

PATIENT GUIDE

UNDERSTANDING YOUR ASTHMA

Living with severe asthma can make even the simplest tasks difficult. Going to work, caring for the kids and even taking a walk can be a struggle. That's why it's so important to understand what triggers your asthma and do your best to minimize exposure to these triggers.

Types of Asthma Triggers



Allergens: You might experience allergy-induced asthma, in which inhaling something you're allergic to causes symptoms. Common allergy-induced asthma triggers include dust mites, molds, pet dander and pollen. Staying away from these triggers isn't always practical, but there are steps you can take to help prevent asthma attacks. For example, you can use allergen-proof covers for your pillows and mattress to create a dust mite barrier. To prevent indoor mold, you can try lowering your home's humidity using an air conditioner or dehumidifier.



Exercise: Some people experience asthma symptoms during or after exercise. The odds of experiencing symptoms may increase with other conditions such as the weather or air pollution. Your healthcare provider may recommend using a quick-relief medicine, such as albuterol, before exercising.



Irritants: Nonallergen particles or gases in the air can trigger an asthma attack. Examples include smoke from cigarettes, charcoal grills and wood fires; smog; gasoline fumes; and cleaning products. When possible, move away from these triggers. In other cases, improve ventilation by opening windows and turning on fans.



"I always felt so tired. The coughing was the worst. I couldn't sleep. When I saw Dr. Duffy, everything changed and became just amazing."



Strong emotions: When you change how you breathe because of strong emotions, it can trigger wheezing or other asthma symptoms.

You might notice this when you experience anger, crying, excitement or fear. If you feel stress is part of what triggers you, practice mindful breathing exercises to calm down and lower your stress levels.



Weather: When the air is cold or dry, or when there are sudden changes in the weather, you may have trouble breathing. That's because dry air can make your airways irritated and swollen, and cold air can make your body produce extra thick mucus. If you have to go outside when it's cold and dry, try to cover your nose and mouth with a scarf or mask to help warm the air.

OTHER HEALTH CONDITIONS CAN ALSO AGGRAVATE ASTHMA SYMPTOMS. THESE INCLUDE:

- **Acid reflux/gastroesophageal reflux disease (GERD):** GERD — a chronic, more severe form of acid reflux — can cause coughing, which can in turn trigger asthma symptoms.
- **Chronic obstructive pulmonary disease (COPD):** While COPD and asthma are different conditions, some people may experience asthma-COPD overlap syndrome (ACOS), in which they have symptoms of both conditions.
- **Obesity:** Obesity is associated with asthma development and worse symptoms.
- **Obstructive sleep apnea:** Sleep apnea can weaken and irritate the airways, making asthma symptoms worse.
- **Pregnancy:** Asthma can worsen during pregnancy. And pregnant women with severe asthma have a higher risk for birth complications.
- **Respiratory infections:** Infections such as the flu, the common cold, pneumonia and COVID-19 can all worsen asthma symptoms. You should take extra precautions to avoid contracting a respiratory infection.

ASTHMA MANAGEMENT

Asthma can't be cured, but it can be controlled. To help lessen and prevent asthma symptoms, it's important to take your asthma medication exactly as prescribed. You should also have your asthma prescription filled at all times, so you never run out.

Types of Asthma Medications

Whether you've recently been diagnosed with asthma or have struggled to manage it for years, it helps to know about common asthma medications.



CONTROLLER (LONG-LASTING) MEDICINE

These drugs help control asthma symptoms. They must be used daily to work well.

- **Corticosteroid:** When inhaled, a corticosteroid helps decrease airway inflammation and prevent asthma flare-ups. If prescribed, inhaled steroids should be used every day as a controller medicine, even if you don't have symptoms. Oral or intravenous administration may be required for severe asthma attacks.



Examples: Budesonide (Pulmicort), fluticasone (Flovent), mometasone (Asmanex)

- **Long-acting beta-agonist (LABA):** This medicine can also help decrease airway inflammation. If prescribed, it should be taken on a regular schedule to control symptoms. It should be used in combination with a corticosteroid.
- **Combination inhaler:** This combines a long-acting beta agonist with a corticosteroid to help manage asthma symptoms.



Examples: Budesonide/formoterol (Symbicort), fluticasone/salmeterol (Advair), mometasone/formoterol (Dulera)

- **Leukotriene modifier:** Leukotrienes are chemicals from your immune system that cause asthma symptoms. This medicine blocks their effects.



Examples: Montelukast (Singulair), zafirlukast (Accolate), zileuton (Zyflo)



RESCUE (SHORT-ACTING) MEDICINE

These fast-acting drugs provide short-term relief of symptoms. They should be used just before or during an asthma attack.

- **Short-acting beta-agonist (SABA):** This medicine temporarily relaxes the airways, making it easier to breathe for several hours.



Examples: Albuterol (Proventil, ProAir), levalbuterol (Xopenex)

- **Anticholinergic:** This inhaled medicine can be used alongside or after use of a SABA to help relieve symptoms for a longer period of time.



Examples: Ipratropium (Atrovent), ipratropium/albuterol (Combivent, DuoNeb)

USING AN INHALER EFFECTIVELY

Studies have found that around 87% of people using metered-dose inhalers make at least one mistake during use. That's a major problem, since a single mistake can make a large difference in the effectiveness of your asthma medication. So, even if you've used an inhaler for many years, it's always a good idea to brush up on proper inhaler use.

- 1 Prime the inhaler if it's been a while since using it.** Your inhaler's instructions should say when and how to do this.
- 2 Take off the cap and make sure there's nothing in the mouthpiece.** You don't want to inhale dirt or dust.
- 3 Shake the inhaler hard 10 to 15 times.** This helps mix together the medicine that helps you breathe and the propellant that gets the medicine into your lungs.
- 4 If you're using a spacer or holding chamber, attach it now.** These attachments help more medicine reach your lungs. Without one of these devices, your inhaler medicine may accidentally hit your mouth or throat.
- 5 Take a deep breath in and out.** Release as much air as you can so your lungs can take in the medicine.
- 6 While keeping your chin up, put the mouthpiece in your mouth.** Be sure it's above your tongue and between your teeth.
- 7 Breathe in slowly and press down on the inhaler.** Continue breathing in.
- 8 Remove the mouthpiece and hold your breath for 5 to 10 seconds.**
- 9 Breathe out slowly.**

If your medication is a corticosteroid, rinse your mouth with water to help prevent side effects. And if your prescription says to take more than one spray, wait 1 minute before repeating the process.



Watch a video on inhaler use from the American Lung Association

SCAN ME



SUPPLEMENTAL TECHNIQUES TO HELP MANAGE ASTHMA

Medicine isn't the only way you can manage your asthma symptoms. Other techniques you can use in addition to medicine include:

- **Breathing:** Breathing through your nose may improve your asthma symptoms by adding warmth and humidity to the air. Another technique to try is diaphragmatic breathing, which involves breathing from your diaphragm instead of your chest. Sit straight up and place one hand on your upper chest and one on your stomach. Breathe in slowly through your nose. Be sure only the hand on your stomach moves. Breathe out slowly through pursed lips.
- **Exercises:** Swimming can be a great way to stay active if you have asthma because of the warm, wet air. Walking and biking are also great options because of how gentle they are on the body.
- **Stress management:** Meditation and yoga can help you calm down and control your breathing. Getting a full seven to nine hours of sleep each night can also reduce your stress levels.



ADVANCED TREATMENT

If you have asthma, then you need an asthma action plan. This custom plan can help you prevent and control asthma attacks, making it easier to live life without asthma being an obstacle.

Creating an Asthma Action Plan

An asthma action plan should be created with help of your doctor. It's intended to help prevent flare-ups and give you directions on what to do when you have an asthma attack. Every asthma action plan is similar but should be customized to fit each person's symptoms and prescription medication. **You can download a fillable asthma action plan at [templehealth.org/asthmaactionplan](https://www.templehealth.org/asthmaactionplan).**

Below is an example of an asthma action plan, using a green, yellow and red zone framework:

● GREEN ZONE

All of the following are true:

- I have no coughing or wheezing.
- I can do all normal activities.
- My peak flow is 80% or more of my best peak flow.

Twice daily, I will take a puff of my controller medicine, fluticasone, once in the morning and once in the evening. Because exercise triggers my asthma, I will also take two puffs of my quick-relief medicine, albuterol, 15 minutes beforehand.

● YELLOW ZONE

One of the following is true:

- I'm coughing, wheezing or having difficulty breathing.
- I have tightness in my chest.
- It's hard to work or exercise.
- I wake up at night coughing.
- My peak flow is 50% to 75% of my best peak flow.

I will keep taking my controller medicine twice daily, and also take two puffs of my quick-relief medicine.

If 20 minutes have passed and I still have symptoms, I will take another two puffs. If symptoms aren't better after an hour, I will take my oral corticosteroid, prednisone. Then, I will call my primary care provider.

● RED ZONE

One of the following is true:

- Breathing is very hard.
- Walking or talking is hard.
- Medicine isn't helping.
- Lips or fingernails turn gray or blue.
- My peak flow is less than half of my best peak flow.

I will immediately take two puffs of my quick-relief medicine and go to the emergency room or call 911. I will also contact my primary care provider.

ADVANCED TREATMENT

Most patients with asthma find success with standard treatments such as inhalers. But when standard treatments are ineffective, advanced asthma treatments are available from the experts at **Temple Lung Center**.

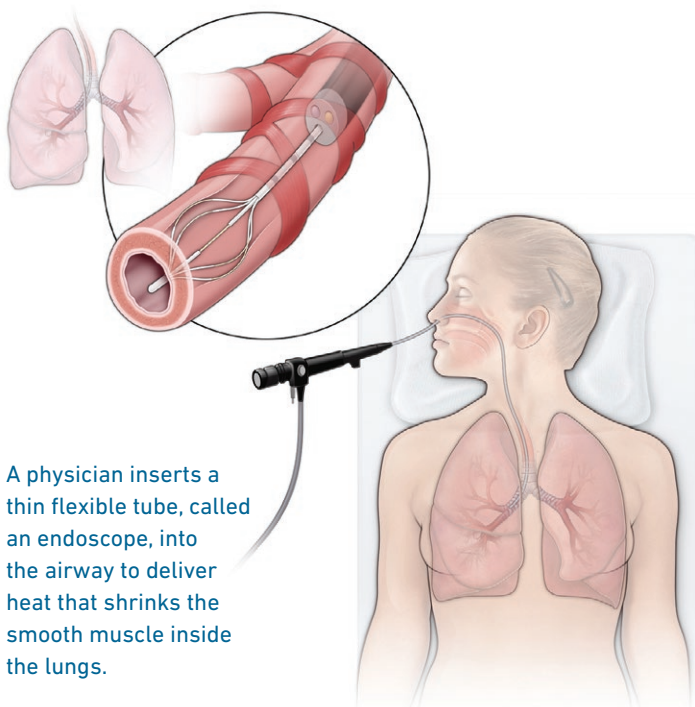
Bronchial Thermoplasty

Bronchial thermoplasty is a minimally invasive treatment approved by the Food and Drug Administration for patients with severe asthma that isn't well-controlled by medication. If you have asthma, your airways have become inflamed, causing surrounding muscles to thicken and constrict airways. Bronchial thermoplasty treats asthma by using heat energy to reduce the thickness of the smooth muscle surrounding the airways. This makes it harder for the airways to constrict and improves breathing.

Bronchial thermoplasty is a same-day treatment that takes place over the course of three sessions, usually scheduled three weeks apart from each other. One procedure is performed for each of the lower lobes of the lungs, and one for both upper lobes.

It's important to know that bronchial thermoplasty can only be performed once on each lobe of the lungs. If you receive the full course of treatment, you won't be able to receive it again in the future.

Clinical studies of bronchial thermoplasty have shown that it improves asthma control, including quality of life. It also results in fewer visits to the emergency room for asthma symptoms, and fewer days of school or work missed, for up to one year following treatment.



A physician inserts a thin flexible tube, called an endoscope, into the airway to deliver heat that shrinks the smooth muscle inside the lungs.



Biologic Therapies

Commonly known as biologics, these drugs are produced using live bacteria or cells that are designed to produce specific substances. You're likely familiar with some types of biologics, such as vaccines, insulin and gene therapies.

The medical team at Temple Lung Center uses a variety of biologics in the treatment of asthma. The primary biologics used at Temple Lung Center are:

- **Omalizumab** helps prevent reactions to asthma triggers like dust or pollen. It is given as an injection once or twice per month and is often used when other asthma medications have not been effective.
- **Mepolizumab and reslizumab** are newer drugs that reduce the level of eosinophils (cells that trigger asthma). This reduces airway inflammation and improves asthma control. These biologics are given as an injection once every four weeks.
- **Benralizumab** combats a high eosinophil count in the body, which is a type of white blood cell that fights disease. Too many eosinophils generally indicates an allergic reaction or infection. This biologic is injected every four weeks for three months and then every eight weeks.
- **Dupilumab** inhibits certain proteins in the body that can increase the severity of asthma. It is injected once every two weeks.

GET YOUR ASTHMA TREATED BY EXPERTS

Our team of pulmonary specialists can evaluate your asthma and determine the right course of treatment for you. To schedule an appointment, call **800-TEMPLE-MED (800-836-7536)**.

CLINICAL TRIALS

If you feel like you've exhausted your options for asthma treatments, clinical trials may be able to offer hope.

What Are Clinical Trials?

A clinical trial is a research study that tests new drugs, devices, surgeries or other types of treatments. They often compare treatments to see if one works better than another for a certain disease. Volunteers who participate in clinical trials can get access to leading-edge treatments. Researchers study the effects of these treatments, helping put them on the path to wider availability.

What Are the Types of Clinical Trials?

Clinical trials include:

- **Interventional trials** in which you receive an assigned treatment and are observed for changes in symptoms, sometimes in comparison to another treatment. If a new treatment is being studied, researchers try to determine the safety and efficacy of the treatment.
- **Observational trials** collect information about the medical care that you're receiving, and how it affects disease over time. Unlike an interventional trial, participants are not assigned to specific treatments.

Why Participate in Clinical Trials?

For patients with severe asthma, being a part of a clinical trial offers hope for improved health. If your asthma doesn't show improvement with traditional treatments, you may wish to consider being a participant in a clinical trial. That's because you may gain access to new treatment methods that otherwise wouldn't be available to you.

About Informed Consent

All clinical trials require informed consent — the process of making sure you know what may happen to you during the clinical trial. Before you commit to a study, our staff will go over the details of the study with you, including any procedures and potential risks and benefits of the trial.

If you decide to stop participating in the trial, you will still be able to see your Lung Center doctors.

Find Clinical Trials

Our list of open and enrolling trials is always changing. To search current trials at Temple Lung Center, visit templehealth.org/lungtrials.



ABOUT TEMPLE LUNG CENTER

Why visit the Temple Lung Center? We are:

- Home to a world-class team of clinicians and researchers.
- A national leader in diagnosing and treating lung conditions.
- The first Philadelphia-area facility to perform bronchial thermoplasty and we remain the most experienced in this treatment option on the east coast.
- One of the nation's premier lung-disease research centers, offering access to leading-edge clinical trials and innovative treatment options.

Even if you've been told you have no care options, our skilled network of specialists may be able to help you. Call **800-TEMPLE-MED (800-836-7536)** to schedule an appointment at one of our locations at your earliest convenience.

We're Here for You

When you're a patient at Temple Lung Center, you can expect a support network that's here for you every step of the way. Our model of care means that our team:

- Helps explain proper use of medication.
- Coordinates nursing support, if needed.
- Assists with the scheduling of injections.
- Makes frequent calls to you regarding scheduling and premedications.
- Helps coordinate prior authorization for advanced procedures like bronchial thermoplasty.

Our care team can provide any financial planning assistance you need. For more information, please visit templehealth.org/financial-assistance.



TEMPLE LUNG CENTER LOCATIONS

Wherever you are in the greater Philadelphia area, there's a convenient Temple Lung Center location near you.

Temple University Hospital — Main Campus

3401 N. Broad St.
Ambulatory Care Center, 5th Floor
Philadelphia, PA 19140

Temple University Hospital — Jeanes Campus

7600 Central Ave.
Patient Care Center, 1st Floor
Philadelphia, PA 19111

Temple Health Oaks

450 Cresson Blvd., Suite 200
Phoenixville, PA 19460

Temple Lung Center at Chestnut Hill Hospital

8815 Germantown Ave.
Philadelphia, PA 19118

Temple Health Ft. Washington

515 Pennsylvania Ave.
Fort Washington, PA 19034

Lung Center



You can schedule an appointment at the Temple Lung Center by calling 800-836-7536 or visiting our website at templehealth.org/schedule-appointment.

Temple Health refers to the health, education and research activities carried out by the affiliates of Temple University Health System (TUHS) and by the Lewis Katz School of Medicine at Temple University. TUHS neither provides nor controls the provision of health care. All health care is provided by its member organizations or independent health care providers affiliated with TUHS member organizations. Each TUHS member organization is owned and operated pursuant to its governing documents.

Non-discrimination notice: It is the policy of Temple University Hospital, Inc. that there shall be no exclusion from, or participation in, and no one denied the benefits of, the delivery of quality medical care on the basis of race, ethnicity, religion, sexual orientation, gender, gender identity/expression, disability, age, ancestry, color, national origin, physical ability, level of education, or source of payment. ©2021 Temple Health.