



ASTHMA FACTS

INFORMATION FOR CHILD CARE PROVIDERS

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Module 6 – Participant Independent Exercise #3 – Asthma Handout

Take a long, deep breath - right now. Inhale slowly, until your lungs can't hold anymore... now let the air out gradually...ahhh. Breathing feels so natural that it's easy to take for granted, isn't it? Normally, the air you breathe travels effortlessly through your nose and mouth, down the trachea (also called the "windpipe"), through the bronchial tubes into the lungs, and finally to tiny clusters of air sacs, called alveoli. Here, oxygen is exchanged for carbon dioxide in your blood.

Now try something different: run in place for three minutes. Then place a straw in your mouth, close your lips around it, and try to breathe in and out **only through the straw**. Not so easy anymore, is it? Now, narrow the straw by pinching it in the middle. Even more difficult to breathe? That's what it feels like when a child tries to breathe during an **asthma flare** (commonly called an "attack"). During a flare, the airways narrow and become obstructed, making it difficult for air to move through them. Asthma can be very scary (and when not controlled, it can be life-threatening).

Over 15 million people have asthma in the U.S. Did you know it's the number-one reason for kids chronically missing school? And asthma flares are the most common reason for pediatric emergency room visits due to a chronic illness. Some kids have only mild, occasional symptoms or only show symptoms after exercising. Others have severe asthma that, left untreated, can dramatically limit how active they are and cause changes in lung function.

But thanks to new medications and treatment strategies, a child with asthma no longer needs to sit on the sidelines, and parents no longer need to worry incessantly about their child's well-being. With patient education and the right asthma management plan, today's families can learn to control symptoms and flares more independently, allowing kids and parents to do just about anything they want.

Causes and Descriptions of Asthma Flares

Asthma is a chronic inflammatory lung disease that causes airways to tighten and narrow. Anyone can have asthma, including infants and adolescents. The tendency to develop asthma is often inherited.

Many children with asthma can breathe normally for weeks or months between flares. When flares do occur, they often seem to happen without warning. Actually, a flare usually develops over time, involving a complicated process of increasing **airway obstruction**.

All children with asthma have airways that are overly sensitive, or **hyperreactive**, to certain asthma triggers. Things that trigger asthma flares differ from person-to-person. Some common triggers are exercise, allergies, viral infections, and smoke. The sensitive airway linings react to trigger exposure by becoming inflamed, swollen, and filled with mucus. The muscles lining the swollen airways tighten and constrict, making them even more narrowed and obstructed.

So an asthma flare is caused by three important changes in the airways:

- **inflammation** of the airways
- **excess mucus** that results in congestion and mucus "plugs" that get caught in the narrowed airways
- **bronchoconstriction**: bands of smooth muscle lining the airways tighten up

Together, the inflammation, excess mucus, and bronchoconstriction narrow the airways and make it difficult to move air through, (like breathing through a straw). During an asthma flare, kids may experience coughing, wheezing (a breezy whistling sound in the chest when breathing), chest tightness, increased heart rate, perspiration, and shortness of breath.

How Is Asthma Diagnosed?

Diagnosing asthma can be tricky and time-consuming because different children with asthma can have very different patterns of symptoms. For example, some kids cough constantly at night but seem fine during the day, while others seem to get frequent chest colds that don't go away. It's not uncommon for kids to have symptoms like these for months before being seen by a doctor.



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When considering a diagnosis of asthma, a doctor rules out every other possible cause of a child’s symptoms. He or she asks questions about the family’s asthma and allergy history, performs a physical exam, and possibly orders laboratory tests such as chest x-rays, blood tests, and allergy skin tests. During this process, parents must provide the doctor with as many details as possible, no matter how unrelated they might seem, about things such as:

- **symptoms:** how severe they are, when and where they occur, how frequently they occur, how long they last, and how they go away
- **allergies:** the child’s and the family’s allergy history
- **illnesses:** how often the child gets colds, how severe they are, and how long they last
- **triggers:** exposures to irritants and allergens, recent life changes or stressful events, or other things that seem to lead to a flare

This information helps the doctor understand a child’s pattern of symptoms, which can then be compared to the characteristics of different categories of asthma.

An asthma specialist, such as a pulmonologist or allergist, can perform breathing tests using a spirometer, a machine that does a detailed analysis of a child’s airflow through both large and small airways. A spirometer can also be used to see if the child’s breathing problems can be reversed with medication, a primary characteristic of asthma. The doctor may take a spirometer reading, give the child an inhaled medication that opens the airways, and then take another reading to see if breathing improves with medication. If medication reverses airway narrowing significantly, as indicated by improved airflow, then there’s a strong possibility that the child has asthma.

Sometimes additional specialized tests are performed, such as allergy skin testing, complete pulmonary function studies, or exercise challenge (when the doctor induces an asthma flare and then measures changes in breathing). These tests can help verify that a child has asthma, and not a condition that just seems like asthma.

Once the child is diagnosed, the family can start learning how to control asthma—so it no longer controls the family. At home, a **peak flow meter**—a hand-held tool that measures breathing ability—can be used. When peak flow readings drop, it’s a sign of increasing airway inflammation.

More Information

Exercise-induced asthma

Kids who have exercise-induced asthma (EIA) develop asthma symptoms after vigorous activity, such as running, swimming, or biking. Some kids with EIA develop symptoms only after physical exertion, while others have additional asthma triggers. With the proper medications, most kids with EIA can play sports like any other child. In fact, over 10% of Olympic athletes have exercise-induced asthma they’ve learned to control.

Usually, a doctor can diagnose EIA after taking a history alone. But sometimes further tests, including an exercise challenge in a pulmonary function laboratory, are needed to confirm the diagnosis. The doctor may want to target a child’s tolerance for a particular exercise, as not every type or intensity of exercise affects kids with EIA the same way.

If exercise is a child’s only asthma trigger, the doctor may prescribe a medication that the child takes before exercising to prevent airways from tightening up. Of course, even after premedicating, asthma flares can still occur. Parents (or older children) must carry the proper “rescue” medication to all games and activities, and the child’s school nurse, coaches, scout leaders, and teachers must be informed of the child’s asthma, especially so the child will be able to take the medication at school as needed.



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Allergy-triggered asthma

Not every child with asthma has allergy-triggered asthma, but an estimated 75-85% of people with asthma have some type of allergy. Even if a child’s primary triggers are colds and flu (the most common triggers for children) or exercise, allergies can sometimes play a minor role in aggravating the condition.

How do allergies cause flares in children with asthma? Children inherit the tendency to have allergies from their parents, who pass along the genetic material to make greater than normal amounts of the “allergic antibody,” immunoglobulin E (IgE). The IgE antibody recognizes small quantities of allergens such as dust mites and molds and is responsible for generating allergic reactions to these usually harmless particles. (IgE may also have a role in fighting off parasitic infections.)

The IgE antibodies sit on the surfaces of mast cells, which are found in connective tissue throughout the body. When allergens enter the body, they attach to the IgE antibody, which triggers the mast cells to release histamine, a naturally occurring chemical, to defend against the allergen “invader.” The released **histamine** is what causes the familiar sneezing, runny nose, and watery eyes associated with some allergies—ways the body attempts to rid itself of the invading allergen. In a child with asthma, histamine can also trigger asthma symptoms and flares.

An allergist can usually identify any allergies a child may have. Once identified, the best treatment is to avoid exposure to allergens whenever possible. Environmental control measures for the home can help reduce a child’s exposure to allergens. When avoidance isn’t possible, antihistamine medications may be prescribed to block the release of histamine in the body. Nasal steroids may be given to block allergic inflammation in the nose. In some cases, an allergist can prescribe immunotherapy, a series of allergy shots that gradually make the body unresponsive to specific allergens.



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Categories of asthma

A child’s symptoms can be categorized into one of four main categories of asthma, each with different characteristics and requiring different treatment approaches.

Mild intermittent asthma

A child who has brief episodes of wheezing, coughing, or shortness of breath occurring no more than twice a week is said to have mild intermittent asthma. The child rarely has symptoms between episodes, with the exception of one or two instances per month of mild symptoms at night. Mild asthma should never be ignored; even between flares, airway inflammation exists. The doctor will design an asthma management plan to treat mild symptoms.

Mild persistent asthma

Children with episodes of wheezing, coughing, or shortness of breath that occur more than twice a week but less than once a day are said to have mild persistent asthma. Symptoms usually occur at least twice a month at night and may affect normal physical activity.

Moderate persistent asthma

Children with moderate persistent asthma have daily symptoms and require daily medication. Nighttime symptoms occur more than once a week. Episodes of wheezing, coughing, or shortness of breath occur more than twice a week and may last for several days. These symptoms affect normal physical activity.

Severe persistent asthma

Children with severe persistent asthma have symptoms continuously. They tend to have frequent episodes of wheezing, coughing, or shortness of breath that may require emergency treatment and even hospitalization. Many children with severe persistent asthma have frequent symptoms at night and can handle only limited physical activity.

Every child needs to follow a custom asthma management plan to control his symptoms. The severity of a child’s asthma can both worsen and improve over time, placing him in a new asthma category that requires different treatment.

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http://www.kidshealth.org/parent/medical/lungs/asthma_basics.html



Environmental Control Measures

A family needs to take the environmental control measures that reduce exposure to a child's allergy triggers. Some require little changes in the home, while others can be costly or fairly time-consuming. Talk with the doctor about starting with environmental control measures that will limit those allergens and irritants causing immediate problems for a child. But know that allergies develop over time with continued exposure to allergens - dust mites may not be a trigger for a child now, but with continued uncontrolled exposure, they can become one. The doctor may suggest taking proactive steps now so your child doesn't develop new allergies.

The following are suggested environmental control measures for different allergens and irritants:

Indoor controls

To control dust mites:

- Use only polyester-fill pillows and comforters (never feather or down). Encase pillows and mattresses in mite-proof covers (available at allergy-supply stores). Keep covers clean by vacuuming or wiping them down once a week.
- Wash sheets and blankets a child sleeps on once a week in very hot water (130 degrees Fahrenheit or higher) to kill dust mites.
- Avoid upholstered furniture, window mini-blinds, and carpeting in a child's bedroom and playroom. They can collect dust and harbor dust mites (especially carpets).
- Use washable throw rugs on vinyl or hardwood floors, and wash rugs in hot water weekly.
- Use washable curtains and vinyl window shades that can be wiped down. Wash curtains in hot water weekly.
- Dust and vacuum weekly. If possible, use a vacuum specially designed to collect and trap dust mites.
- Reduce the number of dust-collecting houseplants, books, knickknacks, and non-washable stuffed animals in your home.
- Avoid humidifiers when possible because moist air promotes dust mite infestation.

To control pollens and molds:

- Avoid humidifiers, because humidity promotes mold growth. If you must use a humidifier, keep it very clean to prevent mold from growing in the machine.
- Ventilate bathrooms, basements, and other dark, moist places that commonly grow mold. Consider keeping a light on in closets and using a dehumidifier in basements to remove air moisture.
- Use air conditioning: it removes excess air moisture, filters out pollens from the outside, and provides air circulation throughout your home. Filters should be changed once a month.
- Avoid wallpaper and carpets in bathrooms, as mold can grow under them.
- Use bleach to kill mold in bathrooms.
- Keep windows and doors shut during pollen season.



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To control irritants:

- Do not smoke (or allow others to smoke) at home - even when a child is not present.
- Do not burn wood fires in fireplaces or wood stoves.
- Avoid strong odors from paint, perfume, hair spray, disinfectants, chemical cleaners, air fresheners, and glues.

To control animal dander:

- If a child is allergic to a pet, talk seriously with the doctor about the need to find a new home for the animal.
- It may (but not always) help to wash the animal at least once a week to remove excess dander and collected pollens.
- Never allow the pet into the allergic child's bedroom. Consider keeping the pet outside at all times.
- If you don't already own a pet and a child has asthma, don't acquire one. Even if a child isn't allergic to the animal now, he can become allergic with continued exposure.

Outdoor Controls

- When mold or pollen counts are high, premedicate the child as directed by his doctor. After playing outdoors, the child should bathe and change clothes.
- Drive with the car windows shut and air conditioning on during mold and pollen seasons.
- Don't let a child with asthma mow the grass or rake leaves.

In some cases, the doctor may recommend immunotherapy when control measures and medications are not effective. Speak with your child's doctor about these options.

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http://www.kidshealth.org/parent/general/body/enviro_n_control.html



Furnace Filters—Tips about Your Furnace Filter

Have you ever noticed that no matter how much you clean, you can still see particles floating in a beam of sunlight coming in through a window?

This isn't just dust! It's made up of pollen, plant and mold spores, pet dander, lint, bacteria and other contaminants. Regular daily activities within the home such as dusting, vacuuming, cooking and smoking can increase particulate concentrations. These particles, measured in microns, range in size from fairly large to microscopic. To better understand the size of a micron, note that a human hair is about 70 microns in diameter. The tiniest particles make up 99% of debris in the air circulating within your home. These can bypass the respiratory system's defense mechanisms—such as the nose, sinuses and windpipe—that are designed to filter out particles 3-5 microns in size and keep them from becoming lodged in our lungs.

Health effects from breathing these particles can range from irritation of the eyes and/or respiratory tissues to more serious effects, such as decreased lung function and cancer. They can also cause allergic reactions and infectious diseases. One way to help lower the particle count in your home is to use better air filters and change them regularly. Follow manufacturers' instructions on the filter to see how often the filter needs to be replaced or cleaned.

Filters are either disposable or reusable and are made from materials such as fiberglass, metal, man-made or natural fibers. Factors that affect filter efficiency include fiber size, fiber density, airflow rate, and particle diameter.

Types of filters

- 1. Panel filters**, usually 1" fiberglass filters, are the typical furnace filters installed in the ductwork of most home heating and/or air-conditioning systems. These filters do little to remove contaminants from the air. The primary function of these filters is to protect the fan and minimize the amount of dust on the heating and cooling coil. They also can capture large particles from the air. This basic filtering system may be upgraded by using a high-efficiency filter to trap additional pollutants or by adding additional air-cleaning devices.
- 2. Washable/Reusable filters** are designed to be washed and reused. They never get completely clean and can therefore become restrictive to air flow. These filters are ineffective at capturing small particles.
- 3. Pleated filters** are basically panel filters that have been pleated or folded to provide more surface area. These filters are typically more efficient than a panel filter. By increasing the surface area for collecting particles, however, the flow velocity through the filter is reduced, which decreases the pressure drop across the filter. It is important to change the filter on a regular basis so as not to restrict airflow.
- 4. High Efficiency Pleated filters** have an electrostatic charge that is designed to capture small particles and allergens such as dust, pollen, mold, pet dander and smoke. These particles are the particles that make up 99% of your air, can aggravate allergies and asthma, and which contribute toward dust in your air and on your furniture. It is important to change them on a regular basis.
- 5. High Efficiency Particulate Air (HEPA) filters** are extended filters that remove sub-micron particles with high efficiency. HEPA filters consist of a core filter that is folded back and forth over corrugated separators that add strength to the core and form the air passages between the pleats. The filter is composed of very fine sub-micron glass fibers in a matrix of larger fibers. These types of filters are not designed to fit most standard furnaces. They generally need a separate system consisting of a fan and filter.
- 6. Electronic air cleaners** use an electrical field to trap charged particles. Like mechanical filters, they can be installed in central heating and/or cooling system ducts. Electronic air cleaners include electrostatic precipitators; ion generators are sometimes classified as an electronic air cleaner. These devices may produce ozone, a lung irritant, as a by-product of use.



Mold Control

Tips for Identifying and Eliminating Household Mold

While it’s often associated with leftover foods, mold can be found in a variety of locations within your home and it can do more than make your stomach churn. Molds are simple, microscopic organisms that grow virtually everywhere—from the surface of foods to household plants and household materials like plywood, drywall or fabric.

When present in large quantities, mold can cause health problems, including allergic reactions, toxic reactions, asthma episodes, infections and respiratory damage. In addition, homeowners can incur large bills for structural damage caused by water or water vapor trapped behind the walls. This is a prime location for mold to grow. That’s why it’s important to identify potential areas or situations where mold can grow. When damage has occurred, take steps to clean and dry the area and remedy the source of the problem. For mold to grow it needs nutrients and moisture.

Prevent Mold Growth

- Clean, disinfect, and dry surfaces.
- Check for leaks; if leak is found, repair and clean any moisture damage caused by the leak.
- Reduce moisture in the home by using source point ventilation for moisture producing areas, and low speed continuous ventilation for good overall moisture control.
- Keep relative humidity in homes to between 40 - 50% year round.
- Increase air flow in home by moving furniture away from walls and opening closet doors.

Identify Mold Growth

Identifying mold growth is fairly easy. Look for the following:

- Visible mold growth (discoloration ranging from white to orange and from green to brown or black)
- Musty odor
- Discoloration of building materials in areas where previous water damage occurred, such as drywall and plaster or plywood
- Rotting material



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Remedy the Situation

Once you have identified mold growth in your home, follow these steps to remedy the situation:

- Identify and correct the moisture source (e.g. leaky roof or window).
- Clean, disinfect and dry the wet area. (Should be cleaned quickly; mold will grow with 24 to 48 hours).
- Wash the area with soap and water before disinfecting.
- To disinfect, use a solution of 10% household bleach (e.g. 1 cup bleach per 5 gallons of water) and a little detergent. (The detergent will help with the dirt and oil on the surface and act as a surfactant to help thoroughly wet all surfaces)
- Let cleaned areas dry overnight.
- Remove any materials affected by the mold.
- Remove porous materials that have been damaged by mold, such as sheetrock, carpeting and plywood.
- Bag and discard the materials at the work area rather than possibly spreading contaminants throughout the home.
- Provide continuous and controlled ventilation in work area, with the area of contamination kept at a negative pressure in relationship to the rest of the home (in other words, air should flow from clean to dirty areas.)

It is a good precaution to always wear gloves and high quality respiratory protection, when cleaning areas affected by mold growth and when removing damaged materials.

Maintain a Vigilance

Once you've removed the mold growth and fixed the source of the problem, make sure you and your home don't sustain further damage by checking for the following symptoms regularly:

- Condensation on windows
- Cracking or staining of plasterboard
- Drywall tape loosening
- Wood warping
- Musty odor

For Further Information

Environmental Protection Agency (EPA):

www.epa.gov/iaq

The Virginia State Department of Health:

<http://www.vdh.virginia.gov>

Centers for Disease Control and Prevention (CDC):

http://www.cdc.gov/mold/dampness_facts.htm

California Indoor Air Quality Program:

www.cal-iaq.org/iaqsheets.htm

Or visit your county health department:

<http://www.vdh.virginia.gov/HometownHealth.asp>

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Healthy Cleaning Alternatives—Safe, Effective Household Products

What if you were potentially doing more harm than good when you clean your house? You may not know it, but some of the household cleaning products we rely on to remove dust, dirt, bacteria, germs and odors may leave behind harmful chemicals that can pollute the air and cause potential health problems for you, your family, and pets. Some of these products are actually pesticides regulated under the Environmental Protection Agency (EPA). They range from cleaning products to pet shampoos. To see if the product you are using is a pesticide check the label for an EPA number. This indicates that the product is classified as a pesticide.

Prolonged exposure to certain chemicals in these products has been linked to dizziness, nausea, allergic reactions, eye, skin and respiratory tract irritation, and in some cases, cancer.

While the potential health risks are minimized if exposure to such chemicals is limited to low levels and short periods of time, you should exercise caution and follow all manufacturer's written instructions when using the following products:

- Aerosol spray products—including health, beauty and cleaning products
- Chlorine bleach
- Rug and upholstery cleaners
- Indoor air foggers (for the removal of pests)
- Insect/rodent repellent

Alternative Recipes

Fortunately, many common products offer safe and effective cleaning solutions to the following problems:

Grease cutter—1 cup of lemon juice + 1 cup of water

Scouring powder— 1 cup of baking soda + enough water to form a paste

Laundry stain remover—1 tsp. of white vinegar or baking soda per machine load

Toilet bowl cleaner—cup vinegar (leave overnight and brush the next day)

Floor and furniture polish—2 parts vegetable oil + 1 part lemon juice (for leather furniture: 1 cup vinegar + 1 cup linseed oil)

Metal cleaners (brass and copper)—lemon juice + salt to form a paste OR a lemon wedge dipped in baking soda OR hot white vinegar + salt OR hot ketchup applied with a rag

Glass cleaner—1 part vinegar + 1 part water

Rug and carpet cleaner—baking soda

Flies—well-watered bowl of basil

Moth repellent—Cedar chips in cotton sachets

Roach repellent—Chopped bay leaves and cucumber skins

Chemical Product Guidelines

If you must use chemical products, here are some guidelines that will help minimize potential health risks:

- Identify, and avoid using toxic chemicals, if possible.
- Never use around children, pets, or food.
- Buy only amount needed for application; do not buy chemicals in bulk, and if you must, carefully store any unused quantities.
- Follow guidelines for proper disposal of chemicals.
- Always follow the manufacturer's directions for use and disposal.
- Wear appropriate clothing while applying and make sure to wash both the clothing and yourself after each application.
- Use only the recommended amount of the product and minimize the amount of time you're exposed to it.



Environmental Tobacco Smoke: A Danger to Children

American Academy of Pediatrics

Smoking is the leading cause of preventable death in the United States. It causes almost 20% of all the deaths in this country each year. People who are around smokers can't help breathing in the smoke that comes from cigarettes, pipes, or cigars. Researchers have now found that breathing in someone else's smoke is very dangerous, especially for children. The American Academy of Pediatrics offers parents the following information to help them create a "tobacco-free environment" for their children.

What is Environmental Tobacco Smoke (ETS)?

Environmental Tobacco Smoke, or ETS, is the smoke that is breathed out by a smoker. ETS also includes the smoke that comes from the tip of a burning cigarette. Exposure to ETS happens any time someone breathes in the smoke that comes from a cigarette, pipe, or cigar. ETS contains many dangerous chemicals that have been proven to cause cancer. It is estimated that ETS causes 3,000 lung cancer deaths each year to people who don't even smoke!

ETS and children

ETS has almost 4,000 chemicals in it that infants and children breathe in whenever someone smokes around them. Children who breathe in ETS are at risk for many serious health problems.

When a mother smokes during pregnancy, she has a higher risk of having a premature baby or a baby who is not fully developed. When a mother smokes during her pregnancy or around her newborn, the infant has a higher risk of Sudden Infant Death Syndrome (SIDS). Children who breathe in someone else's cigarette smoke (especially children under 2 years of age) have a higher risk of getting other serious medical problems or making them worse, including the following:

- Ear infections and hearing problems
- Upper respiratory infections
- Respiratory problems such as bronchitis and pneumonia
- Asthma

Children of smokers also cough and wheeze more and have a harder time getting over colds. In addition, ETS can cause a stuffy nose, headaches, sore throat, eye irritation, hoarseness, dizziness, nausea, loss of appetite, lack of energy, or fussiness.

Children with asthma are especially sensitive to ETS. ETS can actually increase the number and severity of asthma attacks, which may require trips to the hospital. Also, exposure to the smoke of as few as 10 cigarettes per day raises a child's chances of getting asthma even if that child has never had any symptoms.

In addition, ETS can cause problems for children later in life including:

- Lung cancer
- Heart disease
- Cataracts (eye disease)

With all of these dangers, it's easy to understand why children should not be exposed to ETS. Inhaling the smoke from the cigarettes of others is dangerous for pregnant women, too. Pregnant women should stay away from smoking areas and ask smokers not to smoke around them.



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How parents can protect their children from ETS

If you are a smoker—quit! It's one of the most important things you can do for the health of your children and the best way to prevent your child from being exposed to ETS. If you are having trouble quitting smoking, ask your doctor for help. Also, contact your local chapter of the American Lung Association, American Heart Association, the American Cancer Society, or other groups that sponsor stop-smoking classes. As a parent, you are a role model. Children watch what their parents do. If your child sees you smoking, he or she may want to try smoking and grow up to become a smoker as well. Cigarette smoking by children and adolescents causes the same health problems that affect adults.

Tobacco-free environments for children

Parents need to be aware of the many places where their children can be exposed to ETS. Even if there are no smokers in your home, your children can still be exposed to ETS in other places, including:

- In the car or on a bus
- In a restaurant
- At a friend's or relative's house
- At the mall
- At the babysitter's house
- At sports events or pop music concerts

Smoking and children—A fire hazard

In addition to the dangers of ETS, smoking around children can also pose fire and burn dangers. Children can get burned if they play with lit cigarettes, cigars, or with lighters or matches. Keep the following guidelines in mind to keep your child safe from injury:

- Never smoke while you are holding your baby.
- Never leave a lit cigarette, cigar, or pipe unattended.
- Keep matches and lighters out of your child's reach.

Cigarette lighters are especially dangerous. Cigarette lighters can be found in almost 30 million homes in the United States. Each year children under 5 years old playing with lighters cause more than 5,000 home fires resulting in about 150 deaths and more than 1,000 injuries. The Consumer Product Safety Commission (CPSC) now requires that butane cigarette lighters be made child-resistant. This new rule will prevent hundreds of deaths and fire-related injuries to children each year. But remember, lighters can be made child-resistant, not childproof. It is still very important to keep lighters and matches away from children.



Pesticides and Child Safety

A report by the National Research Council of the National Academy of Sciences report concerning pesticides in the diets of infants and children has generated renewed interest in protecting our children from harmful pesticide residues.

While we need to ensure that pesticide residues on food do not harm our children, an even greater danger exists with the storage and use of pesticides in our homes. While pesticides are useful in managing pest problems, they must be stored and handled properly.

A U.S. Environmental Protection Agency (EPA) report regarding pesticides used in and around the home revealed some significant findings:

- Almost half of all households with children under 5 years of age had at least one pesticide stored in an unlocked cabinet less than 4 feet off the ground (i.e., within the reach of children).
- Approximately 75 percent of households without children under 5 also store pesticides in an unlocked cabinet, less than 4 feet off the ground. This number is significant because 13 percent of all pesticide poisoning incidents involving children occur in homes other than the children's own.
- Bathrooms and kitchens were cited as the areas in the home most likely to have improperly stored pesticides. Examples of common household pesticides stored in these areas include roach sprays, chlorine bleach, kitchen and bath disinfectants (YES, these are considered pesticides), mice/rat poison, insect and wasp sprays, repellents and baits, and flea and tick shampoos and dips for pets. Other household pesticides include swimming pool chemicals and weed killers.

The following are some EPA recommendations for preventing accidental poisoning to children:

- Always store pesticides away from children's reach, in locked cabinets or garden sheds. Child-proof latches, available in hardware stores, may also be installed on cabinets.
- Read the label of the pesticide product first and follow the directions to the letter, including all precautions and restrictions.
- Before applying pesticides (indoors or outdoors), remove children and their toys as well as pets from the area. Keep them away until the pesticide has dried or as long as is recommended by the label.
- If you are interrupted while using a pesticide, be sure to put the container out of reach of children.
- Never transfer pesticides to other containers that children may associate with food or drink.
- Never place rodent or insect baits where small children can get to them.
- Use child-resistant packaging properly by closing the container tightly after use.
- Alert others to the potential hazard of pesticides, especially caregivers and grandparents.
- Teach children that pesticides are poisons, something they should not touch. Place warning stickers (e.g., Mr. Yuk) on pesticide containers.
- Keep the telephone number of your area poison control center near your telephone.

In an emergency, try to determine what the child was exposed to and what part of the body was affected, before you take action. The pesticide product label explains emergency treatments. Give the indicated first aid immediately before contacting the local poison control center, a physician, or 911. If you take your child to an emergency room, take the pesticide container along so that the physician can read the pesticide's ingredients.

REMEMBER: PESTICIDES ARE NOT JUST TOXIC TO PESTS!

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Ten Tips to Protect Children from Pesticide and Lead Poisonings around the Home

These simple steps can help you save children from environmental hazards around the home:

1. Always store pesticides and other household chemicals, including chlorine bleach, out of children's reach -- preferably in a locked cabinet.
2. Always read directions carefully because pesticide products, household cleaning products, and pet products can be "dangerous" or ineffective if too much or too little is used.
3. Before applying pesticides or other household chemicals, remove children and their toys, as well as pets, from the area. Keep children and pets away until the pesticide has dried or as long as is recommended on the label.
4. If your use of a pesticide or other household chemical is interrupted (perhaps by a phone call), properly reclose the container and remove it from children's reach. Always use household products in child-resistant packaging.
5. Never transfer pesticides to other containers that children may associate with food or drink (like soda bottles), and never place rodent or insect baits where small children can get to them.
6. When applying insect repellents to children, read all directions first; do not apply over cuts, wounds or irritated skin; do not apply to eyes, mouth, hands or directly on the face; and use just enough to cover exposed skin or clothing, but do not use under clothing.
7. Wash children's hands, bottles, pacifiers and toys often, and regularly clean floors, window sills, and other surfaces to reduce potential exposure to lead dust.
8. Get your child tested for lead if you suspect he or she has been exposed to lead in either your home or neighborhood.
9. Inquire about lead hazards. When buying or renting a home or apartment built before 1978, the seller or landlord is now required to disclose known lead hazards.
10. If you suspect that lead-based paint has been used in your home or if you plan to remodel or renovate, get your home tested. Do not attempt to remove lead paint yourself. Call 1-(800)-424-LEAD for guidelines.

For more information about pesticides, call the National Pesticide Information Center (NPIC) at 1-800-858-7378. To order publications, call the National Service Center for Environmental Publications at 1-(800) 490-9198 or fax at 1-513-489-8695. Please be sure to note the document title when ordering through NSCEP.

For more information about lead, call the National Lead Information Center at 1-(800) LEADFYI, (in the District of Columbia, call (202) 833-4726). For information about how to get your home or child tested for lead poisoning, call your local/state health department.

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(202) 260-2090 or www.epa.gov www.epa.gov/oppfead1/cb/10_tips/*

Lead-Safe Virginia Program at 1-877-668-7987 or www.vahealth.org/leadsafe



Protecting Children from Pesticides

- The 1996, Food Quality Protection Act, set tougher standards to protect infants and children from pesticide risks. EPA is enforcing these tougher standards, which include an additional safety factor to account for developmental risks and incomplete data when considering a pesticide's effect on infants and children, and any special sensitivity and exposure to pesticide chemicals that infants and children may have.
- EPA has taken action when the Agency has identified risks to children. For example in August 1999, EPA announced cancellation of major "kid's food" uses of the organophosphate (OP) pesticide methyl parathion and significant restrictions on the use of another OP, azinphos methyl. Scientific data indicate that these uses do not provide the extra measure of protection FQPA demands for children.
- EPA is reassessing all OP residue limits. In addition to the OP's, the Agency has targeted several other high-risk pesticides for priority review including atrazine, aldicarb and carbofuran, among others.
- For the first time, EPA is requiring hundreds of additional studies on pesticides to better understand their effects on children specifically (developmental neurotoxicity, acute and subchronic neurotoxicity). In addition, EPA has developed new tests and risk assessment methods to target the factors unique to infants and children.
- EPA has registered many new, safer pesticides in recent years that constitute lower-risk alternatives to more toxic pesticides such as the organophosphates.
- EPA distributed a consumer information brochure to grocery stores nationwide and launched an interactive web site to give consumers vital information about pesticides in food: <http://www.epa.gov/pesticides/food>.
- EPA is undertaking a screening and testing program to address concerns expressed by scientists in recent years that chemicals might be disrupting the endocrine system -- the glands and the hormones they produce that guide the development, growth, reproduction, and behavior of human beings and animals. Disruption of the endocrine system may result in reproductive disorders, birth defects, immune suppression, and other harmful effects.

Kids need Protection

Children are at a greater risk for some pesticides for a number of reasons. Children's internal organs are still developing and maturing and their enzymatic, metabolic, and immune systems may provide less natural protection than those of an adult. There are "critical periods" in human development when exposure to a toxin can permanently alter the way an individual's biological system operates. Children may be exposed more to certain pesticides because often they eat different foods than adults.

For instance, children typically consume larger quantities of milk, applesauce, and orange juice per pound of body weight than do adults. Children's behaviors, such as playing on the floor or on the lawn where pesticides are commonly applied, or putting objects in their mouths, increase their chances of exposure to pesticides.

Adverse effects of pesticide exposure range from mild symptoms of dizziness and nausea to serious, long-term neurological, developmental and reproductive disorders. Americans use more than a billion pounds of pesticides each year to combat pests on farm crops, in homes, places of business, schools, parks, hospitals, and other public places.

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www.epa.gov/pesticides/factsheets/kidpesticide.htm



Module 6 – Participant Independent Exercise #3 – Asthma Handout

Resources

- The American Academy of Pediatrics. *Family Readiness Kit: Preparing to Handle Disasters*. The American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, IL 60007-1098, (847) 434-4000 or www.aap.org.
- American College of Allergy, Asthma and Immunology, 85 West Algonquin Road, Suite 550, Arlington Heights, IL 60005 (847) 427-1200 or www.acaai.org/
- The American Lung Association. *Home Environment: A Guide for Creating a Healthier Home*. The American Lung Association, 1740 Broadway, New York, NY 10019, (212) 315-8700 or www.lungusa.org.
- The Centers for Disease Control (CDC), 1600 Clifton Rd., Atlanta, GA 30333 (800) 311-3435 or www.cdc.gov
- The Children’s Environmental Health Network. *Preventing Child Exposures to Environmental Hazards: Research and Policy Issues Symposium Summary*. 110 Maryland Avenue NE, Suite 511, Washington, DC 20002, (202) 543-4033 or www.cehn.org.
- The United States Consumer Product Safety Commission (CPSC)— U.S. Consumer Product Safety Commission Washington, D.C. 20207-0001. Toll-free consumer hotline: 800-638-2772 (TTY 800-638-8270)
- The Environmental Protection Agency (EPA). *The Inside Story: A Guide to Indoor Air Quality*. Ariel Rios Building, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, (202) 260-2090 or www.epa.gov.
- Federal Emergency Management Agency (FEMA), 500 C Street, SW Washington, D.C. 20472. Phone: (202) 646-4600 or www.fema.gov
- The National American Red Cross, P.O. Box 37243, Washington, DC 20013. www.redcross.org
- The National Heart, Lung and Blood Institute, 31 Center Drive, MSC 2480 Room 4A21, Bethesda, MD 20892-2480, (301) 592-8573 or www.nhlbi.nih.gov.
- The Nemours Foundation KidsHealth website: www.kidshealth.org
- The Virginia Department of Health, Division of Chronic Disease Prevention and Control: www.vahealth.org/cdpc
- The U.S. Consumer Product Safety Commission, Washington, D.C. 20207-0001, (800) 638-2772 or www.cpsc.gov.
- U.S. Department of Housing and Urban Development (HUD). Office of Lead Hazard Control, 451 7th Street, S.W., Room P-3206 Washington, DC 20410 (202) 755-1785
- The National Lead Information Center- 1-800-424-LEAD
- EPA’s Safe Drinking Water Hotline- 1-800-426-4791
- National Radon Hotline- 1-800-SOS-RADON