



Asthma,
air quality and
how to protect
yourself and
your family.





What is asthma?

Asthma is a chronic inflammatory disorder of the airways that causes three primary changes in the lungs:

1. Inflammation (swelling) of the lining of the airways
2. Bronchoconstriction (tightening of the bands of smooth muscles surrounding the airways) which reduces the width of the airways
3. Excess mucus production that further narrows the airways

Asthma is an obstructive disease that may cause permanent changes (remodeling) if not properly treated.

Asthma is a disease that cannot be cured but can be controlled.

Although symptoms may vary for each person with asthma, the primary symptoms of an asthma episode may include:

- ▲ Wheeze
- ▲ Cough
- ▲ Shortness of breath
- ▲ Chest tightness
- ▲ Retractions

What triggers asthma and allergies?

If you have asthma, an asthma attack can happen when you are exposed to “asthma triggers.” Triggers are allergens, irritants or conditions that cause your asthma symptoms to worsen. Being able to identify and avoid specific triggers is important to asthma management.

Some of the most common indoor asthma triggers include environmental tobacco smoke (secondhand smoke), dust mites, mold, cockroaches and other pests, cleaning products and household pets.

- ▲ Household cleaners and air-freshening sprays or devices
- ▲ Fuel-burning heat sources (such as a wood-burning stove)
- ▲ Smoke from cooking, candles, incense, fireplaces or tobacco
- ▲ Toxic fumes that are “off-gassing” from new products (new furniture and new carpet)
- ▲ Attached garages that store cars, motorcycles or lawnmowers (can add carbon monoxide to your air)
- ▲ Building and paint products (paints, adhesives, solvents)
- ▲ Pesticides (such as treatments for cockroaches and fleas)
- ▲ Humidity that allows mold to grow
- ▲ Cosmetics, perfumes and hair sprays

Outdoor air quality can also worsen asthma. Air pollution comes from many different sources – some are man-made and some are naturally occurring. Air pollution can make it harder to breathe. It can also cause other symptoms, like coughing, wheezing, chest discomfort and a burning feeling in the lungs.

Two key air pollutants can affect asthma. One is ozone (found in smog). The other is particle pollution (found in haze, smoke and dust). When ozone and particle pollution are in the air, adults and children with asthma are more likely to have symptoms.

Air pollution includes gases, smoke from fires, volcanic ash and dust particles. These particles in the air like dust, dirt, soot and smoke and called particulate matter and can cause:

- ▲ Increased hospital visits
- ▲ Worsened asthma symptoms
- ▲ Adverse birth outcomes
- ▲ Breathing problems
- ▲ Decreased lung growth in kids
- ▲ Lung cancer
- ▲ Early death

How can I minimize exposures in my home and protect myself from air pollution?

You can take steps to help protect your health from air pollution.

- Get to know how sensitive you are to air pollution.
 - ▲ Notice your asthma symptoms when you are physically active. Do they happen more often when the air is more polluted? If so, you may be sensitive to air pollution.
 - ▲ Also notice any asthma symptoms that begin up to a day after you have been outdoors in polluted air. Air pollution can make you more sensitive to asthma triggers, like mold and dust mites. If you are more sensitive than usual to indoor asthma triggers, it could be due to air pollution outdoors. Know when and where air pollution may be bad.
- Plan activities when and where pollution levels are lower.
 - ▲ Regular exercise is important for staying healthy, especially for people with asthma. By adjusting when and where you exercise, you can lead a healthy lifestyle and help reduce your asthma symptoms when the air is polluted. In the summer, plan your most vigorous activities for the morning. Try to exercise away from busy roads or industrial areas. On hot, smoggy days when ozone levels are high, think about exercising indoors.

- Change your activity level.
 - ▲ When the air is polluted, try to take it easy if you are active outdoors. This will reduce how much pollution you breathe. Even if you can't change your schedule, you might be able to change your activity so it is less intense. For example, go for a walk instead of a jog. Or, spend less time on the activity. For example, jog for 20 minutes instead of 30.
- Listen to your body.
 - ▲ If you get asthma symptoms when the air is polluted, stop your activity. Find another, less intense activity.
- Keep your quick-relief medicine on hand when you're active outdoors. That way, if you do have symptoms, you'll be prepared. This is especially important if you're starting a new activity that is more intense than you are used to.
 - ▲ Consult your health care provider. If you have asthma symptoms when the air is polluted, talk with your health care provider.

If you will be exercising more than usual, discuss this with your health care provider. Ask if you should use medicine before you start outdoor activities.
- Know when and where air pollution may be bad.
 - ▲ Ozone is often worst on hot summer days, especially in the afternoons and early evenings.
 - ▲ Particle pollution can be bad any time of year, even in the winter. It can be especially bad when the weather is calm, allowing air pollution to build up.
 - ▲ Check pollution levels in your zip code before going outside at www.airnow.gov or download the app if you have a smartphone.
- Particle levels can also be high:
 - ▲ Near busy roads, during rush hour and around factories.
 - ▲ When there is smoke in the air from wood stoves, fireplaces or burning vegetation.

You can take steps to improve indoor air quality and minimize common triggers.

- Avoid using toxic chemicals and opt for safer cleaner products. Utilize green cleaning methods like vinegar, baking soda and fragrant free products.
- Avoid air fresheners, paraffin candles and spray or plug-in products that can emit hazardous air.
- Use proper ventilation when cooking, cleaning, painting and when doing other household maintenance.
- Check for mold in high moisture areas like basements and bathrooms and be sure to check for leaks around plumbing fixtures and windows. Keep humidity in your house below 50% and use exhaust fans when available. Clean visible mold with a stiff brush, hot water and non-ammonia soap.
- Keep your pet out of your child's bedroom and keep doors closed. Keep pets off of furniture. Bathe your pet weekly to reduce the amount of dander.
- Vacuum with a high efficiency particulate accumulator (HEPA) filter and wet dust weekly.
- Use integrated pest management strategies to deal with pests and avoid pesticides/chemicals when possible. Do not leave food or garbage exposed and store garbage in outside trash container.
- Encase pillows, mattresses and box springs in an allergen impermeable cover and wash bedding in hot water weekly.
- Be aware of daily pollen counts in your area and limit time outside during high pollen seasons.
- Do not smoke in your home or around the person with asthma. If caregivers must smoke, wear a smoking jacket and smoke outside and leave the jacket outside.

Asthma Resources

Pennsylvania Asthma Partnership: Education and Prescription Assistance

Mission: To dedicate expertise and resources to develop and implement a sustainable statewide asthma action plan. The plan shall expand and improve the quality of asthma care and management, education and awareness, prevention and surveillance and seeks to eliminate the disproportionate burden that asthma places on racial and ethnic minorities and **low income** Pennsylvania residents.

Breathe Pennsylvania

Breathe Pennsylvania, headquartered in Cranberry Township, Pa., is a non-profit organization that helps the residents of southwestern Pennsylvania achieve and maintain optimal lung health through education, prevention, awareness and direct services.

American Lung Association: Education, Advocacy, and Research

The American Lung Association is the leading organization working to save lives by improving lung health and preventing lung disease, through research, education and advocacy. Our work is focused on five strategic imperatives: to defeat lung cancer; to improve the air we breathe; to reduce the burden of lung disease on individuals and their families; to eliminate tobacco use and tobacco-related diseases; and to accelerate fundraising and enhance organizational effectiveness to support the urgency of our mission.

NIH: Explore Asthma

NHLBI's Health Topics Web site. The NHLBI developed this site for patients, caregivers, and the public. Health Topics provides science-based, plain-language information related to heart, lung, blood, and sleep disorders. The site contains articles on diseases, conditions, tests, procedures, and other relevant topics, which you can e-mail, print, and share. New topics will be added regularly.

American Academy of Allergy Asthma & Immunology

The American Academy of Allergy, Asthma & Immunology (AAAAI) is a professional organization with over 7,000 members in the United States, Canada and 72 other countries. This membership includes allergist / immunologists, other medical specialists, allied health and related healthcare professionals—all with a special interest in the research and treatment of allergic and immunologic diseases. The American Academy of Allergy, Asthma & Immunology is dedicated to the advancement of the knowledge and practice of allergy, asthma and immunology for optimal patient care.

Severe Asthma Toolkit

The Center of Excellence in Severe Asthma has developed the Severe Asthma Toolkit to address an identified gap in the availability of severe asthma education resources for clinicians. This website provides tools to help clinicians provide optimal care for people with severe asthma, and is targeted at clinicians in primary and specialist care, in both private and public clinic settings.

American College of Allergy, Asthma & Immunology

The American College of Allergy, Asthma and Immunology promotes excellence in the practice of the sub specialty of allergy and immunology. The College fosters a culture of collaboration and congeniality in which its members work together and with others toward the common goals of patient care, education, advocacy and research.

American Thoracic Society: Patient Resources

The American Thoracic Society (ATS) offers a wealth of information for patients, families, health care providers and others with an interest in lung disease and lung health. Here you will find information on topics ranging from asthma and COPD to critical illnesses like Acute Respiratory Distress Syndrome (ARDS) and rare lung diseases such as Hermansky Pudlak Syndrome (HPS), and other adult and pediatric respiratory diseases and disorders.

PITT Respiratory Reader

UPMC Physician Resources provides physicians with clinical and research news, videos, and free online continuing medical education (CME) across a wide range of adult and pediatric subspecialties. Experts from UPMC and our partners present on the latest clinical advances, bench-to-bedside research, and best practices in care delivery.

Women for a Healthy Environment

The Healthy Homes program provides relevant, reliable, science-based information to empower families to make changes in their home to create a healthier environment and become advocates for policies and regulations to protect everyone from environmental health hazards in the home.

PA Integrated Pest Management

IPM is a stepwise approach to pest management that combines accurate knowledge of the pest and level of potential harm with multiple tactics to prevent, reduce or eliminate pests

ROCIS

ROCIS (Reducing Outdoor Contaminants in Indoor Spaces) is a Southwestern PA initiative designed to engage and empower people to reduce their exposure to pollutants where they live, work, and learn. The Low Cost Monitoring Project provides equipment at no cost for a month so that participants can monitor and learn how to improve their indoor air quality. The ROCIS team conducts long-term monitoring of interventions designed to reduce indoor particle pollution.

*Find more resources for a healthy home at:
WomenForAHealthyEnvironment.org*

About Us

Women for a Healthy Environment (WHE) is a non-profit focused on how the built environment impacts public health. WHE educates individuals about environmental risks, provides action steps communities and individuals can take to mitigate those risks, and advocates for solutions that better protect the health of communities across southwestern PA. Through the Healthy Homes program, WHE provides tools and resources to create healthy spaces for families to live, learn, grow, and play.

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