HOMECLEANSE

THE CLEANING GUIDE

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INTRODUCTION

Water damage can wreak havoc on a home's air quality when it is not properly remediated. The situation allows for sources of microbial growth that continuously release particles and sometimes toxins into the indoor environment that can enter our bodies through inhalation. It's important to remember that these particles and/or toxins will accumulate in our environment the entire time the sources are present and they will remain in our environment until they are removed. This cleaning guide will teach you how to properly eliminate them from your environment.

The HVAC

The HVAC system is usually the #1 contributor to particles and toxins in the home. This depends on the HVAC unit you have, because typically the system has an evaporator coil that continuously condenses while the air conditioning is running. This moisture creates a perfect environment for microorganisms like mold or bacteria to grow and thrive. As the "lungs of the home," the ductwork can act as major pathways for microorganisms to transfer particles from one room to the next.

Our Dust

When microorganisms like mold or bacteria are living inside the walls of a home, the particles they produce settle among the dust. This is why various dust testing technologies are used to identify if there may be contamination problems inside homes. Over time, these particles will continue to accumulate in the dust as long as the source(s) exist in the home, and they will opportunistically enter our bodies as that layer of "stuff" becomes aerosolized.

Our Belongings

The dust, contaminated with microscopic particles and potential toxins, will collect on top of and inside belongings in the home. Understanding porosity, such as porous versus non-porous surfaces, can help make clear decisions on how best to clean belongings to ensure they are free of this toxic dust. This cuts down on the amount of particles and toxins that we are exposed to daily.

Our Home

This potentially toxic dust doesn't just settle on our belongings. It also settles around our home. Walls, ceiling fans, moldings, doors, shelves, and practically any other horizontal and vertical surface can collect dust and should be cleaned to remove these harmful particles.

METHODS OF CLEANING

WET WIPING

This is the practice of wiping a surface that is mildly wet or damp. The wet wiping method is used to suppress the particles so that they are not as easily aerosolized when trying to remove them. It is one of the most effective ways to remove particles from your walls, floors, and wipeable furniture. You can use wet wipes or spray your favorite disinfectant directly on the area you are cleaning and then wipe it away using a microfiber towel. The key here is to make sure that the surface you are cleaning is slightly wet before wiping it.

Wet Wiping Method

- Spray a botanical EPA-registered disinfectant directly onto the surface you are cleaning. (Check out the resource section below if you want product recommendations).
- Using one side of the microfiber towel, clean the surface in a circular motion.
- Look at the towel and see if there is any visible residue. If there is, repeat steps 1 and 2 using a new side of the towel until the surface is clean and there is no residue.

CLICK HERE TO WATCH TUTORIAL VIDEOS ON THE PROCESS

HEPA VACUUMING

One of the best methods for cleaning contaminated surfaces is vacuuming with a HEPA vacuum. This is because HEPA technology traps smaller particles than traditional vacuums. However, one overlooked factor is the exhaust of the vacuum itself. It will stir up the air in the room you are cleaning, which can be counterproductive when trying to suppress the aerosolization of particles. This is why the steps listed in this guide are different from others in the past.

Vacuuming Method

- Attach a bristle brush attachment to the HEPA vacuum and turn on the machine near the surface or item you will be cleaning.
- Applying slight pressure with the bristle brushes, vacuum the item or surface horizontally, then vertically, and finally diagonally. This will help remove embedded particles.
- Wipe down the bristle brush attachment with a botanical disinfectant and a microfiber towel to ensure the attachment is clean in between cleaning each item.

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METHODS OF CLEANING

FOGGING

Unfortunately, fogging has become one of the most misunderstood and misused practices out there. Fogging is a method of applying a liquid product using high pressure but low volume, resulting in very small particle sizes. This method allows the product to bind with airborne particles, weighing them down and forcing them to the floor so that they can be cleaned away. "Dry Fogging" gets the particle size so small that the area practically doesn't get wet. The problem is that various products used to fog usually make unsubstantiated claims that they can destroy, denature, or kill any indoor pathogen. That should never be the goal. The goal is to completely remove particles from the environment. With that in mind, fogging should be used to make "wet wiping" cleaning more efficient and not for alternative reasons.

Fogging Method

- Fill up the fog machine of your choice with a botanical solution such as EC3.
- Turn on the machine and apply the product with the fogger to the surface or item you intend to clean.
- Using one side of the microfiber towel, clean the item or surface in a circular motion.
- Look at the towel to see if there is any residue. If there is, repeat steps 2 and 3 using a new side of the towel until the surface is clean and there is no visible residue.

CLICK HERE TO WATCH VIDEOS ON HOW TO PERFORM THE WET WIPING PROCESS THAT SHOULD BE USED AFTER THE PRODUCT IS APPLIED WITH THE FOGGER.

DRY WIPING

This is a method of cleaning where no liquids are used, like using a feather duster. This method is not recommended because it allows more particles to become aerosolized, which defeats the goal of removing contaminants from the environment.

CLEANING VERSUS REPLACEMENT ANALYSIS

HVAC

1. Start with the HVAC unit, regardless of whether you have a PTAC unit, central A/C, baseboard heaters, etc. Before cleaning, make sure to turn the system off and keep it off until the entire process is complete. This is especially important with a ducted system, as no ducted system is hermetically sealed. Even with the best cleaning technologies, some particles ultimately escape into the environment. This is why the HVAC should be dealt with first.

2. Cleaning versus Replacement: Some parts of the system can be cleaned easily, such as metal ductwork. Other parts are harder to clean, such as an evaporator coil due to the tiny, intricate spaces between the fins. It's important to get a sense of what cleaning versus replacement may cost and which is the best approach for you and your family.

   a. Cleanable: Metal ductwork, metal cabinets, the blower unit, and metal or plastic parts.
   b. Non-cleanable: Fiberglass (some ductwork has fiberglass on the interior of the duct), fiberboard (ductwork or boots made entirely of fiberglass), and flexible ductwork.
   c. Negotiable: Evaporator coils. Due to the intricacy of cleaning the coil due to the tight spaces, it entirely depends on how contaminated the coil is, the age of the coil, if rust is present, etc. It's strongly encouraged to replace the coil when possible, even though it is metal and is considered cleanable.

3. When cleaning the HVAC, it is highly recommended to use a NADCA-certified contractor who is willing to guarantee their work by passing a post-verification test.

4. Never use wall cavities or ceiling cavities as ductwork. If you find this in your home, either as a supply or as a return, it is highly recommended to replace it with actual ductwork.

5. Typically, it is the evaporator coil that tends to be the most contaminated. The coil itself should be tested using an EPA36 swab test to have the best data to make a decision on your HVAC system as a whole.

CLEANING VERSUS REPLACEMENT ANALYSIS

The Home

1. Carpets: These are the most difficult surfaces to clean inside a home. Like a sponge, they can trap a large number of microbial particles. If you're looking to improve air quality and reduce particles, now is a good time to consider if carpeting is right for you and your wellness goals.

2. Wallpaper: This decor can be made of various materials and ordinarily has a paper backing with a glued adhesive. This creates ideal growth conditions for microorganisms, especially in humid places such as kitchens and bathrooms. When cleaning wallpaper, it's important not to get the wallpaper too wet.

3. Blinds, Curtains, and Shades: Cleaning them is the best way to remove potentially harmful particles from them. If they are wipeable, wet wiping will be most effective. If they are not wipeable, the next best method will be HEPA vacuuming.

4. Walls: While more dust will accumulate on top of moldings, countertops, shelves, and flooring, walls do harbor dust and should be wet wiped during the cleaning process.

5. Ceilings: Hardly any dust will accumulate on your ceilings naturally. However, if you've just gone through a renovation or remediation, it is a good idea to clean your ceilings too.

6. Moldings and Shelving: It is important to wipe down your base moldings, window moldings, door moldings, tops of doors, shelving, and any other horizontal surface affixed to the walls of your home.

7. Floors: Last but not least will be the floors, which can accumulate a lot of dust!

CLEANING VERSUS REPLACEMENT ANALYSIS

Our belongings

1. Machine-washable: All machine-washable belongings, porous or otherwise, have a high chance of successfully being cleaned with products that are specifically designed to eliminate toxins and particles. However, this is unless there is mold growing in the item itself. If mold is growing on or in a piece of clothing or other porous material, it is strongly advised to discard and replace the item.

2. Non-porous items: Metal, glass, or plastic items are all considered non-porous and can be wiped clean without the fear of tiny particles getting into the item itself. Sealed wood also falls into this category, as the sealant prevents tiny particles from embedding into the pores of the wood. The best way to clean these items is with the wet wiping method.

3. Porous items (not machine-washable): Items like a fabric couch or other porous items that are not machine-washable will not have as high a success rate in removing particles. Microscopic particles like mold, bacterial particles, or toxins are so small that they can bypass the initial fabric layer and go deeper into the surface. This means that as you use the item, you'll be exposed to the particles within. If you want to clean these items, the best thing to do is to HEPA vacuum them thoroughly to try and remove any of the particles on the surface and hopefully some of the particles that may have burrowed into them. If you want to be thorough, you can do a tape lift on the surface to see how clean it is after. Microbial particles are not necessarily everywhere, and there are plenty of variables to consider, such as "How close was this to the source of particles" or "How much exposure did it have to the source of particles". This is where testing and making educated decisions can be fruitful.

4. Semi-porous items: Surfaces such as raw wood or concrete can be cleaned but are a bit more difficult than non-porous surfaces. The best method is to HEPA vacuum the surface first, followed by a wet scrub," since wiping isn't feasible. These surfaces may require a few rounds of cleaning before they are fully decontaminated.

THE CLEANING PROCESS

1. First and foremost, ensure that all of the sources of particles and toxins have been resolved to the best of your ability. It's hard to keep a place clean if something is constantly creating and adding particles to the space.

2. Plan for climate controls during the cleaning process. If the HVAC is turned off, humidity inside the home can increase, pipes can freeze, and other dangers can take place depending on the season. Insurance policies are also a risk when the system is off. It's important to have means of controlling the climate inside your home while your HVAC system is being cleaned, replaced, or turned off.

3. Have the HVAC either cleaned or replaced it, or a hybrid of both, as outlined above. Do not turn the system(s) on until the rest of the steps are completed.

4. Reduce the clutter in the room you are about to clean. If items are on shelves, remove them so that the shelves can be cleaned. If items are in a closet, remove them and bag them to be washed.

5. Using your preferred cleaning detergent that is successful in removing particles and toxins, clean all machine-washable items. (Check out the resources section below if you want product recommendations).

6. Using the wet wiping method with a botanical disinfectant, clean in the following order (make sure the area is slightly wet before wiping with a microfiber towel):
    a. Ceilings and then ceiling fans
    b. Walls / Moldings / Shelving / Countertops / Wall fixtures (work from highest off the ground to lowest)
    c. Wipeable furniture (work from highest off the ground to lowest)

THE CLEANING PROCESS

7. Using the HEPA vacuum method next, clean in the following order:
    a. Non-wipeable wall fixtures (such as blinds)
    b. Porous furniture (work from highest off the ground to lowest)
    c. Carpeting

8. Clean the wipeable floors using a microfiber mop and the wet wiping method.

9. Wet wipe, machine wash, or HEPA vacuum the individual items you have removed from the shelves and put them back in place. This will depend on the item's porosity and if it is machine washable.

10. If you have not already done so, consider upgrading the HVAC filtration system to something that can efficiently remove smaller particles prior to turning on the HVAC system. This reduces the risk of contamination of the coil. (Check out the resources section below for product recommendations).

11. Consider re-testing the environment and consulting with your doctor regarding the results before re-entering the space. (Check out the resources section below if you want a recommendation on testing products).

12. Once the environment has been appropriately cleaned and the filters upgraded and replaced, the HVAC system can be turned back on.

13. Resume regular cleaning and maintenance of your HVAC system and your home, including continuing to remove dust as it accumulates.

This cleaning process helps exponentially remove particles found in the dust of the home. There is no current technology that can remove 100% of the particles found inside the home, especially if there is an abundance to begin with. While this is designed to remove as much particulate matter as possible with each cleaning, you can expect about a 60% reduction in total particle count with each cleaning. This is meant to be done immediately after remediation or renovation, or as an annual deep cleaning. If particle counts are still elevated after re-testing, it means one of two things. (1) A source is still present somewhere, creating particles. (2) Additional cleaning is required to continue to improve the environment. The goal is to continually remove dust and the potentially harmful particles that go along with it.