning oily or waxy surfaces. Exposure to naptha occurs by breathing it in or through skin exposure. Inhaling naptha can cause headaches, dizziness, and vomiting. Long-term exposure to naptha can depress the central nervous system and may cause kidney damage.

**Phenols** are chemicals used in antiseptics. They are also used as disinfectants in cleaning products. Phenols can be absorbed through the skin, a process that causes burns to the skin and mucous membranes. Exposure to phenols can be harmful to the liver, kidneys, respiratory tract, and central nervous system. It is also a suspected carcinogen.

**Phthalates** are substances that are often used to make plastics. In cleaning products, phthalates are used as a solvent or a fragrance. They are found in scented products such as air fresheners, soaps, toilet paper, cleaning and sanitizing products, etc. Phthalates may be labeled as “fragrance” on the label because companies do not have to disclose ingredients due to proprietary laws. Phthalates affect the body mainly through inhalation or skin contact. They can increase a person’s risk of developing asthma and allergies. Phthalates are endocrine disruptors. This means that they interfere with your endocrine or hormonal systems. Once phthalates get into the body, they can be found in the blood and urine.

Studies have shown phthalates can affect the development of a young child's nervous system and thyroid function. Women with increased phthalates have given birth to boys with abnormal genital development. Traces can also be found in a man's semen, the developing baby's amniotic fluid, and a nursing mother's breast milk. They can also cause reproductive problems such as reduced sperm count in men. As phthalates can penetrate all parts of the body, it is no surprise that they can cause cancerous tumors and have been linked to an increase in breast and prostate cancer.

**Quaternary ammonium compounds** (also known as QUATs, QACs, or QATs) are odorless, colorless chemicals that are added to a variety of cleaning, sanitizing, and disinfecting products to help kill germs. It can be difficult to readily identify Quats on a product's label, but most often, chemicals that end with "onium chloride" or "ammonium chloride" are Quats. Sometimes these products are advertised as "antibacterial." The Quat benzalkonium chloride is a severe eye irritant that also causes and triggers asthma. In fact, many Quats can trigger asthma symptoms in people who already have asthma or cause asthma to develop in people with no prior symptoms. This typically occurs in the form of "occupational asthma," where workers develop asthma due to frequent exposure. Direct skin exposure to Quats may cause allergic skin reactions and contact dermatitis, which may be as mild as dry red skin or as severe as a chemical burn. If Quats are splashed, sprayed, or a mist gets into the air, eye and mucous membrane injuries can occur along with nose and throat irritation. Quats are also dangerous if swallowed and can cause oral and gastrointestinal injuries. In addition, scientists suspect that Quats may be toxic to the reproductive system and developing fetus. In one research study, female mice exposed to Quats in disinfectants experienced lower fertility and the mice who did conceive had smaller babies. When the disinfectant was changed, these reproductive problems went away. Because many Quats are antibacterial agents, they can cause the growth of bacteria that are resistant to disinfecting products. Studies have also shown that Quats can damage genetic material.

**Sodium Hypochlorite (chlorine bleach)** is the most prevalent ingredient in chlorine bleach. It is an active ingredient often seen in sanitizers and disinfectants because it is readily available, inexpensive, and gets the job done. Along with the common household bleach found on store shelves, chlorine bleach can be found in scouring powders, toilet bowl cleaners, and household tap water that many people consume as drinking water. Chlorine bleach is a very strong corrosive, and if absorbed through the skin, it can cause irritation. Bleach corrodes many metals, so before using it, you should check to see if the bleach will damage your surface. Corrosive chemicals such as bleach can burn and cause damage when contacting the skin, eyes, nose, throat, and mouth. Sodium hypochlorite can also cause liver and kidney damage. Inhaling the fumes can cause minor irritations such as sore throat, coughing, and nasal irritations. The Association of Occupational and Environmental Clinics declared sodium hypochlorite an asthmagen, which means it can cause asthma. In the workplace, bleach can cause asthma in workers who inhale large amounts (such as cleaning staff), and it can trigger asthma attacks in people with asthma. It can cause minor irritations such as a sore throat, coughing, and nasal irritations.

If swallowed, the side effects can be severe and even fatal. Therefore, bleach must be used with caution and diluted properly. In 2011, it was the source of 35,000 poisonings. Children's lungs are still developing, which puts them at even greater risk if they inhale the vapors from the bleach. It can also be a thyroid disruptor, meaning that it can interfere with the thyroid

gland. The thyroid gland produces hormones for the body. These hormones regulate metabolic rate, heart function, digestive function, muscle control, brain development, and more. Sodium hypochlorite must be diluted and mixed appropriately. Otherwise, it can release toxic gas and even become combustible when mixed with ammonia, quaternary ammonium compounds (found in other disinfectants), vinegar, or other acids. When using bleach, be sure you know the concentration of sodium hypochlorite in your particular bottle and dilute it with the correct amount of water.

Note: Due to the vast array of chemicals such as chlorine and fluoride along with other impurities found in tap water, it is best not to drink it. It's already being absorbed through our skin, the largest organ of our bodies, whenever we bathe. We should strive not to add to this assault by drinking water straight from the tap. We can also add filters to our showerheads and faucets to help filter the chemicals out of the water that we are bathing in and drinking daily.

**Sulfuric acid** (sometimes spelled sulphuric acid) is an oily, colorless liquid made of sulfur, oxygen, and hydrogen. Because sulfuric acid is corrosive, it is often found in toilet bowl cleaners and drain cleaners to eat away at the gunk and germs on these surfaces. In smaller amounts, it can also be found in powdered laundry detergents, hand soap, and dish soaps. This strong acid is very dangerous and can burn exposed skin. Exposure to concentrated fumes can also be carcinogenic.

**Triclosan** and its relative, triclocarban, are substances found in most antibacterial liquid dishwashing detergents, deodorants, sponges, household cleaners, disinfectants, sanitizers, and hand soaps. Although it is an antibacterial and antifungal agent, triclosan can actually do the exact opposite and promote the growth of drug-resistant bacteria. This can occur from its overuse because microbes can develop resistance to antibacterial products. As triclosan is washed down sinks and toilets, like many other chemicals, it eventually ends up in the water system and agricultural fields where it is absorbed into the soil and gets into fruits and vegetables. When absorbed into the body, triclosan can collect in the tissues, interfering with the function of the thyroid gland. It can even gather in the umbilical cord blood of infants and in the breast milk of nursing mothers. Triclosan also causes skin irritation. In studies involving animals, those exposed to triclosan developed skeletal and heart muscles that did not contract normally.

In the article, *The Dirt on Antibacterial Soaps*, author Nicole Greenfield says the following about triclosan, "The dangers of triclosan (and a related antibacterial chemical, triclocarban) are many. For starters, it's an endocrine disruptor, meaning it interferes with important hormone functions, which can directly affect the brain in addition to our immune and reproductive systems. Specifically, the chemical disturbs thyroid, testosterone, and estrogen regulation, which can create a host of issues including early puberty, poor sperm quality, infertility, obesity, and cancer. Studies have also shown it can lead to impaired learning and memory, exacerbate allergies, and weaken muscle function. The impacts of prolonged exposure during fetal development, infancy, and childhood can be particularly severe, resulting in permanent damage." She goes on to say, "Studies have shown that the overuse of antimicrobial chemicals like triclosan might also be contributing to antibiotic resistance in bacteria, a major public health concern. At least two million people in the United States fall sick—and about 23,000 die—from antibiotic-resistant infections every year."



**Terpenes**, in nature, are found in plants and animals, helping them to fight off infections, and predators. In cleaning products, terpenes are found in orange, pine, and lemon oils used in a number of cleansers. They may also be in cleaners with essential oil fragrances and air fresheners. Terpenes can be dangerous because of the chemicals emitted by the reactions they cause. On hot, smoggy days, terpenes react with the ozone—a layer of protective gas surrounding the Earth. As terpenes react with the ozone, they form tiny particles like the particles found in haze and smog that cause lung irritation along with other health problems. Terpenes can also cause a reaction that forms formaldehyde, which can cause cancer, trigger asthma, allergic reactions, slow down brain activity, and a host of other health problems.

**Trichloroethane** is widely used as a solvent, an aerosol propellant, a thinner in liquid paper, and a cleaner. Exposure occurs by breathing it in or through skin exposure. Inhaling trichloroethane can cause a depressed central nervous system, dizziness, and death. Long-term skin exposure can result in damage to the liver, heart, and kidneys. Pregnant women should avoid exposure as a precaution for birth defects.

**Volatile organic compounds**, also referred to as VOCs, are a group of man-made chemicals that vaporize at room temperature. They are present in liquid and solid products that can be released into the air as a gas once the product is used. VOCs get into the air from products such as solvents, aerosol spray, liquid and dry cleaners, glue, and adhesives. These various gases emitted by VOCs can have adverse health effects. As VOCs are emitted into the air, they can negatively affect the air quality both inside and outside the home. VOCs can also seep into the water supply. Water treatment systems do not filter out volatile organic compounds, resulting in the contamination of lakes and rivers. In fact, in the United States, nearly all shellfish and fish have measurable levels of VOCs in their tissues that come from fragrances. Cleaning supplies can release volatile organic compounds into the air, resulting in asthma-related problems, allergic reactions, headaches, and other chronic respiratory problems.

In conclusion, these are just a few of the potentially dangerous chemicals in cleaning products. We have an obligation to ourselves and the members of our household to be knowledgeable about the cleaning products that we are using, then use them responsibly and with great care. This begins with educating ourselves and finding the safest products to use that will produce the desired results—whether a sparkly clean kitchen or a disinfected home to prevent the spread of disease.

## **Section 11.4 Physical Hazards of Cleaning Products**

Due to the very nature of chemicals, there are risks for physical hazards when using them. According to OSHA's Hazards Communications Standards (the Occupational Safety and Health Administration), a chemical poses a physical hazard when scientific evidence suggests that the chemical can cause a specific type of harm. Chemicals have three main classes of physical hazards: fire hazards, reactive hazards, and explosion hazards.

1. **Fire hazards**—Chemicals classified as fire hazards are dangerous because they may ignite when exposed to an ignition source such as sparks, flames, or heat. Fire hazards include combustible liquids, flammable liquids, flammable aerosols, flammable gases, flammable solids, oxidizers, and pyrophoric. While most of these fire hazards require oxygen and a spark to ignite, oxidizers can release a gas that

causes a fire in the absence of oxygen. Pyrophoric hazards are chemicals that can spontaneously ignite in air at temperatures of 130° Fahrenheit or below.

2. **Reactive hazards**— Reactive hazards are chemicals that release toxic substances such as toxic gases. An example is the reaction that occurs when mixing bleach with ammonia or other household cleaners producing a toxic gas. The substance produced by these chemicals can burn, explode, or produce high pressure, inflicting injury or harm to people who are nearby. Reactive hazards include organic peroxides, unstable (reactive) materials, and water-reactive materials.
3. **Explosion hazards**—This class of chemicals may explode when exposed to fire, heat, shock, or friction. This includes compressed gas (gas under pressure) and explosives. When working with an explosive, you must be mindful to avoid anything that is a heat source, has flames, or can cause a spark to avoid a potential explosion. When released, compressed gas may be very cold; however, it may explode if heated. You must be mindful not to heat containers containing compressed gas and avoid contact with your skin and eyes when working with this class of chemicals. Products in aerosol cans are examples of gas under pressure.

We must be very aware of the chemicals used to clean our homes and make sure that we use, store, and dispose of them properly to avoid any physical danger that could occur from mishandling them. No one wants to experience an explosion simply because an aerosol was placed near a heat source. We must be well-educated on the products that we are using and the hazards that they pose to ensure the safety of ourselves and the members of our household.

So how do you know if your cleaning product has known physical hazards? The first step is to check the product label and read the Warnings and Precautionary Statements, as mentioned in the previous section. For example, the label on the Lysol Disinfectant Spray indicates the following:

*“PHYSICAL HAZARDS: FLAMMABLE. Contents under pressure. Keep away from heat, sparks, and open flames. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.”*

The product label on a container of bleach states the following:

*“PHYSICAL AND CHEMICAL HAZARDS: Strong oxidizer. Flush drains before and after use. DO NOT use or mix with other household chemicals, such as toilet bowl cleaners, rust removers, acid or ammonia-containing products. To do so will release hazardous gases. Prolonged contact with metal such as silver may cause pitting or discoloration.”*

For further information on your product, you may also research the Safety Data Sheet.

## **Section 11.5 Health Hazards of Cleaning Products**

Now that we better understand where to find information about our cleaning products, this section will, Insha’Allah, help to remove some of the mystery surrounding the hazardous complex chemicals found in many cleaning products. Not only can dangerous chemicals cause physical harm, but they can disrupt the systems of the body, causing illness. These illnesses can be either systemic (affecting your entire body) or target specific organs.

According to OSHA's Hazard Communications Standard, a health hazard is a chemical for which there is scientific evidence that acute or chronic health problems may occur when exposed to the chemical. These harmful chemicals may cause severe or prolonged health effects with either short term or long-term exposure. You should not swallow harmful materials, allow them to come into contact with skin, or inhale them.

Chemicals have two main classes of health hazards: systemic effects and target organ effects.

1. **Systemic effects**—This category of health effects are those that can cause harm to the entire body. The systemic effects are classified as carcinogens, toxic agents, highly toxic agents, corrosives, irritants, and sensitizers. Carcinogens are those that are known to cause cancer. Toxic and highly toxic agents are those that may have life-threatening effects, even when exposed to small amounts for a short time. Toxic materials should not be inhaled, swallowed, or allowed to come into contact with skin. Corrosive substances are those that might visibly destroy human tissue, such as skin burns, eye damage, or damage to internal organs. When using corrosive materials, you should avoid contact with the skin and eyes, do not breathe in vapors or sprays, and wear protective clothing like long sleeves, long pants, and gloves. Chemicals that are an irritant may cause redness or rash on the skin. You should keep these away from your skin and eyes and avoid releasing irritants into the environment. Sensitizers are chemicals that may cause a person to have an allergic reaction after being exposed to the chemical.
2. **Target organ effects**—This category of health effects cause harm to a specific organ in the body. The target organ effects are classified as hepatotoxins, nephrotoxins, neurotoxins, blood/hematopoietic toxins, respiratory toxins, reproductive toxins, cutaneous hazards, and eye hazards. Hepatotoxins cause liver damage. Nephrotoxins cause kidney damage. Neurotoxins produce a toxic effect on the nervous system. Blood/hematopoietic toxins cause damage to the blood. Respiratory toxins are those that can damage any part of the respiratory system, including the nose, trachea, and lungs. Reproductive toxins can affect a person's ability to reproduce as well as the developing fetus. Cutaneous hazards are toxins that affect the skin. And lastly, eye hazards are those that affect a person's eyes or their ability to see.

Be sure to check the product label for the specific cleaner, sanitizer, or disinfectant that you have chosen and research those specific chemicals to determine their health effects. The label will often warn you of specific corrosiveness, toxicity, harm, or irritation that the product can cause. For example, the product label for Lysol Disinfectant Spray states:

*“CAUTION: Causes moderate eye irritation. Do not spray in eyes, on skin or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.”*

*FIRST AID: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.”*

The product label for bleach states:

*“WARNING: EYE AND SKIN IRRITANT. May cause severe skin and eye irritation. Do not taste or swallow. Use with adequate ventilation and avoid breathing vapors. Wear*

*safety glasses and rubber gloves when handling this product. Wash thoroughly with soap and water after handling.*

*IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.*

*IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin with plenty of water.*

*IF SWALLOWED: Do not induce vomiting unless told to do so by the Poison Control Center or doctor. Drink large amount of water. Do not give anything by mouth to an unconscious person.*

*IF INHALED: Remove to fresh air.”*

In addition to the product label, you may refer to the Safety Data Sheet to “jump-start” your product research.

## **Section 11.6 Specific Health Hazards**

While each cleaning product brings its own potential hazards, there are a few health conditions that are commonly associated with the harmful effects of these products. If any member of your household *already* suffers from one of these conditions, be especially mindful of the cleaning products that you choose to prevent worsening their condition.

### **Asthma**

Asthma is a disorder affecting the respiratory system, specifically the airways leading to the lungs. When a person is suffering an asthma attack, the airways can suddenly tighten up and become swollen or inflamed. This swelling of the airways blocks the flow of air and causes the chest to tighten, and the person may begin to wheeze, cough, or feel breathless. The Environmental Working Group gives a list of chemicals that can either cause or worsen asthma. Many of these ingredients are discussed in this book. These include 2-Bromo-2-Nitropropane-1,3-Diol; Alkyl Dimethyl Benzyl Ammonium Chloride; Alkyl Dimethyl Ethylbenzyl Ammonium Chloride; Didecyldimethylammonium Chloride; Diethanolamine; Dioctyl Dimethyl Ammonium Chloride; Distearyltrimonium Chloride; DMDM Hydantoin; Ethanolamine; Formaldehyde; Glutaral; Monoethanolamine Citrate; Quaternium-15; Quaternium-24; Sodium Hypochlorite (Bleach); Sulfuric Acid; and Triethanolamine. Studies have shown that continued exposure to chemicals that irritate the lungs and respiratory tract can cause asthma in people who previously did not have the condition and induce asthma attacks in people who already have the condition. A 2007 research study showed that out of 3,500 people who had no asthma symptoms, 30-50% developed an increased risk of asthma after using spray cleaners over a nine-year period. The study concluded that one of every seven adult asthma cases could be traced to the regular use of asthma-inducing cleaning products.

Chlorine bleach, one of the most commonly used household cleaning products, is a known asthmagen, meaning that this chemical can cause new asthma symptoms and provoke asthma attacks in people who already suffer from the condition. Be sure to follow the manufacturer’s instructions when diluting and using the product. Always properly ventilate the area to prevent inhaling dangerous fumes. Along with bleach, you should also be aware of cleaners that contain quaternary ammonium compounds (also known as quats), as discussed in Chapters 8 and 9. Quats include substances such as benzalkonium chloride, ethanolamines (mono-, di- and triethanolamine), and ammonia (ammonium hydroxide). These ingredients are added for their detergency and antibacterial qualities, but they can potentially induce asthma. Wear the appropriate personal protective equipment to limit your

exposure to the chemicals when using them.

Other cleaning products such as drain cleaners, oven cleaners, furniture polish, spray cleaners, disinfectants, air fresheners, and carpet cleaners may also contain chemicals that cause asthma when inhaled. Research your ingredient list to determine if the product is a potential asthmagen.

### **Decreased Lung Function**

In addition to the potential for causing asthma, some household cleaners can affect your lungs in other ways. The American Journal of Respiratory and Critical Care published a study that showed that using cleaning sprays and other products even as few as once a week could cause damage to the lungs. Because women are responsible for the majority of cleaning tasks in the home, the study indicated that women are more susceptible to decreased lung function due to exposure to cleaning products.

### **Cancer**

Some cleaning, sanitizing, and disinfecting products contain chemicals that are known or suspected to cause serious health effects, including cancer. These chemicals include formaldehyde, phthalates, styrenetrichloroethylene, synthetic musks, ethylbenzene, 2-butoxyethanol, thiourea, petroleum distillates, and 1,4-Dioxane. Many of these chemicals were previously discussed in the reading. When choosing cleaning products, refer to the Safety Data Sheet (SDS) to help you determine if any of the ingredients in the product are known carcinogens. Section 11 of the SDS will outline the specific toxicity related to the product, including any cancer-causing effects. While the above ingredients are scientifically proven carcinogens, the quantity or the length of exposure that leads to cancer is unclear.

Advocates agree that further scientific investigation is needed regarding the possible links between specific chemicals in cleaning products and cancer. The association of Breast Cancer Prevention Partners acknowledges that it is often difficult for consumers to understand product labels and the need for greater transparency in cleaning products. The organization touts that if products clearly state their ingredients, consumers are able to make more informed choices on the products they choose to clean their homes. The Environmental Working Group presented a study indicating a possible link between the use of household cleaning products and women developing cancer. The women who used cleaning products frequently were twice as likely to receive a cancer diagnosis as compared to those who did not use them as much. It is best to limit your exposure to these potentially dangerous chemicals, and wear personal protective equipment when using them.

### **Reproductive and Developmental Problems**

Along with the many health risks already stated, cleaning products may even contain chemicals that are known or suspected to cause reproductive or developmental issues. As discussed earlier, some of the chemicals known to cause these problems include borax (boric acid) and diethylene glycol monomethyl ether (also known as DEGME or methoxydiglycol); as well as ethanolamines such as monoethanolamine (MEA), diethanolamine (DEA), triethanolamine (TEA); phthalates, quaternary ammonium compounds, triclosan, and its relative triclocarban.

Borax is often used as a stabilizer in dish soap and laundry detergent. Glycol ethers are found in degreasers and heavy-duty cleaners. Like many other toxins, the most significant

effects of these chemicals arise in people who work with them regularly. For example, men who work at factories where boric acid is produced have a higher risk of a decreased sperm count and a lower libido. Similarly, men who work in environments that expose them to glycol ethers are more likely to have a reduced sperm count. Pregnant women who are continuously exposed to glycol ethers in the workplace are more likely to give birth to a child who suffers birth defects. Children exposed to these toxic solvents in the womb have a higher risk of a lower IQ, vision problems, decreased language skills, and developmental delays. Once again, experts agree that more research is needed to determine the potential long-term dangers of exposure to these common ingredients in products.

### **Endocrine Disruptor**

The endocrine system produces several hormones that send messages throughout the body. Hormones work in very small amounts helping the body to develop, grow, and reproduce. Hormones also control metabolism, immune functions, sleep, behavior, and stress. They are involved with how the body deals with diseases, including diabetes and cancer. Endocrine disruptors are chemicals that “disrupt” the natural process of hormones sending messages throughout the body. The National Institute of Environmental Health Sciences reports that endocrine disruptors may reduce fertility in both men and women. They can also cause girls to experience early puberty. Other negative health effects include an increase in breast cancer, ovarian cancer, and prostate cancer. The World Health Organization also reported that endocrine disruptors mimicking normal hormones pose a threat to human health, and the prevalence has grown over the past decade.

Some known endocrine disruptors in cleaning products include phthalates, glycol ethers, triclosan, and triclocarban, which are discussed in greater detail earlier in this chapter. Cleaning products are not the only place we find endocrine disruptors. They are also in the chemicals: BPA (plastics and canned food linings); dioxin (in meat and animal products); atrazine, perchlorate, lead, and arsenic (in the drinking water); mercury (in seafood); perfluorinated chemicals (in non-stick cookware); and organophosphate pesticides.

### **Allergies**

When a foreign substance enters the body, the immune system reacts to help the body deal with the foreign substance. When the immune system reacts abnormally, the response is an allergic reaction. Allergens cause this type of reaction by the immune system. Cleaning products cause a variety of allergies to develop, including skin, eye, nose, throat, and lung reactions. These reactions may be minimal such as redness or a sore throat, but prolonged exposure to allergens can lead to developing or worsening asthma, eczema, headaches, dermatitis (skin inflammation), and rhinitis (inflammation in the nose). Products that contain surfactants and solvents—additives that make cleaning products more effective—are even more likely to invoke an allergic response. Fragrances and preservatives are also known to cause allergies. To reduce your risk of an allergic reaction, be sure the cleaning area is properly ventilated, and the substance is safely diluted before using it. Wear gloves if necessary, to avoid contact with your skin. People with known allergens may need to stay away from the area being cleaned until it is clear of any fumes or chemical substances.

## **Section 11.7 Risks vs. Hazards of Cleaning Products**

Whereas a hazard indicates that using the cleaning product can potentially cause harm, risk indicates the probability or likelihood of harm by the way a product is used. The product can be a low or high-level hazard, but the risk of harm can be lowered or increased by how it is

used. Consequently, a low hazard cleaner can have a high risk of causing harm and even become life-threatening because of misuse. Let's look at a few examples.

From time to time, we may need to eliminate pests from our homes. It is a common practice to grab a can of Raid and start spraying. Spraying a few bursts of Raid in the corner of a room where you see ants would be low risk to your health. But continuously spraying Raid all over the room would greatly increase your risk of negative health effects. You may begin to cough, or your eyes may burn from the chemicals. Even spraying just a little Raid on a kitchen countertop, while preparing dinner, could also increase your risk because the chemicals could get into the food and cause those who eat the food to become sick. If you continued to spray a lot of the chemicals every day, for prolonged periods to get rid of the ants, this might even lead to long-term health effects. Here is another example: If you disinfect a bathroom once a week with diluted bleach, the risk to your health is low, especially if you use the proper protective equipment, and the room is adequately ventilated. If you use that same bleach solution to disinfect a changing table in an infant/toddler classroom 25 times a day, the risk of negative health effects is much higher for both the user and the children and could be worse if the bleach is not diluted properly.

Along with over-using a product, improper dilution greatly increases the risk of health hazards. This is especially true for people who regularly use a chemical that must be diluted, such as cleaning staff, and those living or working in that environment. When a product is being diluted, the user is exposed to the concentrated fumes. Prolonged exposure increases the risk of the product being absorbed into the skin and inhaled. Be sure to follow the manufacturer's instructions to add enough water (or other solvents) to eliminate the risks. Also, mixing the wrong cleaning products increases the risk of both health and physical hazards, such as a possible explosion.

Using spray bottles and aerosol cans also increase your risk of experiencing negative health effects. While these mechanisms help disperse cleaners onto a surface, they also emit a fine mist of chemicals into the air. Prolonged exposure increases the likelihood of breathing problems, asthma, or other respiratory issues.

## **Section 11.8 What's in Your Cleaning Cabinet?**

Take a moment to research the cleaning, sanitizing, and disinfecting products in your home. Note the physical and health hazards on the product labels. Research a little further to see if any of the chemicals in your cleaning products can potentially cause serious long-term health effects that are not listed on the product.

### **Tips to Reduce the Risk of Physical and Health Hazards**

- ✓ Read product labels carefully and use them as directed.
- ✓ Continue to research the product if the label gives insufficient information.
- ✓ Read the Safety Data Sheet related to that particular product.
- ✓ Wear personal protective equipment (long pants, long-sleeved shirt, gloves, mask, etc.) when handling potentially dangerous chemicals.
- ✓ Be sure your cleaning, sanitizing, or disinfecting solution is properly diluted.
- ✓ Be sure the area you are cleaning is properly ventilated.
- ✓ Only use the product when necessary (such as only using bleach to disinfect rather than for everyday cleaning).
- ✓ Store your product as recommended by the manufacturer.





## Chapter 12: Healthy Cleaning

There are many products you can choose to clean your home. In the previous chapters, we learned that some cleaning products contain toxic chemicals that can cause harm to the person who is cleaning as well as others in the household. Although they get the job done, these toxic cleaning products are not the only option for a sparkling clean home. In this chapter, we will focus on healthy cleaning—using cleaning products that are much less likely to cause adverse health effects for you and your family. Healthy cleaning will, Insha’Allah, help to prolong your life rather than cause damage to it.

### Section 12.1 Healthy Cleaning vs. Green Cleaning

Healthy cleaning is not necessarily the same thing as green cleaning. “Green cleaning” has become a popular phrase, but what exactly does this mean? Herein lies the problem. There is no legal definition for “green cleaning,” leaving it to the interpretation of many. Green cleaning is using safer cleaning products and methods that will not adversely affect our health and environment. However, this is not necessarily the definition used by others. A product can be labeled green because it is biodegradable, is produced using less water, is packaged using recycled materials, is manufactured by a company that donates a portion of their profits to environmental causes, or for many other reasons. Cleaning products labeled with terms such as “non-toxic,” “green,” “natural,” “eco-friendly,” or “organic” are not necessarily healthy products. Manufacturers are not required to prove these claims listed on their products, so stating that a product is “green” does not mean it is a safer and healthier choice.

The Environmental Protection Agency (EPA) notes that manufacturers are not required to list all ingredients on their product labels, which includes “green” cleaners. Government regulations only require the labels to list the active ingredients in disinfectants, sanitizers, and fungicides that kill viruses, mold, and bacteria. Cleaning products without these active ingredients are not required to list the ingredients. Therefore, you may have a product that contains unlisted harmful ingredients. This lack of transparency and little to no government regulation makes it difficult for consumers to make wise choices when choosing their cleaning products.

The Natural Resources Defense Council (NRDC)—a non-profit organization that works to promote “clean air, clean water, and healthy communities”—found that certain household products labeled as “all-natural” emitted chemicals classified as hazardous or toxic during testing. Those tests showed that some of the harmful chemicals were not safe even in minimal amounts. They found that the toxic chemicals emitted by the products labeled “all-natural” were not very different from conventional household products. The Federal Trade Commission (FTC)—a government organization that works to prevent unfair business practices—does have guidelines for manufacturers using terms such as “green” and “organic.” However, the FTC rarely enforces those guidelines as they are guidelines and not regulations. To safeguard our family’s health and welfare, we must learn to identify and choose safer cleaning products.

### Section 12.2 Choosing Safer Products

Choosing safer cleaning products that are effective will help to protect the health of those in your household. If a member of your household already suffers from a chronic health condition, it is even more critical that you choose cleaners that will not exacerbate the

condition. For example, if a member of your family has asthma, eczema, or even cancer, you want to be sure that your daily cleaning routine does not cause them any additional harm.

One of the healthiest, yet effective cleaning products you can use is **castile soap**. Pure castile soap is a vegetable oil-based soap made with olive oil and sodium hydroxide. Although it contains sodium hydroxide, the way castile soap is processed produces a non-toxic end product. Some varieties of castile soap may have other vegetable oils added to them, such as coconut oil, jojoba oil, or hemp oil. This time-honored soap is quite versatile and can be used to clean your body, your home, and your clothing. For safer cleaning, castile soap is one of the best cleaners you can choose. Never mix castile soap (an alkali) with vinegar (an acid). While the mixture of these two chemicals is not toxic, the vinegar will cancel the soap properties and reduce the castile soap to oil. Just like any other product, always read the ingredients. Some brands may be labeled as “castile soap” while they contain a range of ingredients that are not traditionally in the product. Do your research and make sure the castile soap you are using is the “real deal.”

Another gentle cleaning product is **dish soap**. While dish soap is gentle on surfaces, there are countless varieties, some healthier than others. For a healthier, non-toxic dish soap, choose a product that is fragrance-free, dye-free, and does not have toxic ingredients such as Quats, diethanolamine (DEA), formaldehyde, monoethanolamine (MEA), phosphates, sulphuric acid, triclosan, triethanolamine (TEA), or other toxic ingredients. Other healthy cleaning options discussed throughout this guide include **baking soda**, **vinegar**, and a little warm water and elbow grease.

**Washing soda**, also known as soda ash, is non-toxic, but it can irritate the eyes. The chemical name for washing soda is sodium carbonate, just slightly different from its cousin sodium bicarbonate (aka baking soda). Washing soda is used in homemade and commercial laundry products because it helps to get rid of tough stains. Washing soda attaches itself to minerals that make the water hard, helping the laundry soap to bypass these minerals and penetrate stains even further. Washing soda can also help to remove grease from pots and pans, remove soap scum, remove coffee stains from surfaces, and unclog drains. Wear gloves and eye protection when cleaning with washing soda, as it can cause serious eye and skin irritation. And be sure to keep your washing soda away from children, as large amounts can be dangerous.

### **Safer Sanitizing & Disinfecting Products**

For healthier sanitizing, consider using 3% hydrogen peroxide or 5% distilled white vinegar rather than products with chemicals that are hazardous to your health. To limit your exposure to toxic chemicals, you may also choose “heat sanitizing” with a steam machine or your dishwasher. For healthier disinfecting, consider using 70% alcohol. When using alcohol, be sure to ventilate the area properly, and wear the appropriate personal protective equipment (PPE). Having adequate ventilation and wearing PPE to protect your face and skin will go a long way in limiting your exposure to the chemicals in disinfectants. Also, be sure to dilute the product correctly, as this will help to reduce your exposure to the chemicals.

### **Identifying Safer Commercial Products**

When searching for commercial cleaning products, keep in mind that some products are safer than others. In Chapter 8 and Chapter 9, we discussed some of the better alternatives for cleaning, sanitizing, and disinfecting products. Some of the primary active ingredients

found in commercial products include chlorine and quaternary ammonium compounds. But for a safer cleaning alternative, consider choosing products with citric acid, caprylic acid, hydrogen peroxide, silver, thymol, or ethanol as the active ingredient. For more information on each of these active ingredients, refer to Chapters 8 and 9. These products are available as ready to use solutions in spray bottles or as concentrated solutions that require dilution with water. These cleaning products are packaged and labeled in the same manner as other cleaning products.

As a reminder, you can look at the front of the product label to locate the active ingredient. In the Seventh Generation Disinfecting Multisurface Cleaner, the ingredients are listed as follows:

**ACTIVE INGREDIENT:**

Thymol.....	0.05%
<b>OTHER INGREDIENTS.....</b>	<b>99.95%</b>
<b>TOTAL.....</b>	<b>100.00%</b>



With thymol as the active ingredient, the Environmental Working Group considers this product from Seventh Generation a safer alternative when choosing a disinfectant. Like other commercial cleaning products, the Seventh Generation label indicates the various viruses and bacteria the product will “kill.” The difference lies in the transparency of the “OTHER” ingredients. Here we find a wealth of information. Not only does this multisurface cleaner list the active ingredient, thymol, it also lists the other ingredients included in the product allowing users to easily identify what they are using. The company also lists a website where the user can find more information about the product.

If you choose to purchase a commercial cleaner, along with reading the active ingredients, another way to identify a safer cleaning product is to look for the seal of a third-party certifier. Third-party certifiers are organizations that evaluate products using scientific-based criteria to determine the environmental and health impacts of the product. Third-party certifiers assess and certify products, then publish a list of those products to help consumers identify less hazardous cleaning products. The standards these third-party certifiers developed limit or prohibit chemicals that can cause the following issues: asthma, cancer, corrosive damage to skin and eyes, reproductive damage, toxicity to aquatic animals, indoor air pollution, and other health and environmental problems.

There are a couple of well-known third-party certification agencies. Green Seal is based in the United States and most often used by institutions purchasing cleaning products. For a list of Green Seals' certified products, go to <https://www.greenseal.org/certified-products-services?s=Household+Cleaning+Products>. Safer Choice is another U.S. based organization and is part of the Environmental Protection Agency (EPA). They certify both consumer and institutional products. For a list of the EPA Safer Choice certified products, go to <https://www.epa.gov/saferchoice>. Although designed to help you find safer alternatives, note that these certified products still contain chemicals. So, consider all of the ingredients and choose the product best suited for you and your family's health.

If you are interested in purchasing a product certified by one of these organizations, look for these third-party certification logos or seals located on the product container:



Whether the product has a certification or not, to limit your exposure to chemicals, consider choosing a product that is dye-free, fragrance-free, and does not have a chemical odor. According to the EPA Fact Sheet for Families, the following are ingredients to avoid if you are looking for a safer cleaning or sanitizing product:

- *2-butoxyethanol (or ethylene glycol monobutyl ether) and other glycol ethers*
- *Alkylphenol ethoxylates (some common ones: nonylphenol and octylphenol ethoxylates, octoxynols)*
- *Bisphenol A*
- *d-Limonene*
- *Dyes (may be listed as FD&C or D&C)*
- *Ethanolamines (common ones to look out for: monoethanolamine [MEA], diethanolamine [DEA], triethanolamine [TEA])*
- *Fragrances*
- *Parabens*
- *Phthalates*
- *Pine or citrus oil*
- *Quaternary ammonium compounds Look out for these:*
  - *alkyl dimethyl benzyl ammonium chloride (ADBAC), benzalkonium chloride, dodecyl-dimethyl-benzyl ammonium chloride*
  - *lauryl dimethyl benzyl ammonium chloride ◇ benzyl-C10-16-alkyldimethyl, chlorides*
  - *benzyl-C12-16-alkyldimethyl, chlorides*
  - *benzyl-C12-18-alkyldimethyl, chlorides*
  - *benzyl-C16-18-alkyldimethyl, chloride*

- *didecyl and didecyl dimethyl benzyl ammonium chloride*
- *Triclocarban*
- *Triclosan*
- *Bleach or sodium hypochlorite*

The Environmental Working Group (EWG) also has search tools that help the consumer dive deep into the ingredients and risks associated with many commercial products. EWG's database consists of more than 2,500 products and contains chemicals as well as "green products." It also provides a rating for each product based on the health and environmental risks associated with each ingredient. The site issues an overall report card on the product based on the level of concern that is present for each ingredient. There is also a list of recommended products. The EWG advises consumers to avoid antibacterial cleaners since there is no added protection against illness, and these antibacterials often contain pesticides. Air fresheners are another product you may want to avoid as they often contain many unlisted and often untested chemicals. The EWG also advises consumers to avoid drain cleaners as they contain highly toxic chemicals. To access EWG's cleaner search tools, go to <https://www.ewg.org/guides/cleaners/>.

### **Tools for Healthy Cleaning**

When choosing tools to use with your safer cleaning products, microfiber cloths and mops are the way to go. They remove organic matter such as dirt, grease, and oils, as well as up to 99% of germs from surfaces. Microfiber cloths and mops are washable between 500 to 1000 times, so they reduce landfill waste. They also work great with safer cleaning products, and they need less cleaning detergent to be effective. They are great replacements to sponges since a sponge is a breeding ground for germs.

### **Section 12.3 Homemade Cleaning Products**

After learning of the harsh chemicals in many cleaners, you may decide to make your own healthy cleaners with products that may already be in your home. It only takes a few minutes to do, is just as effective as commercial cleaners, is non-toxic, and will often save you money. Some of these healthy cleaning products include castile soap, distilled white vinegar, baking soda, cornstarch, hydrogen peroxide, lemon juice, and water, to name a few. Although these natural products can be found in your home cabinets, we must still know how to use them properly and the appropriate surfaces for using them. But do not despair, naturally cleaning your house is no more difficult than cleaning it with harsh chemicals or safer products. Also, their usage will help to improve your indoor air quality and aid in keeping your family safe from the health risks related to store-bought cleaners.

### **Healthy Cleaning Tips**

Insha'Allah, the following suggestions will aid you with healthy cleaning.

- ✓ Always prepare your solutions according to label instructions.
- ✓ Make sure that your spray bottles are BPA free and heat resistant.
- ✓ Label the spray bottle or container indicating the solution and where to use it.
- ✓ Include a "use by" date based on the shelf life for the diluted solution. For example, castile soap solutions begin to lose their effectiveness after a couple of weeks. The "use by" date should be labeled two weeks from the solution preparation time.
- ✓ Make solutions in small amounts that will be used within the desired "use by" time frame. Small batches also help to reduce the risk of bacteria building up in recipes that

use water without any preservatives. Because they do not contain preservatives, it is best that these recipes do not sit for long periods of time.

- ✓ Store your prediluted solutions properly—in a safe place, away from flammables, children, pets, and the sun.
- ✓ Make sure that you are using tried and tested recipes. Do not combine products that are untested. They could be toxic combinations and cause injury to you and your family.
- ✓ Remember, reactions can still occur with natural products. Test all your products before using them in an inconspicuous area. Just because they are natural does not mean that they will react the same on all surfaces. It will also allow you to become familiar with the results you are looking for.
- ✓ Keep your area well-ventilated when cleaning just in case you have a sensitivity to the natural cleaning products. Open the windows and turn on an exhaust fan if one is available. Wear protective clothing, including gloves. Note that the smell of plain vinegar dissipates, so you don't have to worry about it lingering a long time in the air.

### **Healthy Cleaning Recipes**

If you desire to make your own homemade cleaners, the following section contains suggested DIY recipes for natural cleaning products. You may opt to use one of these recipes or do a little research and create a recipe of your own. Please note that essential oils can be added, but be sure to understand the nature and purpose of the oil. Since essential oils are not a staple product in all households, if a recipe below lists one as an ingredient, it can be omitted if you do not have them in your home. Please refer to the manufacturer's instructions for the items that you will be cleaning.

#### **All-Purpose Cleaner**

##### Option 1 - Soap Based All-Purpose Cleaner

###### Spray Bottle Mixture

- ¼ cup of castile soap or 1 teaspoon of dish soap
- 1 quart of water
- ¼ teaspoon tea tree essential oil (optional)

##### Option 2

- ½ teaspoon washing soda
- ½ teaspoon castile soap
- Hot water to the desired amount

##### Option 3 - Vinegar Based All-Purpose Cleaner

- 1 cup vinegar
- 1 cup of water
- 20 drops of essential oil (optional)
  - Lemon essential oil (odor remover)
  - Tea tree essential oil (antibacterial)

#### **Spot Remover for Carpets**

##### Option 1

- Baking soda for coating the stain
- 50/50 vinegar and water solution

## Option 2

- 50/50 castile soap and 3% hydrogen peroxide solution

## **Removing Mildew**

### Option 1

- 5% White vinegar (apply full strength, not diluted)

## **Glass Cleaner**

### Option 1

- 1 tablespoon castile soap
  - 1 quart of water
- After cleaning, rinse with water.

### Option 2

- 1 part vinegar
- 1 part water

## **Drain Cleaner**

- ½ cup vinegar
- ½ cup baking soda

## **Grout Cleaner**

### Option 1

- 2 cups baking soda
- 1 cup hydrogen peroxide (add to the baking soda)
- Warm water for rinsing

### Option 2

- ½ cup baking soda
- ¼ cup 3% hydrogen peroxide
- 1 teaspoon castile soap (added to the baking soda & peroxide solution)

## **Abrasive Scrub**

### Option 1 - Water-based stains

- 2 tablespoons baking soda
- 1 teaspoon 3% hydrogen peroxide

### Option 2 - Oil-based stains

- 2 tablespoons baking soda
- 1 teaspoon water

## **Oven Stains**

- Baking soda sprinkled on stains and moistened with water (let sit overnight)

## **Mopping Solution**

### Option 1

- ½ cup castile soap







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## Chapter 13: Protecting Our Children While Cleaning

As you work to create a safe living environment, free from harmful germs, bacteria, and viruses, be mindful of the hazards that cleaning products pose to children. Our first line of defense is to protect our families from toxic chemicals in cleaners that are meant to kill germs. Because children are still growing and changing, their developing bodies are significantly impacted in the presence of dangerous cleaning chemicals, including unborn babies (fetuses) developing in the womb. If your child already has asthma, eczema, dermatitis, cancer, or other chronic conditions, you should be especially mindful of the cleaning products used in the home as they may cause the child's health to worsen. Children spend a lot of time exploring—playing and crawling on the floor, putting items in their mouths, and looking for new territory to conquer. You don't want your cleaning products to be the next item they explore, even if the product is considered "safer" or "natural." Contact with cleaning chemicals can lead to skin, eye, nose, throat, and other irritations. Worse yet, ingesting these chemicals can lead to poisoning and even death. As the children in your home learn and discover, do your best to make sure their immediate environment is safe and free of toxic chemicals that could cause them harm.

### Section 13.1 Choose Safer Cleaning Products

Throughout this guide, we have discussed several options for cleaning products. Some have known hazards, while others are safer for you and the members of your household. If you have children in the house, choosing cleaning products less likely to cause physical and health hazards is paramount. Swap out some of the dangerous chemicals discussed in Chapter 11 and replace them with safer tools and cleaning products. For example, if the table is dirty, consider wiping it down with castile soap and water rather than a heavy-duty cleaner with bleach. When disinfecting smaller objects, consider using 70% alcohol that will quickly dissipate, rather than harsh chemicals that leave harmful residue. For more tips on healthy cleaning, refer back to Chapter 12 and work to incorporate more of these safer choices into your cleaning regimen.

Whenever possible, look for products packaged in childproof containers. Childproof containers give children more of a challenge as they work to twist, pop, pry, and bite the lid off. These types of containers also make it less likely for anyone to spill the product or open it unintentionally. However, they are still not 100% safe.

Another simple way to protect your children is to only buy what you need. Fewer harsh chemicals in the house lowers the risk of harm. For example, if you only intend to use chlorine bleach to disinfect the bathroom, and you don't need it for anything else, then consider having only one small bottle in the home, rather than four or five large jugs. Also, keep in mind that cleaning products have a shelf life. And whether you purchase ready-made products from the store, dilute them yourself, or make your natural cleaner, they will often serve you best when made in small batches and used within the designated time frame.

### Section 13.2 Store Cleaning Products Out of Reach of Children

Whether they are "natural" or packed with dangerous ingredients, always store products out of reach and out of sight of children. Placing cleaning products out of sight and out of reach is especially important for younger children who are naturally curious and do not yet understand their dangers. This reduces their temptation to climb on furniture, chairs, or whatever they

can find to reach what you have put away on a high shelf. Also, consider locking the cabinet or area where your cleaning products are stored to guard against those inquisitive minds who want to explore what's inside. Cabinet locks can be purchased online, from your local hardware store, or big box store.

Keep your cleaning, sanitizing, and disinfecting products in their original containers. The original containers are specially designed to maintain the integrity of the product by preventing leakage, evaporation, losing its original potency, and keeping the product more secure. The original containers also help prevent accidental poisoning, from both children and adults. When making your cleaning products, use containers and spray bottles that are tested and designed for use with cleaning chemicals. Always label your homemade cleaning products, and never place them in food storage containers. Placing chemicals in food containers increases the chances of a child thinking that the product is food, ingesting it, and becoming poisoned. Store flammable chemicals away from heat sources and away from direct sunlight.

Keep the following in mind after using a cleaning product:

- ✓ Be sure to place the cap or lid back on tightly. If the top is childproof, test it out to ensure you placed it back on the product correctly, and a child would have difficulty opening it.
- ✓ Check spray bottles to ensure the nozzle is turned to the off position.
- ✓ Immediately put cleaning products away after using them.
- ✓ When using products that need to be diluted, put the container away after you have measured enough and made your dilution.

### **Section 13.3 Remove Small Children from the Area When Cleaning**

Before getting started with cleaning and freshening your home, it is a good idea to remove small children from the area and make sure the area is adequately ventilated. If you are using harsh chemicals, removing children from the cleaning area prevents them from touching, inhaling, or ingesting toxins. Be sure they are far enough away that they will not be affected by the fumes. If you use spray bottles, spray in a manner that the mist does not travel toward the area of the child. Children out of the area can also help keep the area clean as you clean.

As you prepare to clean, always read, and follow the instructions on the product label. Reading the instructions and using the product correctly is a simple way to protect your family from harm.

### **Section 13.4 Be Prepared for an Accident**

After taking all of the above precautions, it is important to still prepare for an accident. Place the Poison Control Center phone number 1-800-222-1222 in an easily visible place in your home. Also, consider saving the number in your cell phone. Text the word POISON to 797979 to receive a link to save the number in your phone. You can reach the Poison Control Center 24 hours a day, 7 days a week, and it is staffed by trained professionals, including nurses and pharmacists. You can also get poison control help online at [www.poisonhelp.org](http://www.poisonhelp.org). On the website, you can answer a few questions to get quick advice on how to treat the problem. For example, if you have a 2-year-old who swallows Dawn dish soap, but is not displaying any abnormal symptoms, the website will give you the following advice:

*Dawn Dishwashing Liquid*

*Age group: 5 and Under*

*Having effects: No*

*What happened: Swallowed something*

*Background: Dawn Dishwashing Liquid is a dishwashing soap. When swallowed, it can cause upset stomach, vomiting, and diarrhea.*

*Recommendation: Rinse out mouth and drink a small amount (no more than 4 ounces) of clear liquid.*

***If symptoms develop or if you have questions, call us right away at 1-800-222-1222.***

- *Our nurses and pharmacists are waiting to help you.*
- *This service is free, confidential, and available 24/7*

If you have an 8-year-old who spills bleach on their skin and is having a reaction, the website will give you the following advice:

*Bleach (Hypochlorite - Liquid) (General Formulation)*

*Age group: 6 to 12*

*Having effects: Yes*

*What happened: Got something on the skin*

*Background: The product you selected is a bleach, stain remover or disinfectant. These products can cause burning of the skin as well as the mouth, throat and stomach. The onset of effects can be delayed. Severe injury can occur if the product gets into the lungs.*

***Recommendation: Wash the area with soap and water. Because symptoms are present, please call us at 1-800-222-1222 now.***

- *Our nurses and pharmacists are waiting to help you.*
- *This service is free, confidential, and available 24/7.*

The Environmental Protection Agency recommends that you do the following when dealing with a child with chemical poisoning.

*“If a child has swallowed or inhaled a toxic product such as a household cleaner or pesticide, or gotten it in their eye or on their skin*

- *Call 911 if the child is unconscious, having trouble breathing, or having convulsions.*
- *Check the label for directions on how to give first aid.*
- *Call the Poison Control Center at 1-800-222-1222 for help with first aid information.”*

If you have children in the home, check the label and read the first aid information before using the product. Reading the first aid label in advance will prepare you in case of an accident. The EPA recommends these general first aid tips.

**Swallowing a poisonous chemical:** Treatment varies based on the substance swallowed. Read the label and call emergency for help. Do not induce vomiting unless it says to do so on the product label or emergency personnel instruct you to do so. Caustic chemicals (things that burn) or petroleum-based chemicals can do more harm if the person attempts to vomit. If needed, Syrup of Ipecac can be used to induce vomiting. It is good to have on hand one ounce of Ipecac for each child in the house. Be very careful and use it as directed. Do not give it to children under one year of age. High doses of Syrup of Ipecac can lead to irreversible heart damage, severe poisoning, and death.

**Eye contact with poisonous chemical:** If a chemical splashes into the eyes, hold the eye open and rinse the eye with clean running water. You can use tap water or water from a clean hose. Let the water run at a gentle stream and continue rinsing the eye for 15 minutes. Do not use eye drops and do not place any chemicals or drugs into the water you are using to rinse the eye.

**Skin contact with poisonous chemical:** If a chemical gets on the skin, soak the skin with clean water, and remove the contaminated clothing. Wash the area with soap and water.

**Inhaling poisonous chemical:** Get fresh air immediately. Loosen tight clothing. Release the fumes by opening windows and doors. Call emergency for help if a person has stopped breathing.

### **Section 13.5 Teach Children How to Safely Clean**

Lastly, if the children in your household are old enough to help clean, use caution when training them to help around the home. Make sure the child's cleaning task is age-appropriate and that the child wears appropriate clothing for cleaning. Children who are old enough to handle cleaning products should only clean with simple, non-hazardous products such as plain soap and water. Children should not use harsh chemicals when cleaning, and they should not be responsible for sanitizing or disinfecting.

The following is a list of appropriate cleaning tasks for children. Of course, you must determine if your child can perform the job based on age, physical ability, and maturity level.

Possible cleaning tasks for children ages 2 to 3 years old:

- Put away toys in the toy bin
- Place clothes in a dirty clothes hamper
- Help to clean up their own spills and messes
- Wash their own hands with supervision

Possible cleaning tasks for children ages 4 to 5 years old:

- Clear dishes from the table with supervision
- Hang up clean towels
- Clear floors of clutter
- Clean countertops with supervision
- Fold clothes with supervision
- Clean sinks with supervision
- Take linens off the bed and put in the dirty clothes bin
- Wipe down handles on cabinets

Possible cleaning tasks for children ages 6 to 7 years old:

- Load the dishwasher
- Clean their room
- Empty trash cans
- Wet mop individual rooms
- Vacuum a room (depending on the strength of your young one)
- Make their beds



## References

<https://www.epa.gov/children>

<https://www.focusonthefamily.com/parenting/age-appropriate-chores/>

<https://www.healthychildren.org/English/health-issues/conditions/prevention/Pages/Cleaners-Sanitizers-Disinfectants.aspx>

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<https://www.epa.gov/children/what-you-can-do-protect-children-environmental-risks#protectchildrenchemical>

<https://www.epa.gov/pesticide-incidents/first-aid-case-pesticide-exposure>

<https://aapcc.org/>

<https://www.poisonhelp.org/>

<https://www.webmd.com/vitamins/ai/ingredientmono-157/ipecac>



## Chapter 14: Cleaning Your Home—Daily, Weekly, & Monthly

In previous chapters, we learned how to clean, sanitize, and disinfect our homes. Now that we understand how to clean, sanitize, and disinfect, let's take a look at the "order of operations" when cleaning. Utilizing a systematic process will help to ensure that we don't miss anything as we clean our homes from top to bottom. Creating a cleaning schedule is essential for a clean and healthy home. It will help to track our daily, weekly, monthly, and seasonal cleaning chores.

### Section 14.1 Daily Cleaning

Daily cleaning tasks are those that must be done every day to maintain overall cleanliness. Develop a morning routine and a nighttime routine for your daily cleaning. Morning routine cleaning tasks should be done first thing in the morning before you start your other business for the day. Night routine cleaning tasks should be done before you go to bed or retire for the evening.

#### Daily Cleaning: Entrance

##### *Night routine*

1. Declutter the entrance of any items that do not belong. Organize and put away things where they belong (i.e., mail and packages).
2. Organize shoes and place shoes on racks.
3. Hang coats in the closet or on a coat rack.
4. Place hats and scarfs in an appropriate place.
5. Place wet umbrellas in an umbrella stand or leave them outside to avoid getting your floors wet.
6. Disinfect high touch areas such as doorknobs, locks on doors, light switches, and key holders. Disinfect alarm keypad if applicable. Note: Due to the coronavirus pandemic, disinfect high-touch surfaces daily to reduce transmission in the home.

#### Daily Cleaning: Living Room

##### *Night routine*

1. Declutter. Remove any items from couches, TV stands, tables, etc. that do not belong (i.e., toys, clothing, books, tablets, etc.).
2. Organize and put things where they belong, like magazines, remote controls, books, etc.
3. Fluff pillows and straighten the cushions on your couches. Fold and put away blankets.
4. Vacuum the carpet or rug if needed.
5. Wipe and disinfect high-touch surfaces, such as remote controls, telephones, light switches, tables, etc.

#### Daily Cleaning: Dining Room

##### *Night routine*

1. Declutter the room. Remove any items that do not belong.
2. Organize and put things where they belong.
3. Remove all dirty dishes, utensils, etc. after each meal and place them in the sink or dishwasher to be washed immediately.
4. Clean and sanitize the table after use. Also, wipe and clean chairs.

5. Clean and disinfect all high-touch surfaces (i.e., light switches, chair handles, etc.)
6. Sweep and mop or vacuum the floor.

## **Daily Cleaning: Kitchen**

### *Morning routine*

1. If you have a dishwasher, unload it while making tea, coffee, or breakfast. Otherwise, put away dishes that were drying in a drying rack.
2. Place out fresh cleaning cloths and dishtowels for use.

### *Night routine*

3. Clean the kitchen as you are cooking.
4. Declutter tables and countertops of any items that do not belong, and organize and put away things where they belong (i.e., spices, utensils, etc.).
5. Refrigerate any leftovers.
6. Wash, dry, and put away dishes following meals.
7. Clean countertops, appliances, table, and other kitchen furniture after use.
8. After cleaning them, sanitize countertops, tables, appliances, kitchen sink, and other surfaces used for food preparation before and after use. Clean and sanitize the sink last since you will be using it to clean the other surfaces.
9. Clean and disinfect all high touch surfaces (i.e., light switches, cabinet handles/knobs, sink handles/knobs, refrigerator handles, stove and microwave handles, knobs, and keypads, etc.).
10. Sweep and mop the kitchen floor.
11. Clean and disinfect used dishtowels, sponges, mop, etc.
12. Take out the trash.

## **Daily Cleaning: Bathroom**

### *Morning routine*

1. Turn on vents or open windows.
2. After using the sink, spray using a non-toxic disinfectant cleaner, wipe, and rinse.
3. After showering, spray down the shower with a non-toxic disinfectant cleaner, wipe, and rinse.

### *Night routine*

4. Declutter and organize. Remove any items that do not belong and place items where they belong.
5. Right before you wash up for bed, spray toilet with a disinfectant cleaner and let it sit.
6. After using the sink and shower, spray it with a non-toxic disinfectant cleaner, wipe and rinse.
7. Wipe counters and mirrors.
8. Disinfect cleaning tools and all high touch surfaces.
9. After washing up for bed, scrub and flush the toilet and quickly wipe the rim and seat.

## **Daily Cleaning: Bedroom**

### *Morning routine*

1. When you get up, make your bed.
2. Put dirty clothes in the hamper.

### *Night routine*

3. Declutter items on tables, TV stand, etc.
4. Organize. Put things where they belong, like magazines and remote controls.
5. Take out the trash.
6. Put dirty clothes in the hamper.
7. Put clean clothes in closets and drawers
8. Clean and disinfect high touch surfaces.

### **Daily Cleaning: Home Office**

#### *Night routine*

1. Declutter the room. Remove any items that do not belong.
2. Organize the space. Put things where they belong, like books, papers, ink pens, etc.
3. Clean and disinfect high touch surfaces like the tabletop, desktop, computer, keyboard, printer, phone, etc.
4. Take out the trash.

### **Daily Cleaning: Laundry**

1. If you have a washer and dryer, do a load of laundry per day. Fold, hang, and put away clean clothes.

## **Section 14.2 Weekly Cleaning**

Along with daily cleaning, each room in the house requires a more thorough weekly cleaning. Weekly cleaning does not have to be done on the weekend. In fact, it is best to spread it out and give each room a thorough clean throughout the week. You can clean a different room each day, along with a quick daily tidy. This cleaning schedule is less strenuous than trying to do it all in one day and gives a routine for maintaining a clean and fresh home. For example, we can choose to clean using the following schedule: Everyday—quick tidy, Sunday—Bathroom, Monday—Living room, Tuesday—Dining room, Wednesday—Kitchen, Thursday—Entrance, Friday—Home office or other miscellaneous room, and Saturday—Bedroom.

Before doing any of the weekly cleaning tasks, you should first do the following.

1. Gather tools and products.
2. Wear your personal protective equipment (PPE).
3. If weather permits, open all windows.

### **Weekly Cleaning: Entrance**

#### Pre-cleaning

1. Declutter the entrance. Remove all unnecessary items in the area. Organize and put things where they belong (i.e., packages, mail, etc.).
2. Remove items from entrance furniture and set aside (i.e., lamps, picture frames, vases, shoes, coats, umbrella).
3. Take rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.

#### Dusting

4. Dust blinds and vacuum window treatments.
5. Dust window and window ledges.
6. Dust entrance furniture.

7. Dust items that were removed from the area (i.e., lamps, vases, picture frames, etc.).

#### Cleaning

8. Clean all furniture, including racks and bench and umbrella stand.
9. Move furniture to sweep and mop, or vacuum.
10. Replace furniture and rugs.
11. Clean all items and place them back on the furniture.
12. Disinfect high-touch surfaces (i.e., light switches, doorknobs, alarm keypad, etc.).
13. Organize shoes and put them on shoe racks.
14. Clean baskets or bins.

### **Weekly Cleaning: Living Room**

#### Pre-cleaning

1. Declutter the living room. Remove any items that do not belong.
2. Remove items from furniture and set aside (i.e., picture frames, vases, lamps, magazines, etc.)
3. Take rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.

#### Dusting

1. Dust ceiling fans.
2. Dust blinds and vacuum window treatments.
3. Dust windows.
4. Dust all furniture (i.e., tables, television stands, bookcases, etc.).
5. Dust or vacuum couch and pillows.
6. Dust any objects that usually sit on the furniture (i.e., picture frame, vases, lamps, etc.)

#### Cleaning

7. Clean windows (and any other glass in the room).
8. Clean all furniture. Disinfect tables, remote controls, and high-touch surfaces.
9. Remove any furniture that will obstruct you from cleaning the floor.
10. Sweep and mop or vacuum the floor.
11. Return everything back to its proper place (i.e., furniture, rugs, mats, etc.).
12. Clean all items and place them back on the furniture (i.e., picture frames, vases, lamps, etc.).
13. Discard any trash.

### **Weekly Cleaning: Dining Room**

#### Pre-cleaning

1. Declutter the room. Remove any items that do not belong.
2. Remove items from furniture and set aside (i.e., flower vases, decor, etc.).
3. Take rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.

#### Dusting

4. Dust ceiling fans, blinds, and vacuum window treatments.
5. Dust windows.
6. Dust all furniture.
7. Dust items that were removed from the area (i.e., flower vases, decor, etc.).
8. Vacuum chair cushions and pillows.

## Cleaning

9. Clean all glass in the room.
10. Clean all furniture.
11. Disinfect high touch surfaces.
12. Remove any furniture that will obstruct you from cleaning the floor.
13. Sweep and mop or vacuum the floor.
14. Return everything back to its proper place (i.e., furniture, rugs, mats, etc.).
15. Clean and replace all items on furniture (i.e., flower vases, decor, etc.).
16. Replace all furniture, rugs, and mats once the floor is dry.

## **Weekly Cleaning: Kitchen**

### Pre-cleaning

1. Declutter the items on tables, counters, etc. Remove any items that do not belong.
2. Remove items on furniture and countertops and set aside (i.e., small appliances, canisters, etc.).
3. Take all rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.
4. Clear the refrigerator of any old, expired food. Place containers in the sink or dishwasher to be washed.

### Dusting

5. Dust blinds and vacuum window treatments.
6. Dust windows.
7. Dust kitchen furniture and vacuum chair cushions.
8. Dust all countertops.
9. Dust items on the countertops (i.e., small appliances, canisters, etc.).

### Cleaning

10. Clean windows (and any other glass in the room).
11. Clean cabinet doors.
12. Clean all kitchen furniture.
13. Clean countertops.
14. Clean all appliances (refrigerator, stove, hood fan, dishwasher, microwave, etc.).
15. After cleaning them, sanitize countertops, tables, appliances, and other surfaces used for food preparation.
16. Clean and replace all items on countertops and furniture.
17. Clean and sanitize sink and garbage disposal.
18. Clean and disinfect all high touch surfaces (i.e., light switches, cabinet handles/knobs, sink handles/knobs, refrigerator handles, stove and microwave handles, knobs, and keypads, etc.).
19. Remove all items that will obstruct you from cleaning the floor.
20. Sweep, mop, and disinfect the floor.
21. Return all the furniture and rugs to their original place once the floor is dry.
22. Launder and sanitize used cloth tablecloths and dirty dishcloths, towels, oven mitts, etc.
23. Replace any kitchen sponges as needed.
24. Take out the trash.

## **Weekly Cleaning: Bathroom**

### Pre-cleaning

1. Turn on the ventilation fan and open windows.

2. Declutter the room. Remove any items that do not belong.
3. Remove all items from the bathroom that are stored on the countertops, including toothbrush holders.
4. Take mats out and wash them.
5. Pretreat surfaces that require additional cleaning time (i.e., toilet, shower, tub, etc.).

#### Dusting

6. Dust blinds and vacuum window treatments.
7. Dust windows, window ledges.
8. Dust any racks, stands, medicine cabinet, and cabinet doors.
9. Dust countertops.
10. Dust any items that came off of racks, stands, counters, etc.

#### Cleaning

11. Clean windows, window ledges, mirror (and any other glass in the room) with glass cleaner or your preferred cleaning solution.
12. Clean and disinfect the sink, faucet, and countertops.
13. Clean and sanitize the toothbrush holder.
14. Clean and disinfect toilet, tub, shower, and all high touch surfaces.
15. Clean all items before returning them to their proper place.
16. Sweep, mop, and disinfect the floor.
17. Take out the trash.
18. Clean and disinfect towels and washcloths.
19. Clean and disinfect cleaning tools and gloves.

### **Weekly Cleaning: Bedroom**

#### Pre-cleaning

1. Declutter the bedroom. Remove any items that do not belong.
2. Remove and launder bedding and allow the bed to air out.
3. Place dirty clothes in the hamper.
4. Put away any clean clothes.
5. Remove all items from tables, nightstands, and desks.
6. Take all rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.

#### Dusting

7. Dust ceiling fans.
8. Dust blinds and vacuum window treatments.
9. Dust windows.
10. Dust all furniture.
11. Vacuum any throw pillows or cushions.
12. Dust surfaces and items that were removed from tables, stands, etc.

#### Cleaning

13. Clean windows (and any other glass in the room) with glass cleaner or your preferred cleaning solution.
14. Clean all furniture.
15. Clean and replace all items on tables, stands, etc.
16. Disinfect all high touch surfaces.
17. Sweep and mop or vacuum the floor.
18. Make up the bed and fluff the pillows.
19. Return all the furniture and rugs to their original place.
20. Take out the trash.

## **Weekly Cleaning: Home Office**

### Pre-cleaning

1. Declutter the room. Remove any items that do not belong.
2. Organize the space. Put things where they belong, like books, papers, ink pens, etc.
3. Remove all items from tables and desks.
4. Take rugs and mats outside to shake off loose dirt or foreign matter. Then launder, wash, clean, and vacuum them as necessary. Set them aside.

### Dusting

5. Dust blinds and vacuum window treatments.
6. Dust windows.
7. Dust all furniture and any items on the furniture.
8. Vacuum chair cushions.
9. Dust electronic devices (i.e. computer, printer, phone, etc.).

### Cleaning

10. Clean windows (and any other glass in the room) with glass cleaner or your preferred cleaning solution.
11. Clean all furniture.
12. Clean all items that were removed from tables and desks.
13. Clean and disinfect high touch surfaces like the table, desk, computer, keyboard, printer, phone, etc.
14. Remove any furniture that will obstruct you from cleaning the floor.
15. Sweep and mop or vacuum the floor.
16. Return all the furniture and rugs to their original place once the floor is dry.
17. Take out the trash.

## **Section 14.3 Monthly Cleaning**

Monthly deep cleaning is much more thorough than daily and weekly cleaning. Depending on your household, some rooms can be deep cleaned every two months rather than every month. That is for you to decide.

Before doing any of the monthly cleaning tasks listed below, you should first do the following:

1. Gather tools and products.
2. Wear your personal protective equipment (PPE).
3. If weather permits, open all windows.

## **Monthly Cleaning: Entrance**

### Pre-cleaning

1. Declutter the entrance. Remove all unnecessary items in the area. Organize and put things where they belong (i.e., packages, mail, etc.).
2. Remove items from entrance furniture and set aside (i.e., lamps, picture frames, vases, shoes, coats, umbrella).
3. Take rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.
4. Empty any baskets or bins used to store items.

### Dusting

1. Dust ceiling, ceiling vents, ceiling fans, light fixtures, and crown molding; check to see if the light bulbs need replacing. If so, replace the bulbs.
2. Dust walls, windows, doors, and any items hanging on the walls (i.e., pictures).
3. Dust blinds and vacuum window treatments.

4. Dust windows and window ledges.
5. Dust entrance furniture.
6. Dust the baseboard.
7. Dust items that were removed from the area (i.e., lamps and picture frames, etc.).

#### Cleaning

8. Clean ceiling vents, light fixtures, ceiling fan, crown molding, etc.
9. Spot clean walls if needed, clean walls, and clean any pictures hanging on the walls.
10. Clean windows and doors.
11. Clean baseboard.
12. Clean all furniture, including racks, bench, and umbrella stand.
13. Move furniture to sweep, mop, or vacuum.
14. Replace furniture and rugs.
15. Clean all items and place them back on furniture.
16. Disinfect high-touch surfaces (i.e., light switches, doorknobs, alarm keypad, etc.).
17. Organize shoes and place them on shoe racks.
18. Clean any baskets or bins.

### **Monthly Cleaning: Living Room**

#### Pre-cleaning

1. Declutter the living room. Remove any items that do not belong.
2. Remove items from the living room furniture and set aside.
3. Take rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.

#### Dusting

4. Dust ceiling, ceiling vents, ceiling fans, light fixtures, and crown molding. Check to see if the light bulbs need replacing. If so, replace the bulbs.
5. Dust walls, doors, and any items hanging on the walls (i.e., pictures).
6. Dust blinds or vacuum window treatments.
7. Dust windows, window ledges.
8. Dust living room furniture.
9. Dust the baseboard.
10. Dust items removed from furniture.

#### Cleaning

11. Clean ceiling fans, vents, light fixtures, and crown molding.
12. Spot clean walls and clean walls.
13. Clean any pictures hanging on the walls.
14. Clean windows, window ledges, and doors.
15. Clean blinds and window treatments.
16. Clean baseboard.
17. Clean all furniture. Disinfect tables.
18. Vacuum and clean any baskets or bins.
19. Move furniture and rugs to clean floors.
20. Sweep and mop or vacuum the floor.
21. Return all the furniture and rugs to their original place.
22. Clean all items and place them back on furniture and in baskets and bins.
23. Disinfect remote controls, telephones, and any surfaces that are touched often.
24. Discard any trash.



## Monthly Cleaning: Dining Room

### Pre-cleaning

1. Declutter the room. Remove any items that do not belong.
2. Remove items from furniture and set aside (i.e., flower vases, decor, etc.).
3. Take rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.

### Dusting

6. Dust ceiling, ceiling fan, ceiling vents, light fixtures, and crown molding. Check to see if the light bulbs need replacing. If so, replace the bulbs.
7. Dust walls, doors, and any pictures hanging on the walls.
8. Dust blinds and vacuum window treatments.
9. Dust windows and window ledges.
10. Dust furniture.
11. Dust the baseboard.
12. Vacuum chair cushions and pillows.

### Cleaning

13. Clean ceiling fans, vents, light fixtures, and crown molding.
14. Spot clean walls and clean walls. Clean any pictures hanging on the walls.
15. Clean windows, window ledges, and doors.
16. Clean curtains and blinds.
17. Clean the baseboard.
18. Clean all furniture.
19. Disinfect high touch surfaces.
20. Move any furniture that would prevent you from cleaning the floors.
21. Sweep and mop or vacuum the floor.
22. Clean and replace all items on furniture (i.e., flower vases, decor, etc.).
23. Replace furniture and rugs after the floor is dry.
24. Discard any trash.

## Monthly Cleaning: Kitchen

### Pre-cleaning

1. Declutter the items on tables, counters, etc. Remove any items that do not belong.
2. Remove items on furniture and countertops and set aside (i.e., small appliances, canisters, etc.).
3. Take all rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.
4. Clear the refrigerator of any old, expired food. Place containers in the sink or dishwasher to be washed.

### Dusting

7. Dust ceiling, ceiling fan, ceiling vents, light fixtures, and crown molding. Check to see if the light bulbs need replacing. If so, replace the bulbs.
8. Dust walls, doors, and any pictures hanging on the walls.
9. Dust blinds and vacuum window treatments.
10. Dust windows, and window ledges.
11. Dust kitchen furniture and vacuum chair cushions.
12. Dust countertops.
13. Dust the baseboard.

### Cleaning

14. Clean ceiling fans, vents, light fixtures, and crown molding.

15. Clean walls and walls hangings.
16. Clean windows and window ledges.
17. Clean doors.
18. Clean blinds.
25. Clean the baseboard.
26. Clean cabinet doors.
27. Clean all kitchen furniture.
28. Clean countertops.
29. Clean all appliances (refrigerator, stove, hood fan, dishwasher, microwave, etc.).
30. After cleaning them, sanitize countertops, tables, appliances, and other surfaces used for food preparation.
31. Clean and replace all items on countertops and furniture.
32. Clean and sanitize sink and garbage disposal.
33. Clean and disinfect all high touch surfaces (i.e., light switches, cabinet handles/knobs, sink knobs, refrigerator handles, stove and microwave handles, knobs, and keypads, etc.).
34. Remove all items that will obstruct you from cleaning the floor.
35. Sweep, mop, and disinfect the floor.
36. Replace all items once the floor is dry.
37. Launder and sanitize used cloth tablecloths and dirty dishcloths, towels, oven mitts, etc.
38. Replace any kitchen sponges as needed.
39. Take out the trash.

## **Monthly Cleaning: Bathroom**

### Pre-cleaning

1. Turn on the ventilation fan and open windows.
2. Declutter the room. Remove any items that do not belong.
3. Remove all items from the bathroom that are stored on the countertops, including toothbrush holders.
4. Pretreat surfaces that require additional cleaning time (i.e., toilet, shower, tub, etc.).

### Dusting

5. Dust ceiling, ceiling vents, and light fixtures. Check to see if the light bulbs need replacing. If so, replace the bulbs.
6. Dust walls, doors, and any items hanging on the walls.
7. Dust blinds and vacuum window treatments.
8. Dust windows and window ledges.
9. Dust any racks, stands, medicine cabinet, cabinet doors, and countertops.
10. Dust any items that came off of racks, stands, etc.
11. Dust baseboard.

### Cleaning

12. Clean ceiling vents and light fixtures.
13. Clean walls and walls hangings.
14. Clean blinds and windows treatments.
15. Clean windows and window ledges.
16. Clean doors.
17. Clean the baseboard.
18. Clean mirrors (and any other glass in the bathroom).
20. Clean and disinfect the sink, faucet, and countertops.

21. Clean and sanitize the toothbrush holder.
22. Clean and disinfect toilet, tub, shower, and all high touch surfaces.
19. Clean all items before returning them to their proper place
20. Sweep, mop, and disinfect the floor.
21. Take out the trash.
22. Clean and disinfect towels and washcloths.
23. Clean and disinfect cleaning tools and gloves.

## **Monthly Cleaning: Bedroom**

### Pre-cleaning

1. Declutter the bedroom. Remove any items that do not belong.
2. Remove and launder all bedding and allow the bed to air out.
3. Place dirty clothes in the hamper.
4. Put away any clean clothes.
5. Remove all items from tables, nightstands, and desks.
6. Take all rugs and mats outside to shake off any loose dirt or foreign matter. Then launder, wash, clean, or vacuum them as necessary. Set them aside.

### Dusting

7. Dust ceiling, ceiling fans, ceiling vents, light fixtures, and crown molding.
8. Dust walls, doors, and any pictures hanging on the walls.
9. Dust blinds and vacuum window treatments.
10. Dust windows and window ledges.
11. Dust bedroom furniture.
12. Vacuum bed, throw pillows, and cushions
13. Dust the baseboard.

### Cleaning

14. Clean ceiling fans, vents, light fixtures, and crown molding.
15. Spot clean walls and clean walls. Clean any pictures hanging on the walls.
16. Clean windows, window ledges, and doors.
17. Clean blinds.
18. Clean baseboard.
19. Clean all furniture, including headboard and footboard of bed.
20. Clean and replace all items on tables, stands, bookshelves, etc.
21. Move any furniture that obstructs you from being able to clean the floor.
22. Sweep and mop or vacuum the floor.
23. Remake the bed with fresh bedding, fluff pillows.
24. Replace furniture and rugs after the floor has dried.
25. Disinfect all high touch surfaces.
26. Take out the trash.

## **Monthly Cleaning: Home Office**

### Pre-cleaning

1. Declutter the room. Remove any items that do not belong.
2. Organize the space. Put things where they belong, like books, papers, ink pens, etc.
3. Remove all items from tables and desks.
4. Take rugs and mats outside to shake off loose dirt or foreign matter. Then launder, wash, clean, and vacuum them as necessary. Set them aside.

### Dusting

5. Dust ceiling, ceiling fan, ceiling vents, light fixtures, and crown molding.

6. Dust walls, doors, and any pictures hanging on the walls.
7. Dust blinds and vacuum window treatments.
8. Dust windows and window ledges.
9. Dust furniture.
10. Dust items that go back on the tables and desks.
11. Dust electronic devices (i.e., computer, printer, phone, etc.).
12. Dust the baseboard.

### Cleaning

13. Clean ceiling vents, ceiling fan, light fixtures, and crown molding.
14. Spot clean walls, clean walls, and clean any pictures hanging on the walls.
15. Clean windows, window ledges, and doors.
16. Clean blinds.
17. Clean the baseboard.
18. Clean all furniture.
19. Clean all items that were removed from tables and desks. Clean and disinfect high touch surfaces, including the table, desk, computer, keyboard, printer, phone, etc.
20. Sweep and vacuum or mop.
21. Take out the trash.
22. Replace all objects and rugs after the floor has dried.

## **Section 14.4 Cleaning Every Three Months, Six Months, or Yearly**

In addition to the regular monthly cleaning, some areas of the home require additional deep cleaning or contain items that need to be replaced throughout the year. Deep cleaning the refrigerator will keep it clean and looking new, even longer. An added cleaning of all drapes freshens up the entire house. Proper maintenance of your home's HVAC system helps maintain good air quality in your home. It is recommended that the air filter for your HVAC system is changed at least once each month if you are using fiberglass filters. However, there are higher-end pleated filters that can last up to six months. Be sure to read and follow the manufacturer's instructions for the best filters for your system, how often they should be changed, and the instructions for properly changing them. This helps ensure the air is free of germs and allergens so the members of your household can breathe freely.

### **Every Three Months:**

1. Deep clean the refrigerator.
2. Clean all drapes in the home.
3. Change air-conditioning filter (could be changed every 6 months and professionally clean air conditioning ducts once a year).

## **Section 14.5. Cleaning Chart**

For your convenience, the following chart is provided as a quick reference tool to determine what and how often the surfaces in your home should be cleaned, sanitized, and disinfected. Please note this chart provides general times when tasks should be performed. Some circumstances may require the tasks to be performed more often, especially if someone in the household contracts an infectious disease.

# Daily & Weekly Cleaning Chart

## Daily

### Morning routine

- Make your bed when you wake up.
- Unload dishwasher.

### Evening routine

- Organize and put things where they belong.
- Fluff pillow and arrange cushions on couches.
- Disinfect high-touch surfaces.
- Wipe and sanitize tables and kitchen counters.
- Clean kitchen floor before going to bed.
- Take trash out.
- Wash dishes before going to bed.

## Thursday (Entrance)

- Declutter the entrance.
- Take rugs out and clean.
- Dust blinds, windows, furniture, & all items on furniture.
- Clean all furniture.
- Sweep and mop or vacuum.
- Replace all items.
- Organize shoes.
- Disinfect high-touch surfaces.

## Monday (Living Room)

- Declutter the living room.
- Remove and wipe all items on furniture. Set aside.
- Take rugs out and clean.
- Dust ceiling fans, blinds, windows, & all furniture.
- Vacuum window treatments, couch, pillows.
- Clean windows and furniture.
- Disinfect high-touch surfaces.
- Sweep and mop or vacuum floors.
- Return everything back to its proper place.
- Discard trash.

## Friday (Home Office or Misc. Room)

- Declutter the room.
- Remove and wipe all items on furniture. Set aside.
- Take rugs out and clean.
- Dust blinds, windows, furniture, & electronics.
- Vacuum window treatments & chair cushions.
- Clean windows, furniture, and electronics.
- Disinfect high-touch surfaces.
- Sweep and mop or vacuum floors.
- Return everything back to its proper place.
- Discard trash.

## Tuesday (Dining Room)

- Declutter the dining room.
- Remove and wipe clean all items on furniture. Set aside.
- Take rugs out and clean.
- Dust ceiling fans, blinds, windows, & all furniture.
- Vacuum window treatments, chair cushions, pillows.
- Clean windows and furniture.
- Disinfect high-touch surfaces.
- Sweep and mop or vacuum floors.
- Return everything back to its proper place.
- Discard trash.

## Saturday (Bedroom)

- Declutter the bedroom.
- Launder bedding and put away clothes.
- Remove and wipe all items on furniture. Set aside.
- Take rugs out and clean.
- Dust ceiling fans, blinds, windows & all furniture.
- Vacuum window treatments & throw pillows.
- Clean windows and furniture.
- Disinfect high-touch surfaces.
- Sweep and mop or vacuum floors.
- Make up bed.
- Return everything back to its proper place.
- Discard trash.

## Wednesday (Kitchen)

- Declutter the kitchen.
- Remove and wipe all items on furniture & counter.
- Take rugs and mats out and clean.
- Clear refrigerator of old and expired food.
- Dust blinds, windows, countertop, and all furniture.
- Clean windows, countertop, furniture, appliances, garbage disposal, and sink.
- Sanitize countertop, tables, sink.
- Disinfect high-touch surfaces.
- Sweep and mop or vacuum floors.
- Return everything back to its proper place.
- Discard trash.

## Sunday (Bathroom)

- Turn on vent or open windows.
- Declutter room.
- Remove and wipe all items on furniture. Set aside.
- Take mats out and wash.
- Spray and pre-treat toilet, shower and tub.
- Dust blinds, windows, racks, cabinets, and countertops.
- Clean windows, racks, and cabinets.
- Clean and disinfect sink, countertop, toilets, shower tub, all high-touch surfaces.
- Sweep and disinfect floors by mopping.
- Take out trash.



## Chapter 15: Lifestyle Changes to Maintain a Clean and Healthy Life

*“The greatest gift that we have been given is the gift of life. The essence of our very being is housed within this magnificent creation of flesh and blood known as our bodies. Unfortunately, we live in a society that misdirects us and misinforms us in such a way that we place our own bodies at risk. We take care of our clothes, our pets and our material possessions better than we take care of our own bodies.”*

*“Knowledge is the principle resource that can help us take better care of our bodies and our health. God, the Creator and Sustainer of all life, has given us direction for taking care of our health. However, we live in a society that is in opposition to the directions from the Giver of life, and as a result we suffer.”*

The Honorable Minister Louis Farrakhan, “A Torchlight for America,” page 124

There are certain steps we can take that will go a long way to keep our homes organized, clean, and free from dangerous disease-causing pathogens. For many of us, this may require a lifestyle change. These changes can be small or large, but the important thing is to remain in the process of self-improvement. By doing so, we not only better ourselves, but we better our communities. As with any process, a lifestyle change takes time, commitment, patience, and support. Start by making a plan. The plan should involve long and short-term goals that are attainable. Then, put your plan in motion. Start with something small on your list and begin working on it. Once that is accomplished, move on to the next goal and the next, until they are all achieved. Remember to focus on one thing at a time, and exercise patience. Anything worth having is worth taking the time to see it through. Finally, a little support can go a long way in the process of lasting change. Don't be afraid to seek out like minds or someone that you admire to aid you in your journey. Just as it takes a village to raise a child, it can take that same village to help each of us rise to our full potential. Below are some lifestyle changes that can help us maintain a clean and healthy lifestyle.

### **Lifestyle Change Tip 1: Pray daily.**

Prayer frames the heart and mind toward the Creator and opens us up to receive His Perfect Guidance. Who better to seek direction from than the One Who purposed our very existence. The Holy Qur'an teaches, *“Surely prayer keeps (one) away from indecency and evil; and certainly the remembrance of Allâh is the greatest (force).”* [Holy Qur'an 29:45] Just as we use cleaners, sanitizers, and disinfectants to cleanse our homes, prayer is an act that helps cleanse and purify the heart, mind, and spirit. Since one's environment reflects their mental state, a clear mind naturally lends itself to a peaceful and clean home. Having a clear mind and a clean home is your own piece of heaven on Earth.

### **Lifestyle Change Tip 2: Practice How to Eat to Live.**

*“This body is the most magnificent of all creation. A wise God created this and, believe it or not, it is made to last so much longer than we get out of it, but it is because we don't know what it is and how to preserve it and protect it. So, the enemy can manipulate our taste buds and then sentence us to death by our appetites.”*

-The Honorable Minister Louis Farrakhan, 2009 Health Forum

It is often said that whatever you put in your body can either keep you here or push you closer to the grave. In other words, what we eat either strengthens the immune system to

ward off illness or weakens it, making the body susceptible to disease. Eating the wrong foods is, in effect, digging our graves with our teeth. Eating the right foods along with the right spiritual food for good thoughts will ensure that our immune systems remain strong enough to prevent and fight off pathogens. In Books 1 and 2 of *How to Eat to Live*, The Most Honorable Elijah Muhammad gives the following divine guidance that has since been scientifically proven to boost immunity and prolong life:

- ✓ Eat one meal a day, between 4:00 pm and 6:00 pm.
- ✓ Eat the small white navy bean that has high values of proteins, fats, and starches.
- ✓ Eat plenty of fruits and vegetables.
- ✓ Eat whole-wheat bread.
- ✓ Raise and prepare your own food as much as possible.
- ✓ Do not eat the highly rich soybean.
- ✓ Do not eat pork or foods with pork by-products, nuts, or fried foods.
- ✓ Fast monthly.
- ✓ Limit the amounts of starch and sweets.

For additional information on the proper foods to eat and how they should be eaten to sustain life, please read “How to Eat to Live, Book 1” and “How to Eat to Live, Book 2” by The Most Honorable Elijah Muhammad. These books are available at <https://store.finalcall.com/>.

### **Lifestyle Change Tip 3: Wash your hands often.**

Throughout the course of the day, our hands contact many things. We literally touch the world. Therefore, keeping our hands clean is vitally important to prevent catching and spreading infectious germs. It is especially important to avoid touching your eyes, nose, or mouth with unwashed hands. To ensure they are clean, wash your hands with soap and warm water for at least 20 seconds. Dry your hands with a clean paper towel, and then use the paper towel to turn off the faucet to prevent recontaminating your cleaned hands. If you do not have access to soap and water while outside the home, use an alcohol-based hand sanitizer. You can also make your own sanitizer if it is not available in the stores. The following are some instances where washing your hands is an absolute must:

- ✓ After using the restroom
- ✓ When entering the home
- ✓ Before eating or preparing food
- ✓ After blowing your nose, sneezing, or coughing
- ✓ After touching your eyes, nose or mouth (especially during a pandemic and in the presence of someone who is ill)
- ✓ Before and after providing personal care for another person (i.e., the elderly, children, or person who is ill)
- ✓ After touching animals or pets
- ✓ After touching a high touch surface (i.e., doorknob, light switch, etc.)

Washing your hands should be a part of practicing good hygiene overall. Good hygiene helps keep germs, viruses, bacteria, and illness away. It also makes you feel good about yourself. Practicing good personal hygiene starts with daily grooming, which includes bathing, brushing and flossing your teeth, keeping your nails and hair clean, etc. Also, keeping your clothes clean helps rid germs that get trapped in the fabric.



#### **Lifestyle Change Tip 4: Remove shoes when entering the home.**

Filth, nastiness, and harmful pathogens can walk right into your home on the bottom of your shoes. Outdoors and in public places, our shoes contact particles of feces, urine, saliva, and the list continues. A recent study by Dr. Charles Gerba, microbiologist, and professor at the University of Arizona, found that there are about 421,000 different types of bacteria that can lurk on the bottom of shoes. So, along with the new and deadly COVID-19 disease, you and the members of your household may be tracking in other germs that can make you or someone else sick. When we enter the home, about 90% to 99% of the germs on shoes end up on floors in the home. Removing your shoes as soon as you enter the house along with the following practices will help keep your home clean and germ-free.

- ✓ Wipe the bottom of your shoes several times on an outdoor mat before entering the home. Be sure to have a mat outside and another mat or rug inside to catch additional dirt from shoes.
- ✓ You may also need an indoor mat for wet or muddy shoes, preferably one that will not allow water to seep through onto floors.
- ✓ Take off your shoes upon entering the home and leave them at the door.
- ✓ If space permits, having a bench in the entryway can make shoe removal easy and more comfortable. There are also benches with shoe racks and storage underneath the seat.
- ✓ Invest in a shoe rack and place shoes on the rack right after you enter.
- ✓ Keep disposable shoe covers in a basket or bin near the door for workers or anyone who may need to enter without removing their shoes.

#### **Lifestyle Change Tip 5: Put things away after using them.**

Every item in the home should have a place. Along with your shoe rack and bench for shoe removal, utilize furniture throughout the home that helps with organization and storage. Once everything has a designated space, it will be easy to implement the following tasks and put an end to clutter:

- ✓ Before you leave one room, take a look around to see if there is anything out of place and put it where it belongs.
- ✓ Hang up your coat and put shoes on the shoe rack before going any further into the house.
- ✓ Put books back on the shelf after reading them.
- ✓ Place pens back in pen holders and television remotes back in their designated spot.
- ✓ Put dirty clothes in the washer or in the hamper as soon as they are removed.
- ✓ Put mail away after reading it. Discard junk mail immediately.
- ✓ Wash and put the dishes away after washing them.

If you practice putting things away after using them, your home will stay neat, and clutter will be a thing of the past.

#### **Lifestyle Change Tip 6: Do a 15-minute “quick tidy” every night.**

Before retiring for the night, do a quick 15-minute tidy throughout the house. Have the whole family join in. The more the merrier and the quicker you will be able to get the job done.

- ✓ Go through the front entrance, common areas, living room, kitchen, and bedrooms to see if anything is out of place and put items where they belong (i.e., place books on shelves, toys in the toy box, remote control on the TV stand, etc.).
- ✓ Put things in order (i.e., arrange couch pillows, push chairs up to the table, etc.).
- ✓ Clear all countertops, tables, and floors of clutter and put things where they belong.

- ✓ Quickly wipe tables and countertops.
- ✓ Quickly sweep and spot clean bare floors in the kitchen and other high traffic areas.

A quick tidy every night before bed will help you rest well and awaken to a clean home for a more peaceful morning. Refer to Chapter 14 for more detailed information about daily cleaning.

**Lifestyle Change Tip 7: Maintain a cleaning schedule.**

Some cleaning tasks must be done daily, such as making the bed, washing dishes, and cleaning up visible dirt and spills. But other cleaning tasks require a little more effort and are best done on a schedule. Whether it's in your phone or posted on the refrigerator, following a cleaning schedule will help maintain a clean home. Rather than waiting until the weekend to clean your entire home, doing a little each day makes each task less overwhelming. Tailor your cleaning schedule to best suit your household. Below is an example of a cleaning schedule.

- ✓ Everyday—15-minute “quick tidy” before bed
- ✓ Sunday—Bathroom
- ✓ Monday—Living room
- ✓ Tuesday—Dining room
- ✓ Wednesday—Kitchen
- ✓ Thursday—Entrance
- ✓ Friday—Home office or family room
- ✓ Saturday—Bedroom

**Lifestyle Change Tip 8: Consider a robot vacuum cleaner and floor sweeper.**

If a robot can do the work for you, why not? Floors in the kitchen, bathrooms, and high traffic areas need to be vacuumed and swept daily. If you have a very busy schedule, consider using a robot vacuum cleaner and sweeper that will clean the floors for you. While this may be an investment, think of the time you will save and the satisfaction you will gain from having clean floors daily without breaking a sweat. If you find yourself always behind on the vacuuming, a robot vacuum may be worth saving up to purchase!

**Lifestyle Change Tip 9: Clean as you go.**

Below are some tips for maintaining a clean and germ-free environment throughout the day.

- ✓ When getting up from the sofa, prop up the pillows and place them back in place.
- ✓ Before leaving a room, pick up one or two items that don't belong and put them in their proper place.
- ✓ Clean a spill as soon as it happens.
- ✓ Wash your hands before, during, and after cooking.
- ✓ Clean as you cook (i.e., wash pots, pans, utensils, small appliances, etc. after using; wipe up any crumbs, splatters, and spills, etc.)
- ✓ Place spices back in the cabinet or spice rack after using.
- ✓ Clean dishes right after using them. Don't leave dirty dishes in the sink, especially overnight.
- ✓ Wipe tables and counters after using them.
- ✓ Sweep kitchen floors after you cook.
- ✓ Run the dishwasher before going to bed.
- ✓ Empty your dishwasher in the morning while making tea, coffee, or breakfast.
- ✓ Wash, wipe, and disinfect sinks, tubs, and shower after using them.

- ✓ Hang robes on hooks and towels on bars.
- ✓ If you have space, keep a hamper in your bathroom for used towels.
- ✓ Clean up any bathroom accidents right away.
- ✓ Clean your toilet every night around the time you are washing for bed.
- ✓ Place dirty clothes in their designated hampers.
- ✓ Declutter your dressers and bedside tables every night. Clear off anything that doesn't belong and put it in its place.

**Lifestyle Change Tip 10: Make your bed after you get up.**

The bedroom should be a sanctuary. A tidy room does wonders for getting a good night's sleep, and awakening to a fresh, clean room brightens your morning. An unmade bed can make the whole room appear untidy. Making your bed every morning as soon as you get up is a great way to start your day. It helps set your mind in order for the day. Launder your bed linen at least once per week to eliminate germs and maintain freshness.

**Lifestyle Change Tip 11: Put the toilet lid down before flushing.**

Whether you live in a household of one, two, or ten, do your very best to keep the bathroom neat and clean. A vital step in keeping germs at bay is putting the toilet lid down before flushing the toilet. When you push that lever, think of it as your toilet sneezing and spewing a fine mist of fecal matter, urine, and other nastiness into the air. These particles land on the various surfaces in your bathroom, including the sink, tub, floor, and you. They get in your towels, washcloths, toothbrushes, and more. Nothing and no one can escape. Once emitted in the air, these germ-ridden particles can be inhaled and travel to other portions of the home, landing on more surfaces. Then, these surfaces are touched, giving germs another free ride to other persons, places, and things. So, please put the lid down to cover the toilet before it sneezes. This will bless you and your home.

**Lifestyle Change Tip 12: Don't let the laundry pile up.**

Don't wait until the laundry piles up and forms a mountain of dirty clothes that seems impossible to climb. If you have a washer and dryer in the home, do a little laundry daily. If you use shared laundry facilities, schedule time at least twice a week to do some laundry so that it does not become an overwhelming chore. Immediately fold, hang, and put away clean clothes after laundering. This can also prevent wrinkles that set in clothes when left in the dryer, saving you time on ironing.

**Lifestyle Change Tip 13: Exercise—It starts with one step!**

Lack of energy is often the culprit for lack of cleaning. Give your system a boost of energy and get your cleaning in high gear by exercising. Exercise gives you the stamina to complete daily cleaning tasks. Get the body up and moving every day to recharge and get those energy juices flowing. Check with your doctor before beginning a new exercise regimen, especially if you have a chronic health condition. Experts at the Mayo Clinic and many others agree that exercise makes you feel better, increases your energy, and adds years to your life.

Along with weight control and combatting health conditions and disease, exercise can also improve mood and promote better sleep. Adults should complete at least 150 minutes a week of moderate aerobic activity, getting the body moving for about 20 to 25 minutes a day. Moderate exercise includes walking, swimming, or even riding a bike. And you don't have to join the gym or buy an expensive piece of exercise equipment. You can walk around the block, play a sport, dance, or go up and down the stairs in your home or apartment building.



*“Look, sisters, wherever you live, if it’s an apartment, if it’s a room, that’s your environment. You can’t let that environment degenerate to filth because you live there. So, your nature and your duty by nature is to keep that house. What do you mean keep house? Put things where they belong, keep things in order, and above all, keep things clean.”*

**—The Honorable Minister Louis Farrakhan,  
“Domestic Violence: It’s Causes  
and Solutions Part Two,”  
May 29, 1991**

