

# **Asthma: One Breath at a Time**

\*\*\*\*\* Asthma: One Breath at a Time (Part 1)\*\*\*\*\*

**Narrator**

Marie Coleman can vividly recall the asthma attacks that used to send her to the emergency room on a monthly basis.

**Marie Coleman, Patient**

Your lungs are burning, you're panicked. The more you can't breathe, the more you panic. The more you panic, the worse you can't breathe.

**Narrator**

Like Marie, many asthmatics deal with episodes of coughing, wheezing and gasping for breath. And often, simple breathing can be a struggle. But it doesn't have to be that way.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

For the overwhelming majority of people, asthma can be controlled. We believe every patient with asthma should expect to lead a nearly normal life with the proper care.

**Narrator**

More than twenty million Americans, or 1 in 12 US residents, has asthma, making it one of the nation's most common and costly diseases. Consider that each day:

- Nearly 30,000 people miss school or work due to asthma
- 50,000 people have asthma attacks
- 5,000 people visit emergency rooms due to asthma
- 1500 people are admitted to hospitals due to asthma
- 10 people die from asthma every day

**Carlos Camargo, MD, Harvard Medical School**

Asthma is a serious disease that can kill you. It is a common disease, but it is very controllable.

**Narrator**

After years of research funded by organizations like the American Lung Association, experts have developed a better understanding of the chronic nature of asthma and the breathing problems that it can create.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

Asthma is an inflammatory disease. It is an inflammation of the airways, just like arthritis is an inflammation of the joints.

**Carlos Camargo, MD, Harvard Medical School**

There is no one cause. It is not like you get an infection and you can say "oh, this is the bug that did it." It is more like heart disease or a lot of cancers where there is many different factors that add up together to create the risk.

**Narrator**

In the normal process of breathing, air reaches the lungs by passing through the trachea, which then divides into two large tubes called bronchi, one for each lung. In the normal process of breathing, air reaches the lungs by passing through the trachea, which then divides into two large tubes called bronchi, one for each lung. Here the oxygen from the air we breathe in is transferred to the bloodstream and carbon dioxide from the bloodstream is transferred back to the air we exhale.

In people with asthma, the airways, the bronchi and bronchioles, are extra sensitive or "twitchy". Asthma may develop when "trigger" substances irritate the sensitive lining of the airways. The airways become obstructed by responding in three ways to these triggers:

- The muscles surrounding the airways tighten;
- The airways get inflamed or swollen, narrowing the airways; or
- Excess mucus is produced, clogging the airways.

When the airways are obstructed, it takes more effort to push air through them so breathing becomes labored. The forcing of air through constricted airways can make a whistling we hear as wheezing. The excess mucus can provoke coughing. In fact one of the most frequent causes of intractable cough in an adult is unrecognized asthma.

**Eduardo Oliveria, MD, Cleveland Clinic, Florida**

The common symptoms for asthma include wheezing, shortness of breath, a cough very often and chest tightness.

**Narrator**

Asthma can be triggered by a variety of irritants, some medical conditions and even medications. Up next, we'll take a look at some of the most common triggers and see why some experts believe more people are being diagnosed with asthma now, than in years past.

**\*\*\*\*\* Asthma: One Breath at a Time (Part 2)\*\*\*\*\***

**Narrator**

Asthma can be triggered by irritants such as air pollution, cigarette smoke, paint fumes and strong odors. Allergens, viral respiratory infections, weather conditions and, in some, exercise can lead to symptoms.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

Many, many things may trigger asthma. Even some medications may trigger asthma and this is a problem in older people who take certain kinds of medications for high blood pressure and heart disease.

**Narrator**

Without proper treatment, these triggers can cause an asthma attack with potentially life-threatening consequences.

**Marie Coleman, Patient**

For an asthma patient, you can't take breathing for granted because you don't know whether you are going to be breathing five minutes from now. You could be fine, somebody walks by you with the wrong cologne, with dust on them, with pollen on them, and all of a sudden, you stop breathing. And if you don't get help immediately, that can kill you. So your biggest worry is whether or not you are going to live or die and that's all of the time.

**Narrator**

Asthma can create a considerable strain on adults who have the disease, as well as their families.

**Eduardo Oliveria, MD, Cleveland Clinic, Florida**

Take a lot of days off from work because of their exacerbations. It also disturbs their family environment very often because when they have an exacerbation, they have to be brought to the emergency room and they have to be treated, so it causes a lot of stress in their families as well as themselves.

**Narrator**

In the past, Marie made sure that she lived within a mile of a hospital because she knew she would eventually wind up at the emergency room with an asthma attack. She spent her days and nights trying to avoid the allergens that would trigger her symptoms.

**Marie Coleman, Patient**

I spent my whole life in my bedroom, not just nighttime. I spent any time that I wasn't at work, I was in my bedroom. That was the only place I had that was safe.

**Narrator**

The medical community became alarmed when the prevalence of asthma increased a staggering 75 percent between 1980 and 1994. During the past several years, the numbers have leveled off.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

One of the great mysteries about asthma in the last 20 years or so is why the number of people with asthma increased so much. And the best answer we have is that we don't really know.

**Narrator**

An increased awareness of the disease probably has contributed to the increased number of people being diagnosed. Some experts believe the upward trend also may be due partly to the fact that people today spend much less time outside than in the past, resulting in significant changes to our exposures to various allergens. Many people now have more exposure to indoor molds and mildew than allergens associated with livestock, for instance.

**Andrew Liu, MD, National Jewish Medical and Research Center**

One of the leading theories right now is that changes in our lifestyles may have led to this rise in asthma and allergies as well.

**Narrator**

Asthma can affect both youngsters and adults with symptoms that range from mild to severe. In fact, asthma is the most common chronic condition in children.

**Carlos Camargo, MD, Harvard Medical School**

Asthma most commonly develops in the first years of life and that is usually among boys.

**Narrator**

Sometimes the condition appears to go away on its own.

**Eduardo Oliveria, MD, Cleveland Clinic, Florida**

I have many patients that when they reach their 25th birthday or their 27th birthday, the asthma is almost completely gone and might never come back. But for most patients, they will have to live with asthma for most of their lives, which should not be a major problem since we can control asthma very effectively nowadays.

**Narrator**

Among adults, women are more likely than men to develop and also die from asthma.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

Asthma is pretty common in older people, that is something that we all have to understand because we don't ordinarily think of old people as having asthma, but they do. Our statistics show that 2 million people over the age of 65 have asthma.

**Narrator**

African-Americans are more likely to be diagnosed with asthma during their lifetimes.

**Carlos Camargo, MD, Harvard Medical School**

Asthma is much more common in minority populations than in white populations.

**Narrator**

Kimberly Brown had problems with allergies as a child. But it wasn't until years later that she was diagnosed with asthma after a frightening episode one night when she had trouble breathing.

### **Kimberly Brown, Patient**

When you can't breathe, when you can't get air in, your body automatically forces you to try harder. You are sucking air in at an even greater rate, much harder and the airways are getting smaller and smaller. So you're actually not, no matter how hard you breathe or pull in, you're not getting any more air.

### **Narrator**

To diagnose asthma, physicians collect a patient's personal and medical history and conduct an overall physical examination. Doctors also may rely on one or more lung function tests such as spirometry to confirm the diagnosis.

### **Carlos Camargo, MD, Harvard Medical School**

You breathe into a machine that measures how well you can push air out, which is a marker of how tight your airway is.

### **Narrator**

Many asthma patients know exactly what triggers their asthma and they can essentially remain free of symptoms by avoiding these irritants. But for unknown reasons, some individuals are born with twitchy bronchioles.

### **Carlos Camargo, MD, Harvard Medical School**

The most useful classification is to divide it up to persistent asthma and intermittent asthma. There are a small number of people who have years with absolutely no symptoms, no problem and then have an asthma exacerbation or an asthma attack. But most people have chronic inflammation of the lungs that is worsened by for instance having a cold. So on top of this chronic inflammation you have a spike, which is the asthma attack.

### **Narrator**

Gaynelle Ivandick developed asthma when she was a little girl and it had a major impact on her childhood.

### **Gaynelle Ivandick, Patient**

I didn't go outside and get dirty. I couldn't run and get sweaty. Running and getting sweaty meant that I was going to have an asthma attack and I was going to end up in the hospital.

### **Narrator**

But thanks to the care and education she has received at the National Jewish Medical and Research Center in Denver, Gaynelle no longer has to restrict her activities.

### **Gaynelle Ivandick, Patient**

I learned how to start living and treating my asthma proactively, not reactively. You can live. You do not have to be in a box. And it is all about the proper treatment, the proper medications.

### **Narrator**

Coming up, we'll learn more about the treatments that are allowing asthma patients to enjoy active lifestyles.

## **\*\*\*\*\* Asthma: One Breath at a Time (Part 3)\*\*\*\*\***

### **Narrator**

Although no cure has been discovered for asthma, most patients can successfully control their condition through avoiding known irritants that trigger symptoms and by taking prescribed medications.

As part of an avoidance of triggers, asthmatics that are allergic to animal dander should not have indoor pets.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

So if you know you are allergic to that adorable cat, find the cat another home, or at least don't let the cat ever go into your bedroom.

**Narrator**

People with asthma should also consider creating a "Safe Room" in the home where they can escape to be as allergen free as possible. Specific suggestions for this room include:

- Keep shoes worn outside in another location
- Use an air cleaner equipped with a HEPA filter
- Encase pillows, mattresses and box springs with allergen-proof zippered covers
- Non-carpeted flooring is best
- Avoid curtains and drapes. Plain window shades are preferable
- Keep all clothing in drawers and closets
- Keep humidity low

In addition to avoiding triggers, many asthma patients take two different types of medications every day to help their breathing.

**Carlos Camargo, MD, Harvard Medical School**

So there are two kinds of medicines: the quick-relief medicines, which are fast-acting, and then the controller medicines, which are anti-inflammatory medicines which really address the problem of asthma, which is inflammation of the airways of the lungs.

**Narrator**

The "rescue" or quick-relief medications are inhaled to treat asthma symptoms or an asthma attack. These medications rapidly relax the smooth muscles around the airways, allowing them to open.

**Eduardo Oliveria, MD, Cleveland Clinic, Florida**

It is a medication that is designed to get you out of trouble right away.

**Narrator**

The preventative or long-term asthma control medications are taken daily. These medications inhibit the inflammatory response to irritants and thus reduce or prevent swelling in the airways and decrease mucus production.

**Andrew Liu, MD, National Jewish Medical and Research Center**

The goal of the long-acting controllers is to keep those symptoms from being triggered in the first place.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

The most common controller medication is inhaled steroids. Now these are the kind of steroids used to treat inflammation, not the kind of steroids that are used for body-building. And when they are inhaled, they are very, very safe.

**Narrator**

Another advantage of inhaled steroids is that a maximum amount gets to the lungs with minimal side effects to the rest of the body. A third class of asthma control medications is the leukotriene modifiers, which are available in tablets. They specifically block the powerful chemicals involved in the inflammation process and may reduce swelling inside the airways and relax the surrounding smooth muscles. Gaynelle Ivandick knows that taking her inhaled medicine as directed is critical.

**Gaynelle Ivandick, Patient**

I am on a corticosteroid. I take a corticosteroid every morning and in the evening every single day no matter what. I don't forget it. I know that it is part of my life that keeps me active.

### **Narrator**

An avid outdoor enthusiast, Gaynelle also has noticed a major improvement in her asthma as a result of the medication.

### **Gaynelle Ivandick, Patient**

It was just phenomenal how my life began to change. I live a good, normal life. It is amazing. It will, it changes your life completely.

### **Narrator**

Marie Coleman's life also has changed since she started receiving injections of a new type of asthma medication that blocks the body's response to allergens. This agent seeks to stop allergic asthma at its root cause instead of simply treating symptoms.

### **Marie Coleman, Patient**

For the first time in my life, I haven't been to the hospital in two years.

### **Narrator**

In addition to avoiding irritants that trigger symptoms and taking medications, patients may consider immunotherapy injections, also known as allergy shots and desensitization. Doctors will test various allergens on a patient's forearm and back. When welts form that indicates the patient is sensitive to that substance. Regular immunotherapy injections can improve a patient's sensitivity to those substances, reduce medication use and may even reduce the risk of developing new allergies in the future. Regardless of how the asthma is treated, with trigger avoidance, medications or immunotherapy, all asthma patients should have a personal asthma control plan to help them monitor their condition.

### **Kimberly Brown, Patient**

An asthma management plan is absolutely the most important thing that you can have.

### **Norman Edelman, MD, Chief Medical Officer, American Lung Association**

And an asthma plan does several things, it tells the asthma patient what medications to take regularly. It tells the asthma patient how to know whether he's doing well or getting worse. It tells the asthma patient what to do when he or she is getting worse, and that is very important. It tells the asthma patient how to avoid triggers, how to keep their room dust free, how to avoid things they are allergic to. So it is a comprehensive plan.

### **Carlos Camargo, MD, Harvard Medical School**

Because panic doesn't help shortness of breath, it makes it worse. The last thing that a short of breath person with asthma needs is general panic. And not being able to breath is a pretty frightening experience.

### **Narrator**

As part of their asthma control plan, individuals should use a peak-flow meter to keep track of their breathing capacity. If the readings begin to drop, it may be a sign of worsening asthma symptoms.

### **Carlos Camargo, MD, Harvard Medical School**

That may be your only clue that you are headed downward.

### **Narrator**

Next we'll focus on the problem of uncontrolled asthma, which experts view as a national health concern.

\*\*\*\*\* **Asthma: One Breath at a Time (Part 4)**\*\*\*\*\*

### **Narrator**

More than half of Americans with asthma do not have the condition under control. In many cases, these asthmatics and their families are suffering needlessly, a sad scenario that Boston emergency room physician Carlos Camargo sees all too frequently.

**Carlos Camargo, MD, Harvard Medical School**

It is like a revolving door. They get better and then two weeks later they believe falsely that their asthma is gone, two months later they're back. So we need to break that cycle.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

People haven't been educated to understand that they can feel better. There are many people out there who think their level of function, which may not be terribly good, is the best that they can do.

**Narrator**

In an effort to address this problem, the American Lung Association has developed the Asthma Control Test. This five-question test is a simple but objective and quantifiable assessment of an asthma patient's current condition.

**Norman Edelman, MD, Chief Medical Officer, American Lung Association**

The Asthma Control Test is a very useful tool for the management of patients with asthma because it is important for the patient to have a sense of whether he or she is doing as well as they should.

**Narrator**

Identifying and controlling irritants and allergies that make asthma worse is essential for effective management of this chronic condition. Here are some actions you can take:

- Stay away from cigarette smoke, do not allow visitors to smoke in your residence
- Wearing a protective mask, vacuum carpets weekly with a cleaner that has a HEPA filter
- Launder curtains and dust furniture weekly
- Do not use room deodorizers or perfumed cleaning products
- If you're allergic to animals do not keep a pet in the home
- Use a peak-flow meter to monitor lung function
- Wash your hands often to decrease upper respiratory infections
- Consider getting a yearly flu vaccination

Recognizing the early signs of an asthma attack is also critically important.

Examples include:

- Increasing use of your short-acting rescue inhaler
- Poor tolerance to exercise
- Awakening in the middle of the night short of breath or wheezing
- A decline in your peak-flow meter readings
- Symptoms of a cold, sore throat, runny nose, sneezing, coughing

Notable progress has been made in recent years in the development of medications for asthma patients, and experts say the future advances are a near certainty.

**Carlos Camargo, MD, Harvard Medical School**

A lot of the research that is going on now, including by my own group, is trying to understand what causes asthma so that we can change that and prevent millions more Americans from developing this disease.

**Narrator**

Kimberly Brown says asthma doesn't have to prevent people like herself from enjoying an active life. She has this advice for asthma patients.

**Kimberly Brown, Patient**

Learn your triggers, learn your symptoms very well don't be afraid of them, don't ignore them, and get on with your life.