Controlling Asthma Triggers in the Child Care Environment

Section 1

Slide 1: Introduction

Welcome to “Controlling Asthma Triggers in the Child Care Environment.” Sometimes, substances in our indoor environment can cause health problems, including asthma symptoms. Experts estimate that more than 50 million people in America suffer from some form of allergic condition, including asthma. There is a good chance that you have already cared for a child who has asthma, or you will in the future.

Asthma symptoms are caused by “triggers.” These triggers can set off a reaction in the lungs and in other parts of the respiratory tract. The best way to control asthma is to limit exposure to the triggers that set off these reactions.

During this course, we will explore common asthma triggers and learn about strategies you can use to reduce those triggers in the indoor environment of your child care program.

Slide 2: Learning Objectives

After completing this course, you will be able to:

- Describe the connection between triggers in the indoor environment and asthma symptoms,
- Control and/or remove asthma triggers that are commonly found in the indoor child care environment, and
- Reduce the number and severity of asthma attacks among the children in your child care program.

Section 2

Slide 3: Children & Asthma

Asthma is one of the most frequent chronic disorders in childhood, currently affecting over 6 million children under the age of 18 across the United States. According to the Asthma & Allergy Foundation of America, “Asthma is the third-leading cause of hospital stays among children” (Asthma & Allergy Foundation of America, www.aafa.org). Asthma is one of the most common reasons children visit the emergency room, and also one of the top reasons they miss school (DSHS, 2015). The Texas Department of State Health Services estimates that about 1 out of every 10 children in Texas has asthma (DSHS, 2015). Since asthma is so serious and so widespread, it is extremely important that you know how to help manage asthma symptoms for the children in your care.
Slide 4: What is Asthma?

Before we learn more about preventing asthma attacks, let’s back up and take a closer look at what asthma really is.

Asthma is a lung disease. It is a chronic disease, meaning it continues over time. People with asthma have inflammation of the airways in their lungs because their lungs overreact when they come into contact with certain substances, called triggers. The breathing problems caused by asthma often happen in episodes called “attacks,” but the underlying inflammation is there all the time. During an asthma attack, the linings of the airways in the lungs swell, the airway muscles tighten, and the lungs secrete more mucus into the airways. All of this leads to difficulty breathing, and the familiar wheezing sound we tend to associate with asthma. Depending on its severity, asthma can be life threatening.

Slide 5: Asthma Symptoms

Asthma can cause different symptoms for different people, but some of the most recognizable symptoms of an asthma attack include:

- Chest tightness,
- Coughing,
- Shortness of breath, and
- Wheezing.

Slide 6: What Causes Asthma Symptoms?

The lungs of a person with asthma are excessively sensitive to substances in the environment. The substances that cause asthma symptoms are called “triggers” because they trigger a chain of events that lead to breathing problems for a person with asthma. Triggers range from viral infections to allergies, to irritating gases and particles in the air, to weather, exercise, and even emotions.

Common triggers found in indoor environments include cockroaches, tobacco smoke, wood smoke, perfume, cologne, paint or chemical fumes, hair spray, dust mites, pollen, mold, pollution, and animal dander. In child care settings, it is important to pay attention to germs that can cause respiratory infections, the indoor air temperature, the children’s level of stress and excitement, and how each child with asthma handles physical activity.

Section 3

Slide 7: Asthma Triggers

Now that you understand what happens when a person with asthma encounters a trigger, let’s take a look at the types of triggers in more detail. Asthma episodes can be triggered by:

- Exercise,
Later in this section, we will learn a little more about how each of these types of triggers affects people with asthma.

Not every trigger causes reactions in every person with asthma. Finding out which triggers affect a certain person isn’t always easy. Some people with asthma need to avoid several potential triggers, while others may only react to one or two. For each child in your care who has been diagnosed with asthma, you should have written instructions from a healthcare provider that lists triggers the child should avoid, symptoms to watch for, and how to respond if the child shows asthma symptoms while they’re in your care.

Sometimes when you work with young children, you may find yourself caring for a child who has been recently diagnosed, and the child’s healthcare provider and family might not know all of the triggers the child will react to. If this happens, you will probably be asked to help the child avoid known triggers, and to limit their exposure to suspected triggers one at a time. By observing how the child responds when each potential trigger is removed, you can help the child’s family and healthcare provider learn about the types of triggers the child needs to avoid in the future. Decisions about when and how to eliminate possible triggers for a specific child should always be made by the child’s healthcare provider.

Let’s look more closely at some of the most common asthma triggers and how they affect people with asthma.

**Slide 8: Exercise**

Running can trigger an episode in over 80 percent of children with asthma. Bronchodilator medications used before exercise can prevent most of these episodes. With proper control of asthma, most children with asthma can participate fully in physical activities. However, children with asthma may have more trouble when they are very active for long periods, especially when the weather is cold, allergen levels are high, or the child has a respiratory infection such as a cold.

Swimming seems to be the least asthma-provoking form of exercise, but it’s possible that pools with very high chlorine levels can trigger asthma attacks for some people. If you include water activities in your program, check with the families of any children with asthma to find out if chlorinated water is a trigger for each individual child.

**Slide 9: Emotions**

In rare cases, a child’s asthma might only be noticeable after crying, laughing, or yelling in response to an emotional situation. These normal emotional responses involve deep, rapid
breathing, which in turn can trigger asthma, just like physical activity such as running. Emotional stress itself – including anxiety, frustration, or anger – can also trigger asthma symptoms for some children. It is important to realize that asthma is not caused by emotions, though. It is not a psychological condition. It is a physical condition that can be set off by certain emotions.

Many children with asthma feel severe anxiety during an asthma attack. Not being able to breathe is scary! Unfortunately, when a child panics during an asthma attack, she tends to breathe more rapidly, which can further trigger the asthma. If a child in your care has an asthma attack, you can help by remaining calm, encouraging the child to relax and slow her breathing, and following the instructions on her treatment plan.

Slide 10: Infections

Respiratory infections, including the flu and the common cold, frequently trigger severe episodes of asthma. Research indicates that these infections are most often caused by viruses rather than bacteria. Antibiotics do not help when a child has a viral infection, so don’t be surprised if a child in your care gets a respiratory infection but doesn’t get a prescription for antibiotics. To keep viral illnesses to a minimum, everyone in your program – both children and caregivers – should have up-to-date vaccinations, including the flu vaccine. Catching the flu isn’t a big deal for most people, but it can cause serious complications for young children, and people with health issues such as asthma.

There are some relatively common bacterial infections that can cause asthma symptoms to flare. These include certain types of sinusitis (or sinus infections), bronchitis, and ear infections. Children with asthma may need to take antibiotics longer than their peers who don’t have asthma to make sure the infection is completely gone.

A lot of the bacteria and viruses that cause these infections are passed from person to person through physical contact. You can limit the spread of germs in your program by using good hygiene procedures such as:

- Washing your hands frequently with soap and water,
- Covering your mouth and nose with a tissue when you cough or sneeze,
- Putting used tissues in a waste basket,
- Coughing or sneezing into your upper sleeve if you don’t have a tissue,
- Keeping your hands away from your eyes, nose, and mouth,
- Cleaning your hands after coughing or sneezing, using soap and water,
- Staying at home when you’re sick, and
- Using an approved sanitizing solution to disinfect toys and surfaces regularly.

Slide 11: Weather

There are a number of weather- and climate-related triggers that can affect people with asthma. Many people with asthma experience symptoms when they breathe cold air. Studies have shown that breathing cold air provokes asthma attacks in most children with asthma. Children with
asthma may need to wear a special mask or scarf over their mouth and nose during outdoor play when it’s cold outside, and may have trouble breathing if the indoor environment is too cold.

Other weather conditions can affect people with asthma, too. For instance, when it is windy outside, more allergens and irritants will be scattered in the air, which can make asthma worse. After a heavy rainfall, however, the air tends to carry fewer allergens and irritants, which can be good for children with asthma. While rain can help reduce the amount of irritating particles in the air, it can also increase moisture and encourage mold growth, which can trigger asthma symptoms. There does not seem to be a one-size-fits-all climate that works for everyone with asthma. Working closely with families is the best way to learn if and how the weather will affect each child with asthma.

Slide 12: Allergens

Many children with asthma also have allergies. Exposure to allergens can trigger an asthma attack for some people. An allergic reaction occurs when the body reacts to a harmless substance as if it is dangerous. During an allergic reaction, the body releases chemicals, like histamine, that can produce swelling in the lining of the airways. Allergic reactions also lead to excess mucus production and can cause the muscles in the airways to contract. Do these symptoms sound familiar? They are the same physical processes that happen during an asthma attack, so it’s easy to see how allergic reactions and asthma attacks go hand in hand for a lot of people.

Common allergens found in child care environments include:

- Dust mites,
- Feathers,
- Pet dander,
- Insects (especially roaches),
- Rodents,
- Mold,
- Pollen, and, for some children,
- Food allergens.

Slide 13: Irritants

Irritants are substances that can aggravate the already inflamed airways of a person with asthma. While allergens are typically harmless for anyone who doesn’t have that particular allergy, irritants can cause problems for anyone. People with asthma are often more affected by irritants than other people, because they have constant inflammation in their airways. Some irritants to be aware of when caring for a child with asthma include:

- Tobacco smoke,
- Vapor from e-cigarettes,
- Smoke from other sources, such as burning wood, charcoal grills, or burned food,
- Perfumes, colognes, scented soaps, and other scented personal care products,
- Paint fumes,
- Hairspray, and
- Cleaning products.

There are so many possible triggers for asthma, it might seem overwhelming. Don’t worry, though! There are a lot of things you can do to help control those triggers, so children with asthma can participate fully in your program.

Section 4

Slide 14: Taking Control

Since every child with asthma responds differently to various triggers, the best thing you can do to protect the children in your care is to minimize potential triggers as much as possible. By keeping your program as trigger-free as you can, you’ll probably see fewer asthma attacks among the children, and if attacks do happen, they will probably be less severe and less frequent.

Asthma can be a life-threatening disease if it’s not properly managed. Always follow the asthma treatment plan for a child with asthma, including giving the right medications to the right child in the right doses at the right times, both to prevent attacks from happening and to treat attacks when they occur.

Slide 15: Controlling Triggers

There are four basic strategies to reduce or eliminate common asthma triggers in your indoor child care environment. They are:

- Controlling moisture,
- Cleaning regularly,
- Controlling pests, and
- Eliminating the source of the trigger.

Let’s look at each of these strategies in greater detail.

Slide 16: Controlling Moisture

Excess moisture in the air allows allergens, irritants, and germs to accumulate in your building. The ideal indoor relative humidity is between 40 and 60 percent. This range of relative humidity minimizes the growth of bacteria, viruses, fungi, mold, and dust mites.

To measure the relative humidity inside your facility, you will need a tool called a hygrometer. Some central air conditioning systems have a hygrometer built into their controls. If you find that certain areas tend to be too humid, you can use exhaust fans, dehumidifiers, or air conditioning systems to help dry them out. Air conditioning is a great tool to maintain the relative humidity inside your building, but if air conditioning systems aren’t maintained properly they can accumulate dust, mold, or mildew and spread it into the air. Change the air filters regularly, and be sure your air conditioning system is in good working order at all times.
In addition to moisture in the air, be on the lookout for leaks in your facility. Leaks from the plumbing, roof, windows, doors, and so forth can dramatically increase the indoor humidity and create ideal growing conditions for asthma triggers like mold.

**Slide 17: Cleaning Regularly**

You probably already know how important it is to keep your child care environment clean and sanitary. Many of the triggers we talked about earlier can be eliminated by using the day-to-day cleaning practices you should be using anyway. Thorough, regular cleaning can remove dust, pollen, dust mites, pet hair, and germs from your facility, making it a much healthier place for children with and without asthma.

While your normal cleaning practices are a huge step in the right direction, let’s talk about a few special cleaning considerations to keep in mind to help children with asthma.

First, avoid cleaning when a child with asthma is present. Besides the fact that your attention should be on supervising the children in your care, many cleaning products can trigger an asthma attack and the process of cleaning often stirs up dust and other potential triggers. Use scent-free cleaning products whenever possible. Strong scents, like the ones commonly found in cleaning products, can be a trigger for children with asthma. Even though children shouldn’t be there while you’re cleaning, lingering vapors can trigger some children’s asthma symptoms. Always use cleaning products according to the label instructions. Ventilate the indoor space during and after cleaning. When children return, watch closely to see if anyone reacts to the cleaning products you use.

Next, be aware that carpets, rugs, and drapes can harbor allergens, especially dust mites. Vacuuming helps remove these allergens. You should vacuum at least once a week, if not more. Use a HEPA filter vacuum if you can, or choose a vacuum with a bag designed to trap allergens inside. Vacuum cleaners with poor filtration systems can actually stir up dust and allergens instead of removing them. Even if you use a high-quality vacuum, it’s a good idea to change the bag or canister when it’s half-full. Another option is to replace carpets with washable area rugs, and to replace drapes with washable curtains or blinds. Washable rugs and curtains should be washed at least weekly in hot water.

Also, fabric and upholstery can also serve as habitats for dust mites and other allergens. Wash linens, dress-up clothes, and stuffed toys once a week in hot water – at least 130 degrees Fahrenheit – and dry them in a hot dryer. This helps kill dust mites and germs. Try not to purchase any cloth toys, dress-up clothes, or linens that cannot be washed with high heat. Avoid using furniture with fabric upholstery. Most furniture made especially for child care programs has plastic, wood, or metal surfaces which are easy to clean. Choose furniture made with these materials or leather upholstery whenever possible.

Lastly, pay attention to the nooks and crannies that are easily missed. Dust weekly, using a specially made dusting cloth or a dusting product, rather than a feather duster or dry cloth. Be sure to wipe blinds, window frames, window sills, door frames, ceiling fans, and light fixtures.
Remove clutter and be sure to clean under furniture and materials. Don’t forget to clean surfaces and items inside cabinets and closets, too!

If you have pets in the child care environment, bear in mind that pet dander and hair can be triggers for some children with asthma. Consider keeping pets outdoors or even finding a new home for your pets, if necessary. If you do keep pets in your home or center, keep them in a separate room from any child with asthma, and keep the door closed. Again, soft materials like fabric-covered furniture, carpets, and stuffed toys can trap allergens, including pet dander. Keep pets away from these materials whenever possible. Clean pets’ materials, like bedding or enclosures, at least once a week.

**Slide 18: Controlling Pests**

Keeping pests out of the child care setting is important for all children’s health. Certain pests, particularly cockroaches and rodents, tend to trigger symptoms among people with asthma, so it’s especially crucial to keep them out of your facility if you care for a child with asthma. Children with asthma often react to the pests themselves, and to their droppings.

It is easier to prevent pest problems than to control infestations once they have become established. Pests need water, food, and habitats to flourish. If you can remove any standing water, food sources, and places where the pests can hide, you are on your way to having fewer pests in your facility. To help prevent pests from invading your building, try:

- Wiping up all food crumbs or spilled liquids,
- Storing food in airtight containers,
- Washing dishes right away after meals and snacks,
- Cleaning and disinfecting counters, sinks, and food surfaces, and
- Keeping garbage in cans that have tops that can be sealed.

Cleaning can help prevent pests, but it may not always be enough. If necessary, follow licensing guidelines and use the least toxic method available to remove pests. Children with asthma are more likely to react to pesticides that are sprayed, as opposed to liquids and other pest-removal methods. Let your exterminator know you care for children, and that one or more of them has asthma. Make sure children are not present when pesticides are being applied. After pesticides are used, ventilate the space thoroughly before children return. Again, keep an eye on any children with asthma to see if they react to the products you’ve used.

**Slide 19: Eliminate the Trigger**

The most effective way to protect children with asthma from triggers is to remove them all together. If a child in your care is allergic to pets, consider finding the pet a new home. If you can, remove carpets and drapes, and replace them with hard-surface floors and blinds. Do not allow smoking in and around your program. Cigarette, cigar, and pipe smoke can cause health problems for anyone, and are especially dangerous for people with asthma. The vapor from e-cigarettes is a potential airway irritant as well. Don’t let anyone smoke in your facility, even
when children aren’t there. If a child in your care reacts to strong scents, you might need to avoid perfumes, colognes, and other scented personal care products.

If you can’t remove the source of the trigger, you can often minimize the child’s exposure to the source. This might mean keeping pets outside or in another room, keeping children out of the area when you’re cleaning, and keeping children out of rooms with carpet and fabric upholstered furniture.

In some circumstances, you may be able to ventilate to remove the trigger from the environment. Ventilation is the intentional movement of air from outside a building to the inside environment, usually using an air conditioning system or fan. It can involve using an exhaust fan to remove fumes, odors, and humidity. It can also mean opening doors and windows and letting the space “air out.” Sometimes, though, ventilation introduces triggers like pollen, moisture, smoke, and pollution. If any of these is a problem in your area, ventilation might not help to protect a child with asthma.

If ventilation is impractical or unwise, you may be able to filter the air. Air filtration is the least efficient and least effective method of removing triggers from your child care space, but it can help after you have done as much as possible to remove the source of the irritant. Consider adding air filters to the indoor spaces where children play.

What kind of air filter is right for your program? There are lots of choices. Table-top air filter units are often the least expensive type, but they also have limited airflow and inefficient filters. Most reports have shown them to be relatively ineffective (EPA, 2009).

Room-sized air filters are useful when you need to keep the air in a particular area clean on a continuous basis. These filters can be moved from room to room, as needed. The best air filtration units use either HEPA filters or electrostatic precipitation. Be careful when using electronic air filters. Some of these products produce ozone as they operate. Ozone is not good for anyone to breathe, and is especially hazardous to children with asthma. Avoid air filters that specifically say they generate ozone to clean the air, and read all the product information before choosing an electronic air filter (EPA, 2009). To achieve the best possible results, you should close all the doors and windows of each room as it is being treated (AHAMI).

If you have a central heating or air-conditioning or HVAC system, it probably already filters the air. For these units to be effective, however, you need to run the fan constantly, so airborne contaminants can be captured and carried back to the central filter. Since most people don’t run their air conditioners constantly, it is often more effective to use a portable room-sized air filter, rather than relying on your central air conditioner’s filtration system (EPA, 2009).

**Section 5**

**Slide 20: Conclusion**

Throughout this course, we have talked about what asthma is, what happens in the body during an asthma attack, what kinds of things can trigger an asthma attack, and how you can minimize
children’s exposure to potential triggers in your child care facility. Here are some key points we’d like you to take with you and use in your work with children:

- Asthma is very common. If you haven’t already cared for a child with asthma, it’s likely you will if you stay in the child care field,
- People with asthma have inflammation in the airways in their lungs. During an asthma attack, the airways swell, the muscles around them tighten, and the lungs secrete mucus. All of this combines to make it hard for the person to breathe,
- Asthma attacks happen when the body overreacts to something in the environment. The substance that causes the attack is called a “trigger.” Different people with asthma react to different triggers. Common asthma triggers include exercise, emotions, infections, weather, irritants, and allergens,
- While you probably can’t eliminate all potential triggers from your child care environment, you can take steps to limit children’s exposure to triggers. This involves controlling moisture, cleaning regularly, controlling pests, and eliminating the source of the trigger whenever possible,
- Even if you follow all the recommendations in this course, a child with asthma may still have an asthma attack while in your care. However, getting rid of triggers as much as you can will help children with asthma have fewer attacks, and they’ll probably be less frequent and less severe if they happen.

Thank you for taking the time to complete this course, and for your dedication to keeping the children in your care safe and healthy!