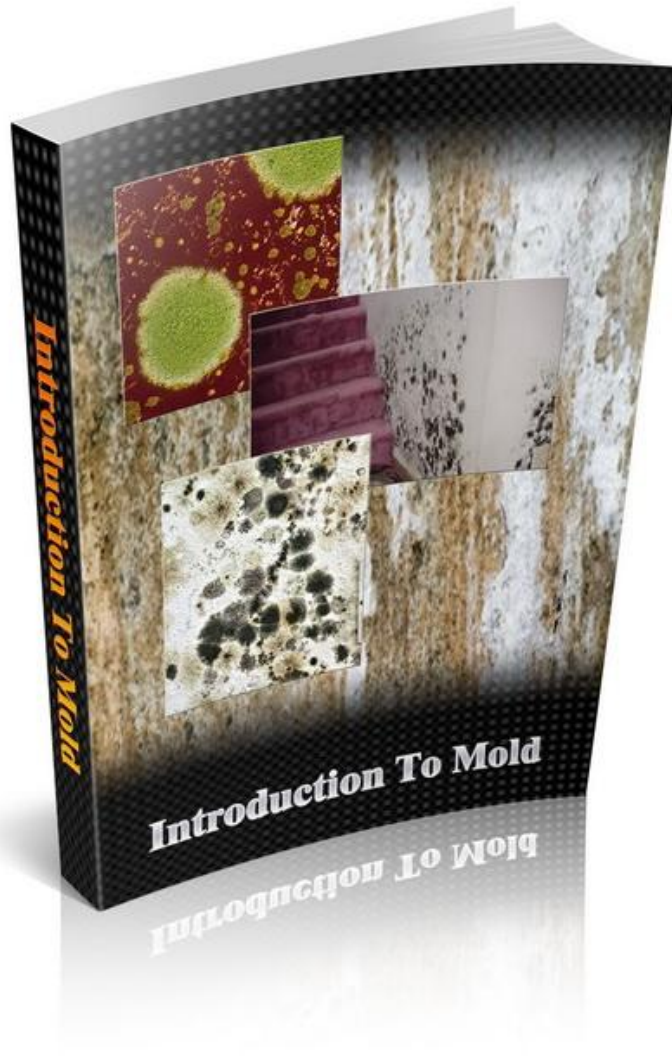


Introduction to Mold



Introduction to Mold

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Introduction to Mold

Introduction

Around the country, an increasing number of people are reporting a variety of symptoms related to the presence of mold growing in homes and businesses. While it is often assumed that mold will only grow in instances in which there has been a serious flood or a natural disaster, as we will discover in this guide; that is not always the case.

Mold does require moisture in order to grow, but many people are surprised by the fact that mold actually only requires a minimal amount of moisture in order to begin growing. Even if your home has not been the victim of a serious flood, you may still have mold growing in your home.

There is also another common misconception that if you have mold growing in your home, you will be able to see it. This is also not true. You could very well have mold growing in your home at this precise moment and never know it. Mold does have a distinct odor, but it is also very sneaking at hiding in locations in the home where you would never see it or suspect it, such as the air ducts of your home.

This can be an extremely dangerous situation because the spores from the mold can be disbursed throughout the home and may be affecting you, your family and anyone else who enters the home. In order to protect yourself, your family and others, it is imperative to learn as much as possible about

mold, including how it grows, areas that are most susceptible to the growth of mold and what you can do to prevent mold from growing in your home. It is also important to understand how to effectively remediate mold if you notice it growing in your home and what you can do to keep it from coming back in the future.

In this guide we are going to examine all of that and much more to keep your home free from mold.

Let's get started!

Chapter 1

What is Mold?

Mold is actually part of the natural environment that surrounds us. In the outdoors, molds play an important role in nature by breaking down organic matter that is already dead, such as trees and fallen leaves. The problem with mold occurs when it is present indoors. Mold reproduces and creates tiny spores. Those spores cannot be seen by the naked eye, but they do float through the air; both indoors and outdoors. Most often, mold begins growing indoors when mold spores land on wet surfaces. There are actually many different types of mold. All of the various types of mold must have moisture or water in order to grow.

While mold invades homes throughout all parts of the country, it doesn't always cause a problem. Many people are able to handle low-level exposure to mold. The real problem begins when mold begins to multiply and gains access to organic material, such as food, paper, wood, soil, fabric or leaves. When mold begins growing in your home, it can become a serious health risk.

Molds do have the potential to cause serious health issues. Molds produce allergens, which are the substances that result in allergic reactions. They also produce irritants and in some cases can produce toxic substances known as mycotoxins. When you inhale or touch mold or mold spores, you may experience an allergic reaction if you are particularly sensitive. The symptoms associated with a reaction to mold can vary, but may include allergy type symptoms such as red eyes, sneezing, runny nose and skin rash. It is fairly common to have a reaction to mold. The reaction may be delayed or immediate. Molds can also result in asthma attacks in individuals with asthma.

Mold exposure can also result in irritation to the skin, eyes, throat, nose and lungs; regardless of whether you are allergic or not. Research regarding the effects of mold on health is ongoing.

Understanding the Seriousness of Mold

The subject of mold is one that is frequently misunderstood and can represent serious health dangers. Many people frequently make the mistake of believing that mold is simply dust that poses no serious risk. Unfortunately, many people never even realize they or their family members have been affected by mold until it is far too late.

One of the reasons there is often such confusion about mold is because the symptoms related to mold poisoning can vary so much. The symptoms of mold poisoning can often vary from one person to another. This is because everyone's immune systems are different. Not only can the symptoms vary among different people, but the length of time between exposure and the presentation of symptoms can vary as well.

Persons who have been exposed to toxic mold can experience a variety of about 25 different symptoms. To make matters even worse, many of the symptoms can often imitate other health issues, including the flu and the common cold. While illnesses such as the cold and the flu will eventually disappear, the symptoms associated with toxic mold poisoning will not. In many instances, the symptoms may even become worse.

While one might assume that their physician would be able to detect mold poisoning, that is often not the case either. Unless your doctor knows you have been exposed to mold poisoning, they often are not able to diagnose the problem.

In considering whether you may have been exposed to mold poisoning there are many factors that must be carefully considered.

- For instance, do you live or work in a building that may have suffered damage from the weather?
- Does the structure where you live or work have stained ceilings?
- Do you find that you feel better once you leave either your home or work environment?

All of these are common questions that your physician would need to ask in order to determine whether you may have been exposed to toxic mold.

In addition, your doctor will need to find out about symptoms you may have experienced.

Symptoms of Mold Poisoning

Some of the most common symptoms of mold poisoning can include:

- Blurred or distorted vision
- Chronic fatigue
- Chronic pain
- Confusion
- Diarrhea or constipation
- Coughing
- Depression
- Dry eyes
- Hair loss

- Hearing loss
- Hoarseness
- Itchy or watery eyes
- Loss of concentration
- Low body temperature
- High or low blood pressure
- Mouth sores
- Mucous membrane irritation
- Nail infections
- Nosebleeds
- Red eyes
- Respiratory infections
- Restless legs
- Shortness of breath
- Short term memory loss
- Sinus infections
- Sleeping for long periods of time
- Sudden abdominal pain
- Sudden weight gain or loss
- Pain or tightness in the chest
- Tingling or burning sensations in the feet or hands
- Tooth decay
- Unusual migraines or headaches
- Muscle pain
- Cramps
- Fatigue
- Weakness
- Sore throat
- Sensitivity to light

- Disorientation
- Dizziness
- Loss of balance
- Kidney problems
- Skin rash
- Dehydration
- Night sweats
- Heavy menstrual flow
- Prone to infections
- Panic attacks
- Tremors
- Attention deficit disorder
- Swollen lymph nodes
- Bruise easily
- Hives
- Infertility
- Miscarriage
- Fibromyalgia
- Multiple sclerosis
- Developmental delays in children
- Mood swings
- Vomiting
- Stomach ulcers
- Jaundice

Keep in mind that anyone of any age can become a victim of mold poisoning. Mold can be found in new buildings and structures as well as older structures. Sadly, many people never realize they are suffering from symptoms related to mold poisoning until several years later. Some people

may experience one or two symptoms while others may experience an entire host of symptoms. You do not have to experience all of the symptoms to have been exposed to toxic mold.

If you feel as though you may be coming down with a cold or the flu and your symptoms never seem to go away regardless of what actions you take, it is possible that you could be suffering from toxic mold symptoms. Even though you may not have seen any visible mold in your home or workplace, that does not mean that it isn't there.

Signs of Mold

There are often signs that can indicate the presence of mold, including:

- A musty or earthy smell that lingers throughout the structure. This smell is common in basements as well as in air ducts. Even the slightest musty smell can indicate there may be a fungus problem.
- Do you feel as though you are experiencing allergies for brief periods in certain areas of your home or workplace? If so, there may be a fungal problem.

If you have noticed either of the above problems, there is a chance you may have mold in your home or workplace. If so, it is important to check the humidity level. Mold is attracted to moisture and thrives from it. Therefore, it is imperative to be certain you do not have a high amount of moisture in your home. You should also check for any signs of possible leaks.

Treating Mold

There is a common misconception that in order to get healthy and recover from mold poisoning, all you need to do is see your doctor. That is not the case. In order to completely recover, it is necessary to remove all possible traces of mold from the home. Whether or not you will be able to do this on your own or whether you will need to hire a professional to handle the matter for you will depend on the size of the problem.

If the fungus in question is less than 10 square feet, you should be able to remove the growth on your own. If it is larger than that or if you are uncertain of the size of the problem, it is advisable to hire a professional mold inspector. The inspector will be able to inspect your home and then identify areas where there may be fungal growth.

Along with making sure the mold has been permanently removed from your home, you will then need to take steps to treat yourself. It is important to see your doctor if you think you may have mold in your home. He or she can perform a series of blood tests to test you for exposure. From that point, your doctor will be able to recommend a treatment plan.

Keep in mind that it is absolutely essential to ensure the mold has been thoroughly removed from your environment. When toxic funguses are left untreated they can result in serious health problems including depression, memory loss and more.

If you have mold in your home, it is absolutely essential that it be removed immediately and permanently. The symptoms associated with toxic mold are no laughing matter and cannot be ignored. Studies have indicated that as many as 50% of all homes may contain mold.

Remember that it really doesn't matter how conscientious you are about cleaning your home. Molds can live anywhere; regardless of how clean or dirty the environment may be, as long as there is moisture. Also, just because you do not see any mold does not mean it isn't there. Mold can be found on walls, floors, carpets, ceilings, furniture, fabrics, ductwork and insulation. You can even find mold in the crawl space of your home.

One of the worst locations for mold is inside the air ducts of your home. This is because the mold spores will circulate inside the system through the air and then settle into the dust in various locations. Whenever the central heat or air is turned on, the mold spores become distributed throughout the home.

Mold Inspection

The best method for preventing a fungus problem is to make sure you know for certain whether mold is actually growing inside the central heating and air system. One way to do this is to hire a professional mold inspector. The inspector will be able to access the coil in the unit as well as the lining and blower. By taking a sample of the dust from the component's surface, he or she will then be able to determine whether there is any fungus growing inside the dust or not.

You should be aware that the cost for this type of inspection can vary. In some areas, the cost for a mold inspection can be as little as \$200, while in other areas it can cost as much as \$1,000 or possibly even more, depending on the complexity of the problem.

If it is determined that there is an active fungus growing in your central air system, the next step is to hire a mold remediation company. The mold

remediation company will clean the entire central air and heating system. Dust and any fungus will be removed from the blower cabinet and the coil housing along with the interior surfaces of all ductwork. A HEPA vacuum is used for this process.

In the event the fungus problem was found in other areas of the home, you may need to consider staying somewhere else until all work removing the mold from your home has been completed. Remember that it is never safe to stay around active fungal spores. If the situation is mild enough you may be able to remove it on your own while using the proper protective equipment. If the problem is severe enough, it is important to call in a professional who is experienced at handling the removal of mold and for you to vacate the premises while the problem is remediated.

Chapter 2

Types of Mold

There are many different types of mold that can grow in the home or work environment. Researchers now know of approximately 100,000 different species of mold. Among those different species there are approximately 150 different kinds of household mold. There can even be different sub-types of those types of mold.

The process of identifying mold can be time consuming and painstaking. Identifying a mold on an individual level requires extensive studies by a mold expert. As a result, it is impossible to identify the type of mold that may be growing in your home simply by looking at it or comparing it to photos of mold. This is because most molds have a very similar appearance. Even a mold expert may have difficulty in identifying mold simply based on appearance.

The only reliable way to determine for certain what type of mold you may be dealing with is to take a sample and send it into a qualified lab for testing. Remember that you should not attempt to try to identify the type of mold that may be present in your home on your own.

Different Types of Mold

Cladosporium

This is a very common type of mold. It may have a green, grey, brown or black appearance. It is classified as a Hazard Class B or C, based on the specific species. This type of mold can grow in a variety of locations, such as wood, walls, insulation and dust.

Aspergillus

This is another common type of mold. It may have a grey, yellow, green, white, black or brown appearance. It is typically classified as a Hazard Class A or b. Some forms of this mold may result in an infection within persons who have weak immune systems. In other people it may only cause allergic reactions. This type of mold can grow on paper products, insulation, walls, soil, clothing and other locations.

Penicillium

This name may sound familiar because antibiotics that are used today were once discovered as a result of a species of this mold. Even so, this genus of mold can be hazardous. It may have a green, white or blue appearance. It is typically classified as a Hazard B or C. It can be found on foods, such as fruit and cheese as well as in insulation, on walls and other locations.

Ulocladium

This type of mold typically has a grey or black appearance. It is classified as either a Hazard Class B or C. It often grows in damp areas and can be found around windows, on walls, dusty areas and other locations.

Acremonium

This type of mold is frequently found on drywall/sheetrock and insulation. It may also be found in damp areas. It often has a grey, brown or white appearance. This species may be a Hazard Class A, B or C.

Alternaria

This type of mold may appear similar to Ulocladium under a microscope. It can have a grey or black appearance. It is typically classified as a Hazard Class B mold and can cause a variety of allergic reactions. It can be found on

dusty areas, walls, damp areas, around windows, on plants, soil and other locations.

Effluorescence

It is important to note that in some cases what you might be seeing is actually effluorescence instead of mold. This is a deposit of white salts. It often appears on concrete in areas where water has penetrated and left salt deposits.

Stachybotrys or Black Mold

Of the many different types of mold, one of the most dangerous is black mold. Estimates indicate that approximately 25% of all homes have black mold growing somewhere. Regardless of where in the home, the mold may be growing, the microscopic spores can be released into the air and then travel throughout the home through the central air and heating system.

The most serious danger presented by these spores is that they deplete the myelin protecting coating on the body's nerves. As a result, the nerves are exposed and may begin functioning improperly or not even functioning at all.

Black mold is highly dangerous and toxic. It can cause a variety of different symptoms, affecting the entire body including the immune, gastrointestinal, respiratory and nervous systems, as well as the skin. When severe enough, the symptoms of black mold can even begin fatal. Black mold can be particularly dangerous to individuals with allergies to mold.

Symptoms of Black Mold

One of the most common symptoms of black mold is a choking sensation. A person may awaken in the middle of the night with this feeling. Other common symptoms associated with black mold include:

- Abdominal pain
- Acid reflux
- Anaphylaxis
- Anemia
- Anxiety
- Asthma
- Bad taste in the mouth
- Coordination problems
- Blood pressure irregularities
- Bloody nose
- Bronchitis
- Breathing problems
- Bruising easily
- Candida infections
- Chest pain
- Chills
- Coated tongue
- Chest congestion
- Cough
- Dandruff
- Diarrhea
- Difficulty swallowing
- Digestive problems
- Dizziness
- Puffy eyes
- Fever
- Fungal infections
- Headaches
- Hot flashes

- Hypersensitivity to odors
- Indigestion
- Infections
- Flushing of the face
- Low sex drive
- Chronic itching
- Memory loss
- Mood swings
- Burning in the mouth or throat
- Muscle aches and pains
- Nausea/vomiting
- Numbness in the face and/or limbs
- Open sores
- Poor appetite
- Physical weakness
- Tremors
- Rashes/hives
- Sore throat
- Fatigue
- Urinary tract infections
- Vision problems

Health and Black Mold

Many experts now believe that another condition that may be associated with black mold is Acute Idiopathic Pulmonary Hemorrhage or AIPH. This condition causes bleeding in the lungs of infants.

Another condition that may be related to black mold is hypersensitivity pneumonitis. This is a rare disease that mimics bacterial pneumonia and can

be caused by both short-term and long-term exposure to black mold. High levels of exposure to black mold may also result in infertility.

Many of the symptoms of black mold can cause respiratory problems and flu-like symptoms that make an appearance just after a single exposure to a large concentration of black mold. This is known as organic dust toxic syndrome or ODTS and it is most common in persons who remediate mold problems and farm workers. The symptoms of this condition typically disappear within 24 hours of exposure.

At Risk Groups

There is also concern among healthcare professionals that exposure to toxic black mold may result in neurological damage. This can be particularly dangerous for children because the organ systems and brain are still developing during childhood. Along with children, the elderly are also at a higher risk for problems related to black mold poisoning.

Other at risk groups include those with bronchitis, patients undergoing chemotherapy, HIV/AIDS patients, organ transplant recipients and anyone who has a respiratory condition. Women who are pregnant may experience several black mold symptoms and are also at risk for miscarriage.

Hazard Classes

A hazard system has been developed for identifying the dangers presented by different types of molds.

Hazard Class A

Molds in this group are directly hazardous to one's health as a result of the risk of infection or because of the creation of toxins.

Hazard Class B

Molds in this group can result in allergic reactions, particularly over long periods of time.

Hazard Class C

Molds in this group or not known to pose any health risks or reactions; however they can result in structural damage.

Chapter 3

Removing Mold from your Home

As frightening as the consequences of mold poisoning can be, many people still refuse to accept that they may have this fungus in their home. There is often a misconception that if you keep your home cleaning enough, you will never have to worry about the presence of mold. This is not the case; however, and even clean homes can have mold infestations.

Where Mold Grows

Your home may be particularly prone to mold if you live in an area with a lot of humidity. This is because moisture actually causes molds to become more susceptible to those areas. Humidity is not the only factor that can create the ideal environment for mold. Leaky pipes can also be a contributing factor to a toxic environment for mold. Many times, leaky pipes are never noticed because the leak is relatively small. Even worse, the mold may not always be visible because it becomes attached to the inside of the pipes.

Another common area where mold may breed is any area where there has been a flood. It does not matter if it was a huge flood from a rainstorm or a natural disaster or a minor flood from a toilet overflowing. Anytime, there has been a flood, there can be a breeding ground for mold. It can take several days for the flooded area to dry out, which provides ample opportunity for mold to grow.

There are many signs that may indicate you have a problem with mold growing in your home, including stains on the ceilings and/or the walls of your home. Such stains typically have a yellowish color, but they can also be brown, green or black and indicate a mold problem.

Yet another sign that may indicate there is a mold infestation in your home is odor. A musty or mildew smell could indicate there are fungi growing where those odors are lingering. Some of the most common areas include heating and air conditioning units and closets.

It is crucial to determine the source of the problem, but that is not the only step that must be taken.

Safety Precautions

The next step is removing the mold. Although this might seem as though it would be easy enough, it is important to recognize that the removal of mold must be carefully handled. If mold is not removed using the proper safety precautions and equipment, you could be exposing yourself to serious health risks.

It is absolutely imperative that you make certain you wear the right safety equipment, including a respiratory mask, gloves and eye protection when you are attempting to remove mold. There are also many different products that can be used when removing mold. The most common product is bleach.

Along with using the right equipment and products, you may find that the use of a dehumidifier can be helpful in controlling humidity that actually attracts dangerous molds. Keep in mind that if the mold problem is severe enough that a dehumidifier and products such as bleach do not work, you may need to call in a professional.

Steps to Remove Mold

If you do attempt to remove mold from your home on your own, there are several important things you need to be aware of. Along with using the right protective gear as mentioned above, it is important to make sure you properly seal off the affected area. You can do this using plastic sheeting and

tape. Also, make sure you turn off any air conditioners, ceiling fans or central heat and air systems to ensure the mold spores do not become airborne and subsequently infect any other areas of the home.

The next step is to locate the source of the mold growth and then make any necessary repairs. Remember to remove or cover any items within the affected area to prevent them from becoming contaminated with mold.

You will then need to use a mold spray that is formulated specifically for treating and killing toxic mold. Make sure you allow the cleaner to set for the specified time. Always check the manufacturer's directions. Use a clean wet cloth to wipe the area. Make sure you are wearing gloves.

After the mold has been removed, you might consider using a dehumidifier to help reduce moisture in the area. You can also place several fans in the affected area to speed along the drying process.

If you do have a moisture problem in the area where you live, you might consider installing an exhaust fan in the affected room and opening the windows whenever it is possible to do so. This will help to reduce humidity. Otherwise, you may find that you continually need to remove mold from your home.

Types of Mold Removers

Keep in mind when you are preparing to remove mold from your home, that not all mold removers are the same. There are several important questions to consider when you are looking at which mold remover will be best for your situation. First, consider whether you prefer a chemical-free mold remover. If you are on a small budget, you might also consider making your own home remedy for treating mold. The right mold remover should fit your budget and not be so harsh that it causes health problems. It should also be

effective. Keep in mind that in some cases you may need to use several applications to completely remove the mold.

Making your own mold spray is not that difficult and may be able to save you some money. It can also be a good solution if you are sensitive to bleach and ammonia, which are two common ingredients contained in many commercial mold sprays. Making your own mold spray is also a much more eco-friendly option, so if you are looking for a green route, this could be a good solution for you.

Vinegar can be a cheap solution that can also be effective. If you choose to use vinegar, make sure you do not dilute it. Vinegar can be applied through the use of a sprayer or you can use a sponge to apply it. Make sure you allow it to dry. You do not need to rinse it.

Hydrogen peroxide is another effective and inexpensive solution you might consider using to kill mold in your home. Like vinegar, you can apply it using a sprayer or a sponge. Be sure to allow it to dry. You do not need to rinse it. Be aware that this solution does have a tendency to bleach some surfaces, so do not use it on any colored surfaces or fabrics.

Lemon juice can be effective for killing mold as well. It needs to be used in its undiluted state. You can mix the juice with a bit of salt and then apply that solution to whatever areas are affected. Allow it to set for about ten minutes and then rinse.

Tea tree oil can also be effective, but you may find it also to be expensive as a solution for killing mold. There can also be a strong smell associated with tea tree oil. Mix one teaspoon of the oil with one cup of water. Shake to mix well and then apply to affected surfaces. Allow to dry. No need to rinse.

Grapefruit seed extract is another natural solution you might use to kill mold. Like tea tree oil, it can be expensive, but it doesn't have the same strong odor as many other solutions. Mix ten drops of the extract with one cup of water. Shake to mix and then apply to affected surfaces. Allow to dry. No need to rinse.

Borax powder can be used as well by mixing one tablespoon powder with one cup of water. Shake to mix and apply the solution to the affected area. Scrub if needed and then reapply. No need to rinse.

Baking soda can be used to prevent mold from growing on household plants. Mix three teaspoons of baking soda with one gallon of water and then spray the solution on the plant as well as on the soil.

Chapter 4

Specific Types of Mold Damage

Handling Mold from Water Damage

One of the most common sources of mold in a home is from water damage. Remember that if your home has ever been damaged by water from any type of flooding, no matter how minor it might have seemed, you could be at risk for a mold infestation.

Before you even attempt to treat the mold, the first step is to eliminate the actual source of the problem. This means you will need to repair any leaky pipes as well as ceilings or walls. You also need to be absolutely certain that the area is free from any moisture. Remember, mold thrives on moisture.

Once the affected area has been repaired and allowed to dry out, the next step is to seal it off completely using plastic and tape to prevent the spores from contaminating other areas. It is also a good idea to open windows or run an exhaust fan to assist with ventilation.

As when cleaning any moldy area, you need to make sure you are wearing protective eyewear, a pair of rubber gloves and a respiratory mask. While this might seem as though it is a bit of overkill, keep in mind that without such protective gear you are exposing yourself to the spores produced by mold and that can put you at risk for a number of serious health problems.

Sort through any items in the affected area. Seal off any items that have been damaged by the mold that you cannot save. You can do this by placing them in a plastic bag and then tossing them out. Such items might include wallpaper, drywall, furniture or any other item that has a porous nature.

The next step is to use a mold removal product and spray it onto the affected surfaces. Use a stiff brush to scrub the area. Next, spray the area

again and allow the product to set for several minutes. Rinse and repeat if you see if it necessary to do so. Use a clean and dry cloth to wipe away any remaining residue.

Remember that even after you have thoroughly cleaned the area and all signs of the mold are gone, you will need to run several fans or a dehumidifier. This will help to make sure the area dries out as quickly as possible.

In a small area, removing mold due to water damage can be a simple enough matter to handle on your own. If the area that is affected is large; however, it is always best to call in a professional to handle the matter for you. Even if you think you know what you are doing, a certified professional is the best option for handling a large mold removal job. Also, keep in mind that in some areas there may even be laws which dictate having a professional handle the job.

Removing Mold from Carpet

If you have had any type of flooding or water damage and noticed mold growing on affected carpets, in most cases, the carpet cannot be salvaged and will need to be discarded. If the mold is not very severe or widespread; however, you may be able to remove the mold and save the carpet.

If the carpeting is wall-to-wall, it will be necessary to lift up the tack strip in the affected area. Start at the corner of the carpeting, nearest the water damage and fold the carpet back.

Next, remove the padding that is located beneath the carpeting. Be sure to check the sub-flooring beneath the carpeting. If you notice any moisture, you will need to allow this to dry before you can add more padding. To speed the process along, you can use a dehumidifier or a fan. It is also

important to make sure you wash the floor using a mold remover and a scrub brush. Allow the floor to dry completely.

The next step is to use a mold removal product on the carpeting itself as well as on the underside of the carpeting. Be sure to check the manufacturer's directions on the mold removal to be sure it can be safely used on carpeting. Follow the directions and use a scrub brush to make sure the core of the carpet fibers is thoroughly treated. Continue scrubbing until you no longer see any sign of mold.

Apply the mold removal product once again and allow it to set for the recommended time. Use a clean cloth to wipe away any remaining residue. Always make sure you use a clean cloth for each application or you may re-contaminate the area.

You will then need to dry out the carpeting. Placing several fans near the affected area of the carpeting can help to speed up the process.

Now, you will need to apply a new layer of padding as well as a new tack strip if there were any signs of mold present. You can then replace the carpet and then vacuum the carpet to remove any remaining dust and dirt. The best type of vacuum to use is a HEPA vacuum.

Finally, make sure you keep a close eye on that area of the carpeting to ensure the mold does not return in the future. If you do notice a return of the mold in the future, you may need to throw out the carpeting. Although this may seem like a waste, it is much better to get rid of the carpet and protect your health than to keep it and have it pose a serious health risk to you and to others.

Removing Mold from Drywall

Have you notice small black spots on your walls? If so, you could have a mold problem. If so, it is important to address the problem and remove the mold as quickly as possible.

The first step is to be certain that what you are actually dealing with really is a mold infestation. In most cases, when you have mold in your home, there is an odor. A musty smell can usually indicate there is mold growing somewhere in the home. You can also usually find mold by searching out signs of water damage. The most likely locations for water damage include the attic, basement, near windows and doors and behind appliances that use water such as the freezer, water heater, refrigerator, washer, dryer and dishwasher.

The next step is to determine whether the damage is small enough that you can handle it on your own or whether you need to call in a professional. In most cases, if the damage exceeds an area that is 10 square feet, you should call in a professional mold removal company.

If you find that the problem is small enough for you to be able to handle on your own, you will need to make sure you are wearing protective gear, including a respiratory mask, rubber gloves and protective eyewear.

Once you have on the protective gear, cut away the areas of the wall where the mold is present. This is critical because you cannot clean mold from drywall. You will need to make sure you exercise extreme caution around electrical wiring as you remove sections of the wall.

After the contaminated areas have been cut away and disposed of, you will then need to sand the wood studs where the mold wall was attached. This will help to eradicate any traces of the mold.

Once you have sanded the areas, the next step is to use a mold removal product and apply it to the surrounding surfaces. Allow it to penetrate for a minimum of 15 minutes. Always make sure you use caution when applying the product around electrical wiring.

Once the surfaces have been completely dried and the mold has been removed, you will then need to proceed with repairing the wall. It is a good idea to make sure you are running some kind of ventilation to help speed along the drying process.

Chapter 5

Understanding Mildew and How to Prevent it

Although they may appear the same, mildew and mold are not actually the same. Mold can sometimes be harmless, but it can also be dangerous. Mildew is typically harmless, although it can cause allergies in people who are particularly sensitive.

In either case, when you have a mold or a mildew problem, you are dealing with a fungus. Because of this it is important to make sure you are wearing a respiratory mask and rubber gloves anytime you are attempting to remove either mold or mildew.

Symptoms Associated with Mildew

Like mold, mildew can cause a number of allergic reactions and symptoms, including the following:

- Sneezing
- Coughing
- Sinus congestion
- Watery eyes
- Red eyes
- Skin rash
- Runny nose
- Fatigue
- Headache

Understanding Mildew

You also need to make sure you know the source of the mildew problem. It could be something as simple as shower mold, which can be easily removed on your own. In other cases, it could also be something more serious, such

as mildew or mold that is growing in the basement. If that is the case, and the problem is larger than ten square feet, you should call in a professional to handle the removal and remediation.

Mildew can make an appearance on practically anything. We often see it in bathrooms, but it can also show up on fabric and paper items as well. In most instances, dampness is required along with a specific temperature in order for mildew to develop. This is why you often find it in certain areas. It is prone to growing on anything that may be damp, such as leather, paper, linen, cotton, wood, silk and other types of fabrics.

Mildew usually expands in moist environments, especially during the summer when humidity may be high. It is also prone to growing in homes that are dark and may be shut-up because there is no fresh air. This is why mildew often grows in crawl spaces, cellars, air conditioner ducts and closets.

Other common areas of the home where you may find mildew include rugs, damp clothes, shower curtains, bathtub or shower caulking and draperies. There is usually a rather distinctive smell associated with mildew. When mildew develops it can often stain fabrics and paper. If the mildew is not treated, it can actually consume the item. Staining and deterioration that is caused by mildew cannot be repaired.

It is possible to prevent mildew from developing in your home when you know the right steps to take.

Steps for Preventing Mildew

- Prevent the moisture and spores that are necessary for mildew to develop by keeping the humidity in your home under control. Whenever possible, humidity levels should be kept at 45% to 55%.

Humidity should never reach levels above 65% to ensure mildew does not develop.

- Use dehumidifiers in your home to help keep mildew under control.
- Use fans in your home to assist in keeping air circulating.
- Work to keep the temperature in your home consistent and between 64 and 68 degrees F.
- If you have any gutters, pipes or waterspouts that may be leaking or trickling, make sure you repair them. Also, repair any cracked windows and holes in the roof of your home.

Cleaning Mildew

- If you notice mildew on the tiles of your bathroom or walls, wash the affected area using a solution of diluted chlorine bleach. Use one cup of bleach for every one gallon of water. After you have finished scrubbing the area, be sure to rinse it completely with plain water and then allow it to dry.
- If you notice mildew on the floor of your basement, sprinkle bleaching powder or chlorinated lime on the floor. Wait until the musty smell has faded and then sweep up the powder. It can also be helpful to increase the air circulation and heat in that area to help prevent moisture.
- To clean mildew from bathroom caulking, you can follow the above method. Note that if the mildew has actually penetrated the surface of the caulking, the best method may be to remove the old caulking and

then recaulk. Otherwise, you may find that the mildew will continue to return.

- If you have tile grout, use a mildew spray to remove the mildew.

Cleaning Mildew from Furniture

- If you have wood furniture, be sure to varnish and seal it to help protect it from mildew.
- Unfinished wood can be coated with a paste wax.
- Wood and wicker furniture should be brought indoors during the winter months.
- To clean mildew from fabric cushions, spray with a solution of warm water, detergent and borax. Wait a few moments and then rinse.

Chapter 6

Preventing Mold Growth in your Home

The health consequences associated with mold growth in your home can certainly be serious. This is why it is imperative that you take steps to remove mold once you know it is growing in your home and take preventative steps to prevent it from growing in the future. The key to controlling mold in your home lies in controlling moisture.

Water can come from a variety of different sources in your home. For instance, water can enter the home by seeping into basement floor or through leaks. Showers can introduce moisture into the air in the home, as can cooking. The amount of moisture present in the air in your home often depends on the temperature of the air.

When temperatures decrease, the air is not able to hold as much moisture. This explains why moisture forms condensation on cold surfaces during cold weather. For instance, you might notice droplets of water forming on the inside of the windows during winter. This type of moisture can lead to the development of fungi.

Controlling Moisture in the Home

There are several important ways you can help to control the presence of moisture in your home.

- One of the most important steps to take is to repair leaks and any areas where there may be seepage. If water is entering your home from the outside, you have a variety of options available to you. Even simple landscaping can help to fix this problem in many cases. If the problem is severe, you may need to consider excavation and waterproofing. The key is to make sure the ground slopes away from

your home. When there is water present in the basement this can occur as the result of water flowing toward the house or gutters functioning improperly. Leaks inside pipes and around sinks and bathtubs can also provide a breeding ground for mold.

- Placing a plastic cover over dirt within crawlspaces can also help to prevent moisture from forming and coming in from the ground. Make certain all crawlspaces are well-ventilated.
- It is also a good idea to use exhaust fans in kitchens and bathrooms to assist in removing moisture to the outside of the home. Clothes dryers should be vented to the outside as well.
- Make sure you turn off any appliances if you notice moisture on surfaces and windows, such as humidifiers.
- Air conditioners and dehumidifiers should be used in climates that are hot and humid to help reduce the amount of moisture in the air.
- If you notice moisture condenses on cold surfaces, it is important to raise the temperature. Use storm windows and insulation. You should also keep doors open between rooms. This is particularly important in regards to doors to closets that might be colder than rooms in the homes as a way of increasing circulation. Circulation conducts heat to cold surfaces. You can increase air circulation with the use of fans as well as by moving furniture away from corners to promote heat and air circulation. Make certain there is a source of fresh air in your home to assist in expelling excessive amounts of moisture from the air.

- Rust can be an indication there is condensation occurring within a drainpipe. To prevent condensation, make sure your pipes are insulated.
- Be sure your roof gutters are cleaned and repaired on a regular basis.
- Keep your air conditioner drip pans clean. Drain lines should be kept unobstructed and flowing in a proper manner.
- Make sure you keep the humidity indoor low. When possible, indoor humidity should be kept below 60%. A humidity meter can be used for this purpose. You can find this type of meter available at most hardware stores for under \$50. Remember that condensation can be an indicator of high humidity indoors. If you see condensation or moisture collecting on walls, windows or pipes, it is important to take action quickly and be sure the wet surface is dried immediately.
- Cover all cold surfaces, including cold water pipes, with insulation to prevent the collection of moisture.
- If you rent instead of own, make sure you report all plumbing leaks and moisture problems immediately to your landlord. If the problem is not addressed, consider contacting local, state or federal housing or health authorities.
- Keep a close eye on carpet that is laid over concrete floors. Carpet is capable of absorbing moisture and is a common place for mold and funguses to grow. It is usually a better idea to use area rugs that can be washed frequently. If you do need to install carpet over a concrete floor and you live in a climate where there weather is hot and humid, consider using a vapor barrier, such as plastic sheeting, over the

concrete. That should then be covered with sub-flooring, such as insulation that is covered with plywood in order to prevent problems with moisture.

- Keep in mind that moisture related problems and the best way to resolve them often vary from one climate to another. In the Northeast, the weather tends to be cold and wet while in the Southwest it is hot and dry. In the Western Mountain states, the climate is cold and dry while in the South it is hot and wet. Each of these regions can experience problems with moisture.
- You may notice excessive moisture collecting on your windows and other surfaces in the home if your thermostat is set too high. Whenever there is humidity present in the home for long periods of time, it can result in damage to walls. This is particularly true if the temperature outside is very low. Excess moisture will condense on glass because the glass is cold. There are many other sources of excessive moisture, including running water, taking long showers, drying clothes indoors, plants, etc.
- A home that is tight and energy efficient will naturally hold more moisture inside. As a result, you may find it necessary to run a ventilating fan in the bath or kitchen. Keeping a window open for a brief period of time may also help in removing moisture. Caulking around windows and using storm windows can also help in keeping the interior glass warm while reducing condensation and moisture.
- It is usually not a good idea to use a humidifier in a structure unless you also have proper vapor barriers. This is because there is the strong potential for moisture to buildup and result in serious damage.

If this is a concern for you, you might consider consulting a contractor to ensure you have adequate vapor barriers in place in your home. A humidity indicator can also be used to measure the relative humidity that is present in your home.

Identifying the Causes of Mold and Mildew Problems in the Home

Mildew and mold are frequently found on exterior wall surfaces, usually in corner rooms of the home. Exposed corner rooms of the home typically have much colder temperatures than adjoining rooms. This means there is also usually a higher relative humidity in those rooms than in other rooms.

Cleaning the Air Ducts in your Home

One of the most common questions many homeowners have is whether they should consider having the air ducts in their home cleaned to remove mold and mildew.

Generally, you should consider having the air ducts in your home cleaned in the following circumstances:

If you notice substantial and visible growth of mold inside hard surfaces of the ducts or other components present in the heating and cooling system of the home. Keep in mind that you may not always see the presence of mold, but that does not mean it is not there. This is because there are many components and sections of a heating and air system which may not be visible to you.

Keep in mind that sometimes there may be a substance that may appear similar to mold, but only an expert can make a positive determination regarding whether the substance actually is mold or not. A lab analysis is typically necessary to make a final determination.

If your air ducts are insulated and the insulation becomes moldy or wet, you likely will not be able to clean it effectively and it will need to be removed and then replaced.

Remember that if the conditions that resulted in the growth of the mold are not corrected, it is likely the mold will return. In order to prevent mold from growing in your home, it is critical that you make sure you control moisture. If you have a problem with mold in your home, it is imperative that you clean up the mold immediately and repair the moisture problem that is leading to the growth of the mold.

Ideally, water damaged areas should be dried within 24-48 hours in order to prevent the growth of mold. Eventually, mold will destroy anything on which it grows. Damage to your home as well as your furnishings can be prevented along with potential health issues by making sure you are controlling moisture in your home.

Testing for Mold

In some instances, if you notice visible mold growth in your home, you may need to sample the mold and have it tested. If an area has been adequately remediated, surface sampling can be conducted by professionals.

Chapter 7

What you Need to Know about Hiring Mold Inspectors

It can be devastating when you are the victim of a natural disaster or you experience severe flooding in your home. Most people are never prepared to handle this type of situation and find themselves coping with mold and wondering what they can do to appropriately handle the problem.

If it is obvious that you have mold in your home, you may need to hire a mold remediation company or inspector to handle the problem. You should only attempt to handle mold problems on your own if the problem is less than ten square feet in size. If the problem is larger than this, you should call in professionals to appropriately remove the mold.

In some cases you may only suspect that you have mold in your home because of the smell, but may not be actually able to see it. In this case the fungus may be hidden and you should hire a professional mold inspector.

The best course of action is to hire a mold inspector who can come to your home within 24 hours. It is imperative that you do not delay in having mold inspected and treated within your home. You should also make sure that any mold inspector you consider hiring is certified as well as licensed. In some states it is necessary for professional mold inspectors to have both certification and licensure in order to practice. That is not the case in all states, so be sure to check out your state's requirements.

Along with being certified and licensed, it is also important for you to check with any mold inspection company and ask for references available from other clients. It is also a good idea to make sure the company is listed with

the Better Business Bureau. Find out whether there have been any complaints filed about the company.

In addition, make certain the company provides a contract. This will help to protect both you and the company and ensure everyone is in full agreement regarding the work that is to be performed. The contract should include an agreement regarding the work to be performed. This should include having the company take a sample of mold that is found in the home as well as an air sampling to test for possible airborne mold.

Furthermore, the contract should include an agreement regarding a lab analysis report of any mold that is found inside the home. You may also wish to ensure the contract includes an agreement regarding a moisture and leak test of the home as well as a humidity test, air quality test and drainage test. The cost of the full inspection can vary based on the type of work that is to be performed and can range from around \$300 to \$900, based on the level of work performed.

Mold Insurance

You should know that as a result of the increase in claims related to mold, many insurance companies now include clauses that will exclude mold and damage that arises from mold from many insurance policies. At the current time, there is not any type of insurance coverage that is available for mold insurance in a standard insurance policy. It is possible to purchase additional mold insurance coverage, but you should be prepared to pay a large sum for it as it can be somewhat expensive.

It is a good idea to review your existing insurance policy to determine whether you have mold coverage. In addition, review your policy to make

sure that mold coverage is not actually excluded from your insurance policy. If you think that your home may be prone to damage from mold, it is important to take preventative steps and also consider purchasing mold insurance. It is now becoming fairly common for many homeowners to purchase mold insurance whenever they are having home improvements or renovations performed because they will need to access areas that are typically difficult to access, such as between walls.

If you do not have very humid or damp weather and your home is properly ventilated, there is a good chance you will not experience any difficulties with mold and probably do not need mold insurance.

What about Mold Paint?

Due to the damage and the health concerns that can arise from mold, many people are greatly concerned about it and will go to practically any lengths to make sure they avoid it whenever possible and get rid of it when it develops. One of the latest and most interesting products on the market for handling mold is mold paint.

It should be understood that if you already have mold, mold paint will not help you get rid of the existing problem. On the other hand, mold paint may be able to help you prevent a mold problem from developing. If you think your home may be susceptible to problems with mold, it can certainly be worth a try to coat certain walls of the home with mold paint, particularly in the basement and in corner rooms; two areas of the home that may be more prone to problems with mold. Bathrooms and kitchens may also be able to benefit from the use of mold paint.

Ultimately, it is important to recognize that the real key to ensuring your home does not develop problems with mold is by making sure you control the amount of moisture in your home. Areas of the home that are damp are always going to be more susceptible to the growth of mold. Basements and attics are common locations for mold to grow in the home. If you have any type of water leakage in your home, such as in the walls, mold can develop there as well. Bathrooms and kitchens as well as crawlspaces may also be prone to the growth of mold.

Mold paint can help in some instances to control the growth of mold. There are now many paints that are specially formulated to help prevent both mildew and mold from growing on surfaces that are painted with anti-mold paint. These paints commonly contain a substance known as mildewcide.

Glossary

AIR HANDLING UNIT (AHU)

This piece of equipment contains a blower or fan, heating and/or cooling coils, and other equipment such as controls, condensate drain pans and air filters.

ALLERGEN

This is a substance, such as mold, that can result in an allergic reaction.

ANTIMICROBIAL

This is an agent that kills microbial

BIOLOGICAL CONTAMINANTS

These are living organisms, such as bacteria, viruses or mold.

BIOCIDE

This is a substance that kills organisms like as mold.

FUNGI

This is a separate kingdom that is comprised of living things that are neither plants nor animals. The kingdom Fungi includes molds, yeasts, mushrooms, and puffballs. In this course, the terms fungi and mold are used interchangeably.

FUNGICIDE

This is a substance that kills fungi.

HEPA

A high efficiency air filter.

HVAC

Refers to heating, ventilation, and air-conditioning system.

HYPERSENSITIVITY

Excessive sensitivity.

HYPERSENSITIVITY PNEUMONITIS

This is a group of respiratory diseases that can cause inflammation of the lung. Most types of hypersensitivity pneumonitis are caused by the inhaling organic dusts, including molds.

MOLD

This is a group of organisms that belong to the kingdom Fungi.

mVOC (microbial volatile organic compound)

Refers to a chemical produced by mold that is a gas at room temperature and might have a moldy or musty odor.

MYCOTOXIN

Refers to a toxin made by a mold.

REMEDIATE

Fix.

SPORE

This is the method by which molds reproduce. Spores are microscopic. Spores can travel in many different ways. They can be passively moved by a breeze, mechanically disbursed, such as when a person or animal passes by or actively moved by the mold under moist conditions.

TOXIGENIC

Producing toxic substances

Conclusion

Mold can certainly be a serious situation in a home or a business. When mold is allowed to grow uninterrupted, it can cause a number of serious health issues. When a person that is particularly sensitive to mold comes into contact with it, mold can even prove to be fatal. The number of mold related health conditions is definitely on the rise around the country. This is why it is so imperative to understand mold, how it develops, how to prevent it and how to get rid of it if you notice it growing in your home.

The consequences related to the growth of mold are simply too serious to be ignored. By understanding mold you will be able to take steps to prevent it from growing in your home, remediate it if you do notice and protect the health of yourself and your family.