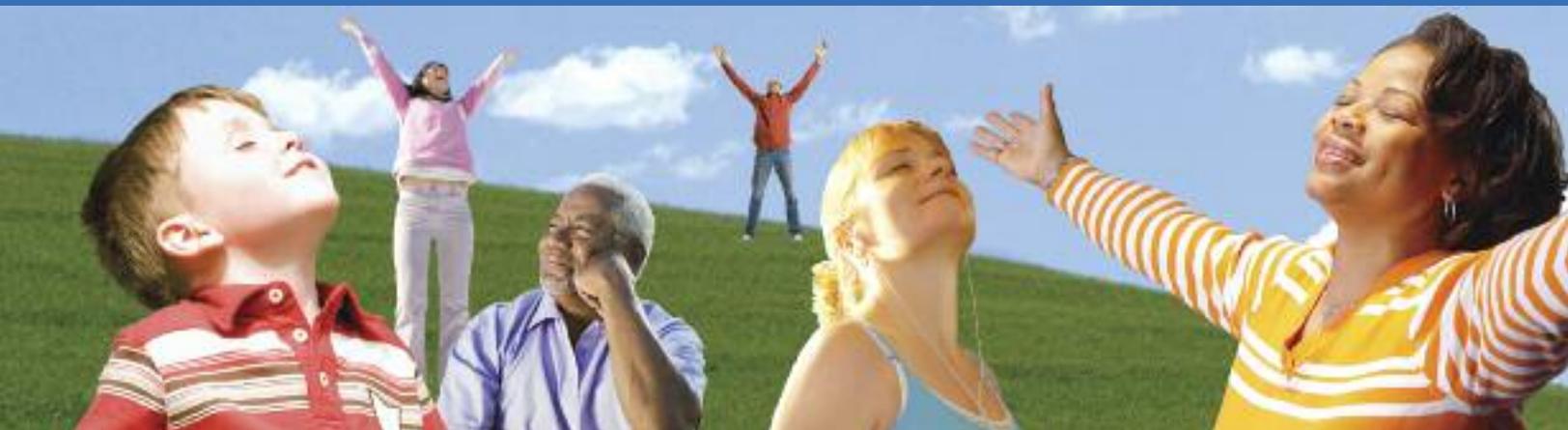


Breathing easier





CDC National Asthma Control Program

## America Breathing Easier



Working together, we can alleviate the burden of asthma and keep America breathing easier.



Research by the Centers for Disease Control and Prevention (CDC) shows that more than 32 million people in the United States have been diagnosed with asthma at some time. Of the 22 million U.S. residents who currently have asthma, 12 million have had an asthma episode or attack over the past year.

CDC's National Asthma Control Program plays a critical role in helping America breathe easier by learning more about asthma and how to control it.

Four thousand people die each year from asthma-related causes, and asthma is a contributing factor in another 7,000 deaths every year.

In asthma, something—air pollution, allergens, exercise, stress, certain chemicals in the workplace—causes the airways of the lungs to narrow or become blocked, making it hard to breathe.

For the most part we don't know why some people have asthma and others do not—although we're getting closer every day—but thanks to the work of medical researchers, health care professionals, and public health specialists, we're doing more to help people with the disease alleviate some of their burden.

But the burden of asthma falls not only on individuals with asthma. It also falls on our schools, our families, our neighborhoods, our workplaces, our cities, and our states. It falls on our health care system. It falls on all Americans, whether or not we have asthma, because we pay for that burden with higher health insurance rates, with lost productivity, and with our tax dollars.

The CDC National Asthma Control Program funds states, cities, and school programs to help them improve surveillance of asthma, train health professionals, educate individuals with asthma and their families, and explain asthma to the public.

To maintain that progress, CDC and its federal, state, local, and nonprofit partners must continue the vital work of tracking asthma, enhancing the capacity of federal, state, and local public health offices; training health practitioners and educators; implementing proven interventions; filling in gaps in research; and increasing the American people's understanding of asthma.

As part of a joint, coordinated effort, these people, programs and policies can alleviate the burden of asthma and keep America breathing easier.

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Acknowledgments

“My kids have asthma and so do I.”

In fact, the mom’s case was far worse. Unlike her children, this Illinois mother had no regular source of medical care. She regularly went to the emergency room when the panicky struggle to breathe overwhelmed her during bad asthma attacks.

Through a CDC-funded asthma control program, a caseworker educated the young mother about how medications could control her asthma. The caseworker demonstrated how an easy-to-carry inhaler could help her breathe easily, without anxiety, when medications failed to prevent an attack. The caseworker also talked with her about how to minimize dust, tobacco smoke, and other common substances at home that trigger asthma attacks.

In addition, the caseworker emphasized how important it was to find a primary care doctor, one who could look after her regularly and be available so she would not have to use the emergency room so often.

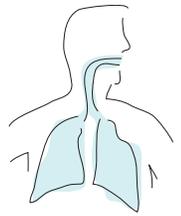
Six weeks later, the mother approached the caseworker at a community health fair. She had found a primary doctor, and she was beginning to get her asthma under control. The caseworker was pleased at the woman’s success. She knew that by getting better regular medical care, the young mother would be better able to care for herself and her children and would need the emergency room less often.

# AMBULANCE





part one



# Asthma: A Brief Introduction

More than 30 million people in the United States have been diagnosed with asthma during their lifetime. Of the 20 million U.S. residents who currently have asthma, 12 million have had an asthma episode or attack over the past year.

The number of reported cases of asthma has been on the rise since 1980 – the burden of asthma in the U.S. increased greatly throughout the 1980s and 1990s.

Four thousand people die each year from asthma-related causes. Many of those deaths could be avoided with proper treatment and care.

## WHAT IS ASTHMA?

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In people with asthma, something causes the airways of the lungs to narrow or become blocked, making it hard to breathe.

Normally, the airways to the lungs are fully open when we breathe, so air moves in and out freely. People with asthma have highly sensitive airways that become inflamed easily. They have asthma all the time, but they have asthma episodes or attacks only when something bothers their airways. During an episode, they may cough and wheeze or become short of breath. Sometimes an episode is so severe, they need emergency medical attention to breathe normally again.

### In an asthma episode:

- The lining of the airways swells and becomes more inflamed.
- Mucus clogs the airways.
- Muscles tighten around the airways.
- These changes narrow the airways until breathing becomes difficult and stressful, like trying to breathe through a straw stuffed with cotton.

*In some people a single trigger can set off an asthma attack, while for others several triggers must be present at the same time.*

## WHAT CAUSES ASTHMA?

The cause of asthma is largely unknown, although sometimes having asthma is linked to a specific trigger such as having inhaled certain chemicals at work. However, if someone in your family has asthma, you are more likely to have it, so there may be a hereditary component to the disease.

An asthma episode occurs when a person with asthma inhales substances in the air that trigger symptoms at home, work, or school.

Asthma triggers lurk indoors and out.

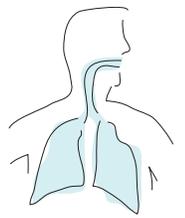
In many people with asthma, the same substances (called allergens) that cause allergy symptoms can trigger an asthma attack. These allergens may be inhaled, such as pollen, tobacco smoke, or dust, or eaten, such as shellfish. Avoiding or limiting exposure to known allergens can help prevent asthma symptoms.

Air pollution is one of the most underappreciated contributors to asthma episodes. Children with asthma are particularly vulnerable to ozone, even at levels below the Environmental Protection Agency's current standard. Pollution from truck and auto exhaust also raises the risk of asthma symptoms.

In addition, an asthma attack can be caused in some people by strenuous physical exercise, certain medicines, and even bad weather such as thunderstorms. No two cases of asthma are exactly alike. Some people react to just a few of these triggers, some to many. Some people need only a single trigger to set off an asthma attack, while for others several triggers must be present at the same time. People with asthma must learn which factors trigger their episodes, and then try to minimize their exposure to them.

## WHO IS AT GREATEST RISK OF ASTHMA?

Asthma affects people of all races, both sexes and all ages, and it affects people in every region of the U.S. However, asthma is seen more often among children, women and girls, African Americans, Puerto Ricans, people in the Northeast, those living below the federal poverty level, and those with particular work-related exposures.



Pollen



Tobacco smoke



Pet dander and other allergens like dust mites and pollen



Outdoor air pollution



Exercise and other activities that make you breathe harder

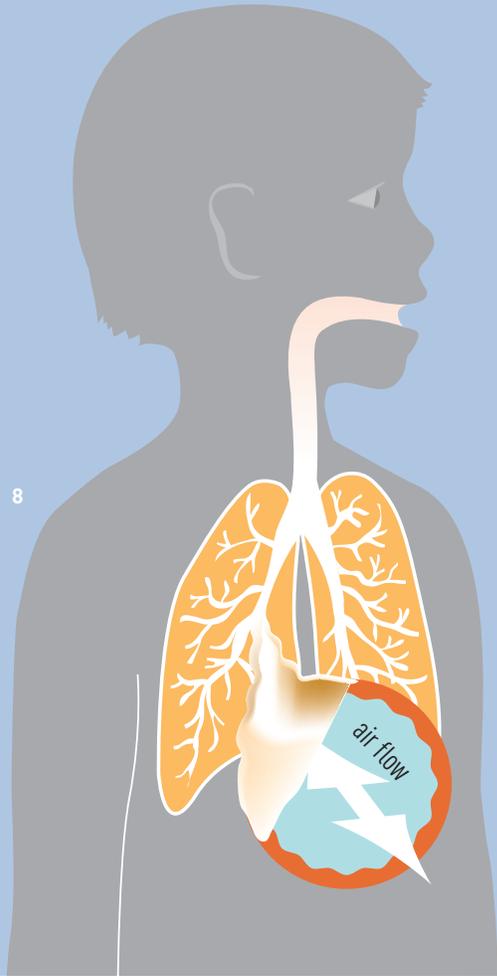


Mold

# Common asthma triggers

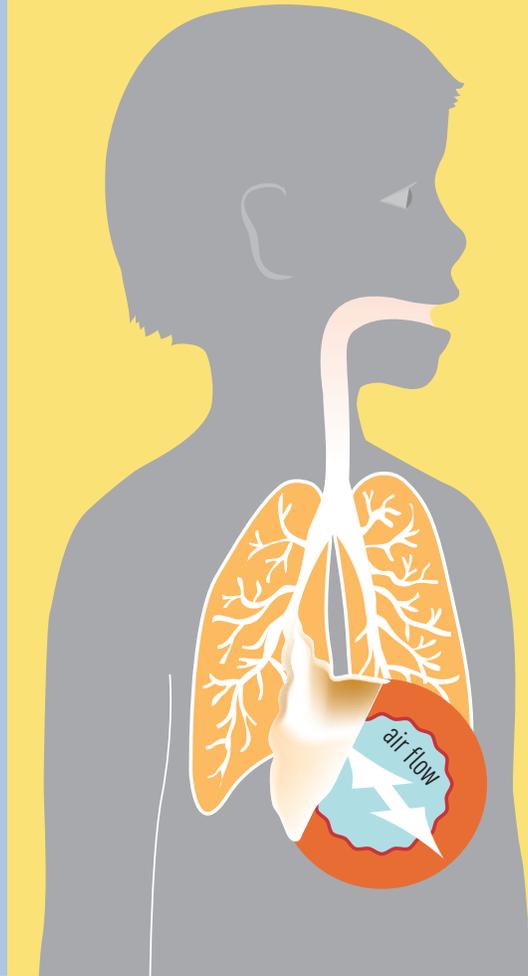
# What happens during an asthma attack?

8



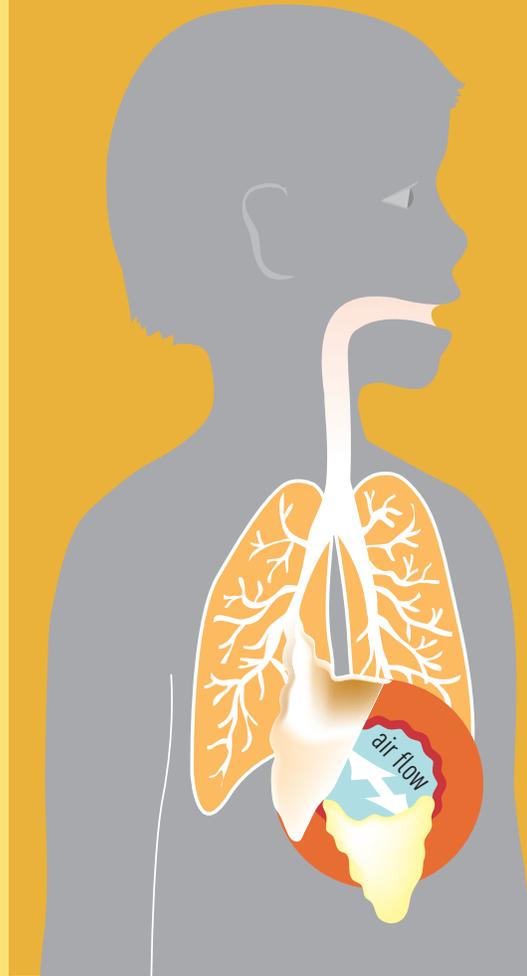
**healthy lungs**

Air flows unobstructed through the airways. Breathing is relaxed and effortless.



**first stage of asthma**

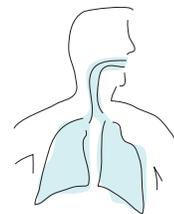
The lining of the airways swells and becomes more inflamed.



**secondary stage of asthma**

Mucus clogs the airways. Muscles tighten around the airways.

These changes narrow the airways until breathing becomes difficult and stressful, like trying to breathe through a straw stuffed with cotton.



### *Children*

Anyone can get asthma, but children are especially vulnerable. Asthma is twice as common among children as adults. Asthma is one of the most common chronic childhood diseases. Nearly five million asthma sufferers are under age 18.

Asthma is the third-ranking cause of hospitalization for children and one of the leading causes of school absenteeism. A total of 12.8 million school days are missed each year because of asthma.

### *Minorities*

African Americans have the highest death rate of all groups.

Hispanics in general have a lower asthma prevalence than non-Hispanic blacks and whites; however, Puerto Rican Hispanics have higher prevalence than other Hispanic subgroups. In addition, the prevalence of asthma among Puerto Ricans is higher than among non-Hispanic whites and non-Hispanic blacks for both adults and children.

In 2006, 2.7 million Hispanics had asthma, compared to 3.4 million non-Hispanic blacks and 15.6 million non-Hispanic whites.

### *Communities*

Sometimes, where you live can also increase your risk of experiencing an asthma episode. The Asthma and Allergy Foundation of America (AAFA) notes that factors such as air pollution, pollen counts, and public smoking bans; how many asthma medications each person with asthma uses;

The ciliated lining cells are so damaged that they slough off into the lumen and become part of the debris that obstructs the airway.



and the number of local asthma specialists strongly influence the occurrence of an individual asthma episode.

## WHAT ARE THE COSTS OF ASTHMA?

Each day, 11 Americans die from asthma.

Asthma death rates rose between 1980 and 1996 among both sexes, and most age and ethnic groups, but have declined since 2000. Women and girls account for nearly 64% of asthma deaths overall, although among children more boys die each year than girls.

Asthma burdens our nation and our health system in ways other than lives limited and lost.

Asthma leads to almost 13 million outpatient visits to the doctor and two million trips to the emergency room each year.

According to AAFA, the estimated annual cost of asthma is nearly \$19.7 billion, including nearly \$10 billion in direct health care costs (mostly for hospitalizations) and \$8 billion for indirect costs such as lost earnings due to illness or death.

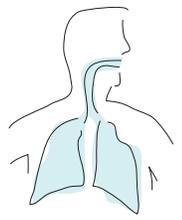
Asthma is the fourth leading cause of work absenteeism and diminished work productivity for adults, resulting in nearly 12 million missed or less productive workdays each year.

## ASTHMA CANNOT BE CURED BUT IT CAN BE CONTROLLED

The causes of asthma and how we can prevent or cure it are unknown except in limited cases of exposure to chemicals at work.

However, we can treat and control asthma. Individuals, doctors, communities, and public health officials can all take action to reduce the toll that asthma takes on our society.

CDC's National Asthma Control Program plays a critical role in helping America breathe easier by helping us all learn more about asthma and how we can control it.



## Asthma Facts

### *Numbers:*

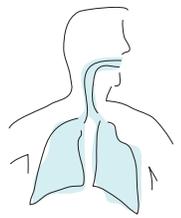
- **32.6** million people in the United States — more than 1 in 10 Americans — have had asthma at some point in their lives.
- **22.2** million people, 1 in every 14 Americans, are currently diagnosed with asthma.
- **12.2** million people had an asthma attack last year.
- **4,000** Americans die every year from asthma-related complications.
- Asthma costs the nation **\$19.7 billion** every year.

### *Every day in the United States, due to asthma:*

- 30,000 people have an asthma attack.
- 5,000 people visit the emergency room.
- 1,000 people are admitted to the hospital.
- 11 people die.

part two





# Public Health Response to Control Asthma

## CDC CREATES A NATIONAL ASTHMA CONTROL PROGRAM

As the prevalence of asthma increased during the 1980s and 1990s, federal health agencies responded.

The National Asthma Education and Prevention Program (NAEPP) of the National Institutes of Health's National Heart, Lung, and Blood Institute first issued guidelines for the diagnosis and management of asthma in 1991. These guidelines translated advances in scientific and clinical research into practical advice for people with asthma, for the health care providers who look after them, and for the communities where they live.

The guidelines included the best scientific evidence about comprehensive, long-term management strategies designed to prevent and reverse airway inflammation and to manage asthma attacks. They set up standard methods for doctors to gauge the severity of a patient's asthma and monitor treatment progress. The guidelines also noted that people with asthma should use a written action plan with treatment instructions to control their illness and handle worsening asthma. They encouraged partnerships among individuals with asthma, families, and clinicians. They also laid out control measures to avoid or eliminate environmental factors that bring on asthma symptoms or attacks.

The NAEPP guidelines were updated in 1997 and 2007 to reflect new research findings, but they marked only the beginning of America's road to breathing easier. While caring for individual patients is a crucial step, the road does not end in a doctor's office or hospital. Decreasing the burden of asthma also demands a comprehensive and coordinated public health approach. That's where CDC and its partners come in.

In 1998 a group of CDC staff and federal, state, and other scientists recognized that more needed to be known about asthma if it was to be better controlled. For these professionals, the key to asthma control was surveillance—identifying and tracking asthma cases.

### They wanted to know:

1. How many people have asthma? How many cases occur over time?
2. What groups suffer most from asthma?
3. How severe are the cases?
4. How well are asthma cases controlled?
5. What is the cost of asthma?

CDC created the National Asthma Control Program in 1999 to launch this public health approach to asthma.

## ASTHMA CONTROL PROGRAM GOALS AND HOW THE PROGRAM WORKS

Like the Healthy People 2010 goals, the asthma control program goals seek to reduce the number of deaths, hospitalizations, emergency department visits, school days or workdays missed, and limitations on activity due to asthma.

## WHAT IS SURVEILLANCE?

Surveillance, also called “tracking,” is the study of the distribution and occurrence of a disease in a population over time. To understand those patterns, researchers can record data such as the number of people with asthma, the number of people who go to hospitals or emergency rooms for treatment, the number of people that die from the disease, and other information.

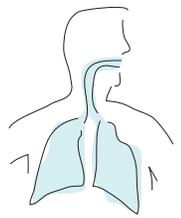
Unlike many infectious diseases, asthma is not usually reported to the CDC, and there is no laboratory test to diagnose it. That makes it hard to know for sure how many first-time cases of asthma occur each year.

To fill in that gap, CDC uses several surveys to gather asthma information. In fact, most of what we know about how asthma affects Americans comes from surveys.

In 1999, CDC’s nationwide Behavioral Risk Factor Surveillance System (BRFSS) added questions about asthma control and medication use. More detailed asthma management and control data are collected in 37 states through the National Asthma Survey, a follow-up to BRFSS.

CDC’s National Health Interview Survey (NHIS) collects data on how often asthma causes days of restricted activity, days lost at work or school, physician visits, and hospitalizations.

CDC also helps states and localities collect and analyze data to better understand who gets asthma, how severe it is, and where people with asthma live, work, or go to school. This information is then used to plan and evaluate asthma interventions.



Meeting those goals means knowing the scale of the problem and having programs to help manage the problem. CDC's asthma control program has three parts: surveillance, interventions, and partnerships.

- Surveillance (or tracking) lets us know how many people have asthma, where they live, and how those numbers change with the passage of time. CDC conducts surveillance activities at both the national level and, in cooperation with partners, the state level.
- Interventions apply methods used to prevent or treat asthma. CDC conducts interventions in cooperation with state and city health officials, nongovernmental organizations, and others.
- Partnerships include alliances CDC builds with states, localities, nonprofit organizations, and other federal agencies to reduce the burden of asthma.

Together, the CDC asthma control program and its many partners make up the public health response to asthma control. That response is a complex web of activities and partnerships at the national, state, and local levels. CDC provides critical support — through funding and technical guidance — to state health departments and local entities to ensure that asthma control and management are available to those in need.

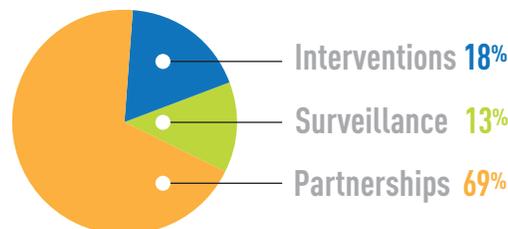
## NATIONAL HEALTHY PEOPLE 2010

### GOALS

- Reduce asthma deaths
- Reduce hospital emergency department visits
- Reduce number of school days or workdays missed due to asthma
- Increase the proportion of people with asthma who receive appropriate care
- Establish asthma surveillance in 15 states

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CDC's National Asthma Control Program Components and Percentage of Budget



## FEDERAL PARTNERSHIPS

The National Asthma Control Program has its home in CDC's National Center for Environmental Health, Division of Environmental Hazards and Health Effects. CDC's National Center for Health Statistics (NCHS) and Division of Adolescent and School Health (DASH) also partner in the program.

CDC collaborates with other federal agencies as well to achieve its asthma control objectives. CDC meets with the Federal Liaison Group on Asthma, which also includes the Environmental Protection Agency (EPA), the National Institutes of Health: National Heart, Lung and Blood Institute and National Institute of Allergy and Infectious Diseases, and others. CDC regularly cooperates with other federal agencies involved in asthma control, including the Centers for Medicare and Medicaid Services, the Health Resources and Services Administration, and the Department of Housing and Urban Development. CDC works closely with EPA to recommend guidance documents and review educational materials for technical accuracy.

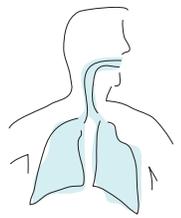
In addition, CDC funds collection of social, environmental, and medical data on asthma among 10,000 children by the Bureau of Labor Statistics' National Longitudinal Survey of Youth.

## STATE AND LOCAL ASTHMA CONTROL AND CDC

Partnerships between CDC and state health departments, cities, and other local entities (such as schools and nonprofit organizations) are essential for the success of asthma control in the U.S. Programs at these levels allow for more efficient use of special expertise, increased flexibility, and faster starts for programs.

### *Building State Capacity*

CDC grants support asthma programs in 33 states, Washington, D.C., and Puerto Rico. These grants help state health departments build their asthma programs, bolster



surveillance, implement interventions, and foster partnerships. In turn, this robust state capacity enhances the national public health infrastructure for addressing asthma.

Using CDC grants, 22 states have supplied training and tool kits to teach health care providers better ways to diagnose, treat, and manage asthma. Twenty-three states have developed similar materials to educate school personnel so they can do more to help students control their asthma.

*Building Local Programs*

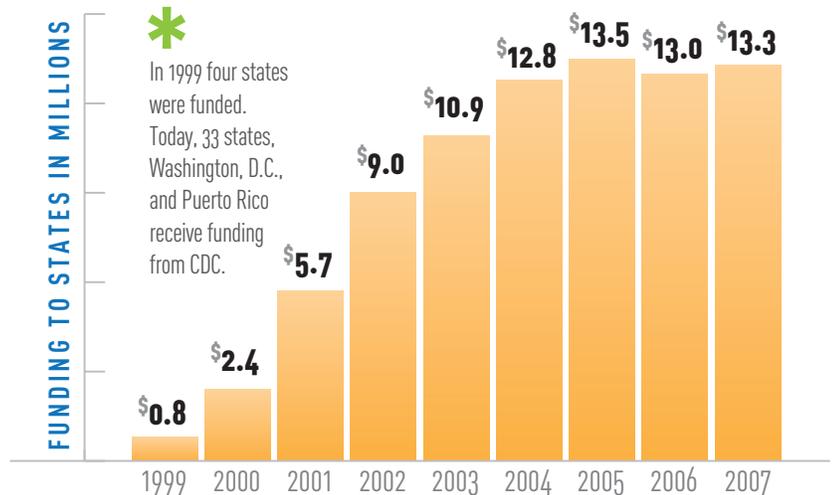
**CITIES:** In 2001, CDC began to fund inner-city collaborations as part of the Controlling Asthma in American Cities Project (CAACP) with the goal of developing comprehensive and intensive community asthma control plans. Seven metropolitan areas were



**NEW YORK**

Congress provided \$5.2 million for the New York Emergency Disaster Relief Related to Asthma program in the aftermath of the terrorist attack on September 11, 2001. Surveillance by the city and state monitors new onset asthma, asthma hospitalizations and emergency department visits, and asthma symptoms since September 11. The program tracks New York state response personnel, home environments near the World Trade Center site, and hospitalizations due to air quality issues since September 11, 2006.

The New York program also developed asthma programs in school health centers, preschools and daycare centers in lower Manhattan. Interventions improved clinical practice and coordination of asthma care between hospitals, schools, and primary care providers.



funded as part of CAACP: Chicago, Minneapolis/St. Paul, New York City, Oakland, Philadelphia, Richmond, and St. Louis. These projects translated existing asthma reduction strategies into services for children living in difficult social and physical environments. Based on their experience in CAACP, project staffs also created new interventions tailored to local conditions. CAACP resulted in extensive partnerships involving every level of the health care system from daycare providers to doctors.

Some programs educated daycare providers and parents about managing asthma in young children. Others integrated asthma self-management training into existing social service or faith-based organizations. One program linked high-risk children to specialty asthma services through their schools, while another worked with managed care plans to ensure reimbursement for self-management training. Some CAACP programs trained community pharmacists to educate people with asthma about using asthma medications properly, while others taught doctors the latest medical management techniques and better ways to communicate them to parents of kids with asthma.

Another successful program taught parents of children with asthma how to use diaries to make note of peak airflow, triggers, symptoms, medications, and side effects. The study coordinator then used these asthma diaries to demonstrate how long-term controller medicines worked better than rescue/quick-relief drugs in preventing asthma symptoms. The evidence in their own diaries persuaded individuals with asthma to overcome their reliance on rescue drugs.

CDC granted additional funds to CAACP cities



## WISCONSIN

Since 2002, more than 850 primary care clinicians have been trained by a partnership of the Children's Health Alliance of Wisconsin, Fight Asthma Milwaukee Allies, the Medical College of Wisconsin, the Wisconsin Academy of Pediatrics Foundation, the Wisconsin Asthma Coalition, and the Wisconsin Medical Society. An allergist and nurse took the Allergist Outreach Asthma Education Program directly to primary care clinics for pediatricians, family practice physicians, nurse practitioners, nurses, respiratory therapists, and other clinical staff.

Reviews of the program showed significant improvements in severity classification, assessment of dust as a trigger, and writing a care plan. Physicians and nurses also reported improvements in teaching individuals with asthma and staff teamwork. Adapting to changing needs in Wisconsin, the Allergist Outreach Program has evolved into short regional training sessions that reach larger audiences. The American Lung Association of the Upper Midwest has taken the Allergist Outreach Program on the road and now conducts in clinic and regional training sessions in Minnesota, North Dakota, Ohio, South Dakota, and Wisconsin.



DASH currently funds 10 urban school districts to implement comprehensive school asthma programs aimed at reducing student asthma episodes and absences. These school districts implement policies and programs related to improved school health services, asthma education for students and staff, and environmental management.

DASH funded six national nongovernmental organizations (NGOs) from 2000–2006 to develop tools and training programs to support teachers, school nurses, school administrators, pediatricians, school board members, community members, and parents in better understanding asthma and what they can do to improve asthma management in schools. Two of these NGOs, the American Lung Association and the American Association of



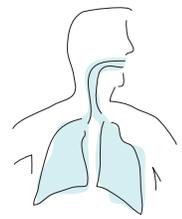
## I O W A

A new asthma management training curriculum for child care providers and schools resulted from Iowa's Asthma Control Program, a collaboration among the Iowa Department of Public Health, the American Lung Association of Iowa (ALA), the Iowa Asthma Coalition (IAC), the Child Care Resource and Referral (CCR&R) Agency, the Visiting Nurse Services (VNS), Mercy Hospital, Blank Hospital, and Glaxo Smith Kline. The Young and the Breathless has been delivered to more than 1,000 child care providers, over 200 licensed child care centers, and four major school districts since September 2003. Train the trainer sessions have been provided to nearly 175 nurses and nursing students in 88 counties. By May 2008, this program had touched 19,000 children receiving child care services or attending school.

Children are not the only ones who benefit. Although the training is intended to help child care providers care for children with asthma, 80% of the providers are women aged 22–40 years. Given that asthma prevalence is high in women aged 22–35 years, the program also equipped providers with skills to manage their own asthma.

## I L L I N O I S

The Illinois Asthma Program provides public and professional education for school personnel through a satellite program, and implements an asthma management program for 9th and 10th grade students in high risk communities. In one small, rural county, the Illinois Asthma Program, the Illinois Asthma Partnerships, and the local Asthma Coalition Team have helped place asthma in the forefront of the community's mind, along with other chronic diseases like diabetes. Health care providers, teachers, and coaches have taken asthma education programs. In addition, schools have started developing asthma policies for all students, with special attention to those playing sports.



School Administrators, are receiving funding to continue implementation of their asthma tools and programs from 2006-2011.

DASH also provides surveillance tools to help states and cities track progress in improved implementation of asthma management policies and practices at the state, district, and school levels, as well as self-reported asthma prevalence among middle and high school students.

### Experience shows that successful school-based asthma programs share several common factors:

- They establish strong links with asthma care clinicians to ensure continued medical care.
- They focus on the greatest need, targeting for intervention students who are the most affected by asthma at school.
- They build enthusiastic administrative support within the school, including the hiring of a full-time school nurse, to coordinate a multi-pronged approach to controlling asthma.

**NONGOVERNMENTAL ORGANIZATIONS:** CDC also works with nonprofit and health care professional organizations, including the American Lung Association; the Allergy and Asthma Foundation of America; the American Academy of Asthma, Allergy and Immunology; Allergy and Asthma Network/Mothers of Asthmatics; and the American Thoracic Society. Safe and effective programs developed by two of these organizations are now being implemented by 12 CDC grantees—including large hospital systems, urban hospitals, city health departments, school systems, and local chapters of national asthma organizations.

## PENNSYLVANIA

Pennsylvania's Department of Health established the Pennsylvania Asthma Partnership to oversee the state's asthma plan. The state uses surveillance data to target asthma interventions in areas of the state with high rates of asthma, but one effort to reduce the burden of asthma came straight from the grass roots.

In one high school, students noticed that smoke drifting out of a teachers lounge into the school band room triggered asthma attacks in a student. The students persuaded the school administration to ban smoking within the building, but then decided that response was inadequate. The Asthma Partnership funds anti-smoking contractors in every county because tobacco smoke can serve as a trigger for asthma attacks. With the help of the county tobacco contractor, the students organized a successful petition drive throughout their community to encourage the school administration to prohibit tobacco use anywhere on school grounds.

The Allergy and Asthma Foundation of America's "Asthma Care Training for Kids" (ACT for Kids) teaches children how to prevent and control their symptoms. Children learn to recognize early symptoms and know what appropriate actions to take if they appear. Parents learn to encourage children to make good decisions in caring for themselves. ACT for Kids increases asthma control compliance behaviors, decreases emergency department visits, and decreases the number of days children spend in the hospital.

In the American Lung Association's "Open Airways for Schools" (OAS), children discuss basic facts about asthma and practice relaxation exercises to calm themselves during an asthma episode. They learn to identify warning signs of an asthma attack, and then develop and practice a plan for managing it. Children learn to evaluate their symptoms, use medication properly, and practice deciding when to call for medical help. They learn about environmental triggers and staying physically active. OAS boosts school performance and self-management behaviors and lowers the number of asthma attacks.



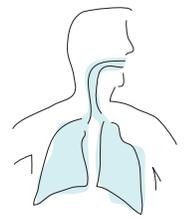
**RICHMOND**

An innovative CAACP program in Richmond, Virginia, worked with overweight school kids with asthma. The AsthmaFit program combined physical activity, asthma, and nutrition education and lots of fun! to help children lose weight and reduce their risk for asthma attacks.

**GEORGIA**

Laws and policies must not stand in the way of the treatment of children with asthma. In Jonesboro, a 10 year old student died of an asthma attack while waiting to board the bus home from school. District rules at the time prohibited students from carrying or using asthma medication by themselves at school.

As a result of this avoidable tragedy, the American Lung Association in Georgia, Children's Healthcare of Atlanta, and the Georgia Department of Human Resources worked with other citizens to change Georgia state law and local school policies to allow possession and self administration of prescribed asthma medications under the supervision of school personnel.



CDC National Asthma Control Program

# PARTNERS

## CDC PARTNERS

- National Center for Chronic Disease Prevention and Health Promotion — Division of Adolescent and School Health
- National Center for Health Statistics

## FEDERAL PARTNERS

- Centers for Medicare and Medicaid Services
- Environmental Protection Agency (EPA)
- Department of Housing and Urban Development
- Federal Liaison Group on Asthma (includes EPA, National Institutes of Health: National Heart, Lung and Blood Institute and National Institute of Allergy and Infectious Diseases, and others),
- Health Resources and Services Administration

## STATES

California	Indiana	Mississippi	Ohio	Utah
Colorado	Iowa	Missouri	Oklahoma	Vermont
Connecticut	Maine	New Hampshire	Oregon	Virginia
Georgia	Maryland	New Jersey	Pennsylvania	Washington
Hawaii	Massachusetts	New Mexico	Puerto Rico	Washington, D.C.
Idaho	Michigan	New York	Rhode Island	West Virginia
Illinois	Minnesota	North Carolina	Texas	Wisconsin

## CITIES

Albuquerque	Fresno	Minneapolis/St. Paul	Richmond
Charlotte	Houston	New York City	San Diego
Chicago	Los Angeles	Oakland	St. Louis
Fort Lauderdale	Milwaukee	Philadelphia	

## NGOs

Allergy and Asthma Foundation of America	American Association of School Administrators
Allergy and Asthma Network/Mothers of Asthmatics	American Lung Association
American Academy of Asthma, Allergy and Immunology	American Thoracic Society

part three





# Evaluation, Accomplishments, Future Directions

## EVALUATION

Every service program must be rigorously evaluated to see how well it performs its intended purpose. CDC staff evaluate the National Asthma Control Program based on four simple questions:

- *What are we doing?*
- *Are we doing the right things?*
- *Are we doing things right?*
- *Are we reducing the burden of asthma?*

**What are we doing?** CDC is developing a Web-based reporting system to help catalogue partners' activities. This system will provide summaries of state efforts and track state activities and progress over time.

**Are we doing the right things?** CDC uses information generated from CAACP to identify best practices and the most effective interventions. CDC also works with the Task Force on Community Preventive Services to identify community-based interventions that are proven to work.

**Are we doing things right?** CDC works with state grantees to develop consistent standards and indicators that will help evaluate the effectiveness of surveillance, interventions, and partnerships.

**Are we reducing the burden of asthma?** To help answer this question CDC is refining collection of the right kind of data—such as the percentage of people with asthma who receive asthma control training and services. CAACP is already collecting information at the local level about asthma hospitalization rates and school absenteeism.

## ACCOMPLISHMENTS

Since CDC's National Asthma Control Program began 10 years ago, much has been accomplished to expand and improve asthma treatment, management, and control in the U.S. The program has filled the critical need for a public health response to asthma, the very approach that has helped individuals and communities manage and control the disease.

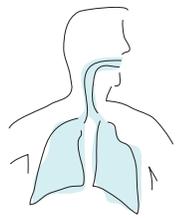
Before CDC's National Asthma Control Program began, there were insufficient data to answer questions about asthma such as: Who has it? Who is getting asthma? Who is suffering from asthma episodes? Where and among whom is asthma on the rise? Who needs to go to the hospital because of an asthma episode? Who needs better treatment for their asthma? Today, because of National Asthma Control Program tracking, more national and state-specific data are available to help professionals answer these questions and focus efforts and resources on those in need.

Through CDC support and funding, state health departments have been able to build up their asthma control programs. These state programs have improved the quality of asthma care, improved asthma management in schools, and fostered policies to help reduce air pollution, all of which help to reduce asthma rates.

## FUTURE DIRECTIONS

CDC's National Asthma Control Program has established a public health response to asthma control. As a result, a network of professionals, programs, and data collection systems—at the local, state, and national levels—are in place to continue to address, analyze, and control asthma in this country.

Asthma cases are still increasing, and many communities and individuals are in need of care and treatment. CDC's program is focused on determining why asthma is on the rise, who has asthma and why, what triggers an asthma episode, and what interventions and programs work best.



## Tracking the progress of asthma control

### Before 1999

Lack of public health response to asthma control.

Lack of state and local asthma control programs in the U.S.

Lack of data needed to help reduce the burden of asthma.

Limited asthma control programs in schools.

Limited knowledge about asthma control programs and interventions that work.

Lack of a connection between asthma and air pollution.

Limited understanding of asthma control programs and treatment at the community and individual levels.

### Now

Integrated and coordinated public health response to asthma control.

Network of asthma control programs and professionals across the country.

Asthma control programs in 33 states, Washington, D.C., and Puerto Rico.

Robust national and state-specific data and survey systems to help understand asthma and to make sound decisions regarding asthma control.

Better asthma management in a number of schools across the country.

Efforts initiated to evaluate and identify best practices at the community and individual levels.

Increased understanding of the associations between asthma and particulate vehicle emissions, and the consequent need for protective health policies. Some states have mandated controls on vehicle emissions to help improve air quality.

Increase in asthma control across the country and, in particular, among populations and individuals at risk.

*CDC plans to seek answers to why asthma is on the rise, who has asthma and why they have it, what triggers an asthma episode, and what interventions and programs control it best.*

**Specific future directions are:**

- Identifying new cases of asthma and potential risk factors by diagnosis and tracking of patients in a managed care system.
- Analyzing racial and ethnic disparities in asthma to develop culturally specific interventions and reduce these disparities.
- Understanding what triggers or exacerbates asthma episodes in order to develop better population level prevention interventions, especially among the people at greatest risk.
- Addressing emerging needs such as increasing air pollution and man-made or natural disasters that could lead to increases in asthma.

For example: Air pollution, especially particulates in the air from vehicle emissions, has been linked to asthma rates and hospital visits in certain communities. Understanding this connection can help neighborhoods and communities pass health-protective policies, such as those that decrease vehicle emissions.





## THE BURDEN OF ASTHMA

The burden of asthma is too often borne by those least able to bear it. A child. A fearful young mother. A man worried about missing another day of work. An elderly woman living alone.

In California, a little girl named Jasmine faced that burden. Without help, she might have been crushed by it. Concerned about her breathing problems, her parents wouldn't let her take part in physical education or other vigorous activity with other kids her age. They wouldn't even let her go to preschool if the weather was cold or rainy.

But with the help of an asthma case manager, Jasmine's mom and dad learned how to manage her asthma using medications prescribed by her doctor. The asthma specialists found that exercise was less likely to cause symptoms than other triggers in the household, which were soon eliminated. Soon she was running and playing like other kids her age.

Today, Jasmine happily attends school, as active as the rest of her class.

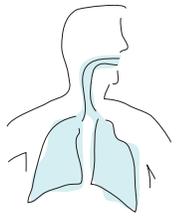
But the burden of asthma falls not only on individuals with asthma. It also falls on our schools, our families, our neighborhoods, our cities, and our states. It falls on our health care system. It falls on all Americans, whether or not we have asthma, because we pay for that burden with higher health insurance rates, with the lost productivity of days missed at work, with futures diminished by days home from school, and with our tax dollars.

We may not know what causes asthma—although we're getting closer every day—but thanks to the work of medical researchers and public health specialists, we're doing more to help people with asthma and alleviate the burden it creates.

To maintain that progress, CDC and its state, local, and nonprofit partners must continue the vital work of conducting surveillance activities, building capacity, training health and education professionals, implementing interventions that work, and increasing the American people's awareness and understanding of asthma.

As part of a joint, coordinated effort, these people, programs and policies can alleviate the burden of asthma and keep America breathing easier.





# Acknowledgments

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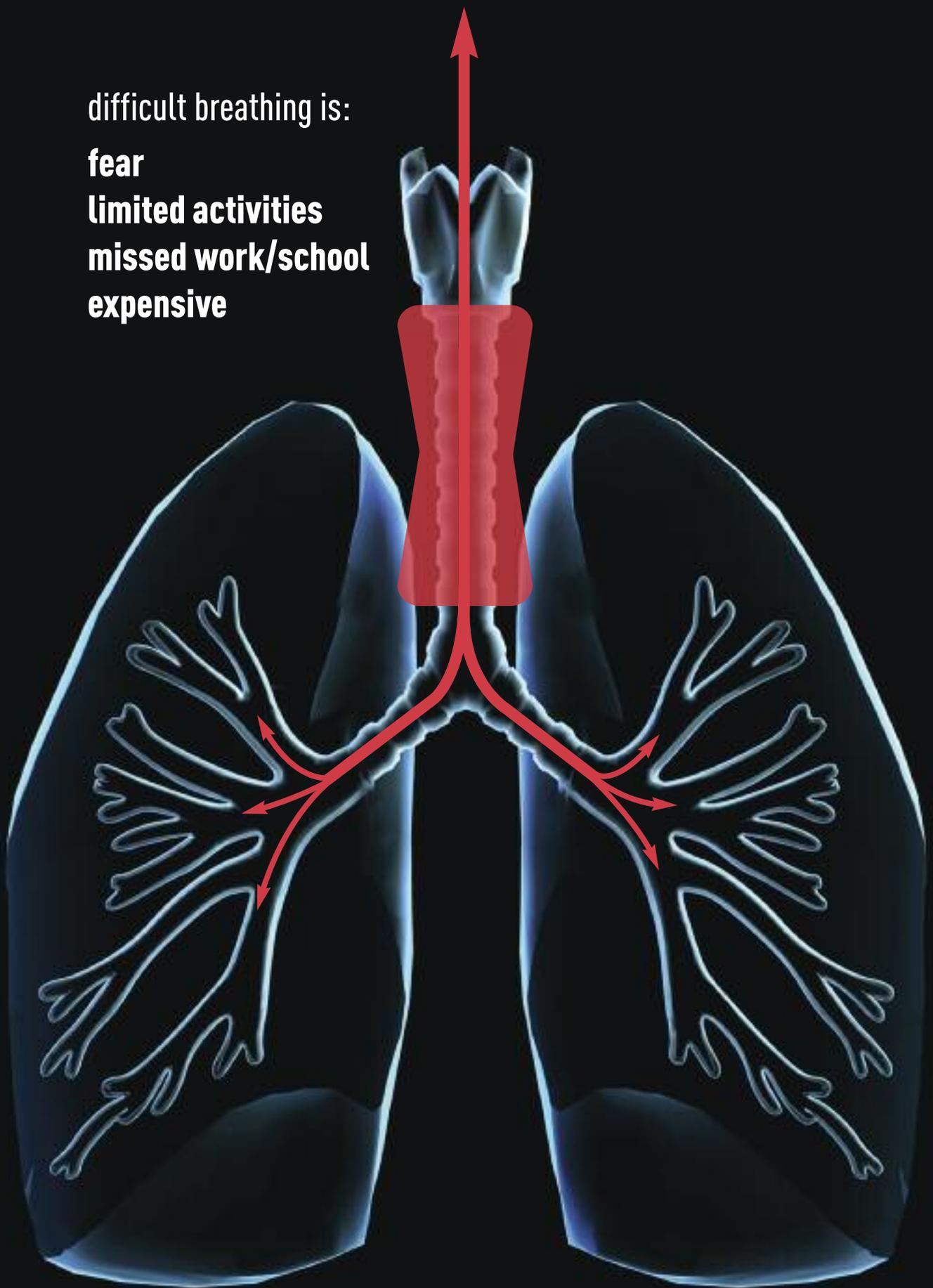
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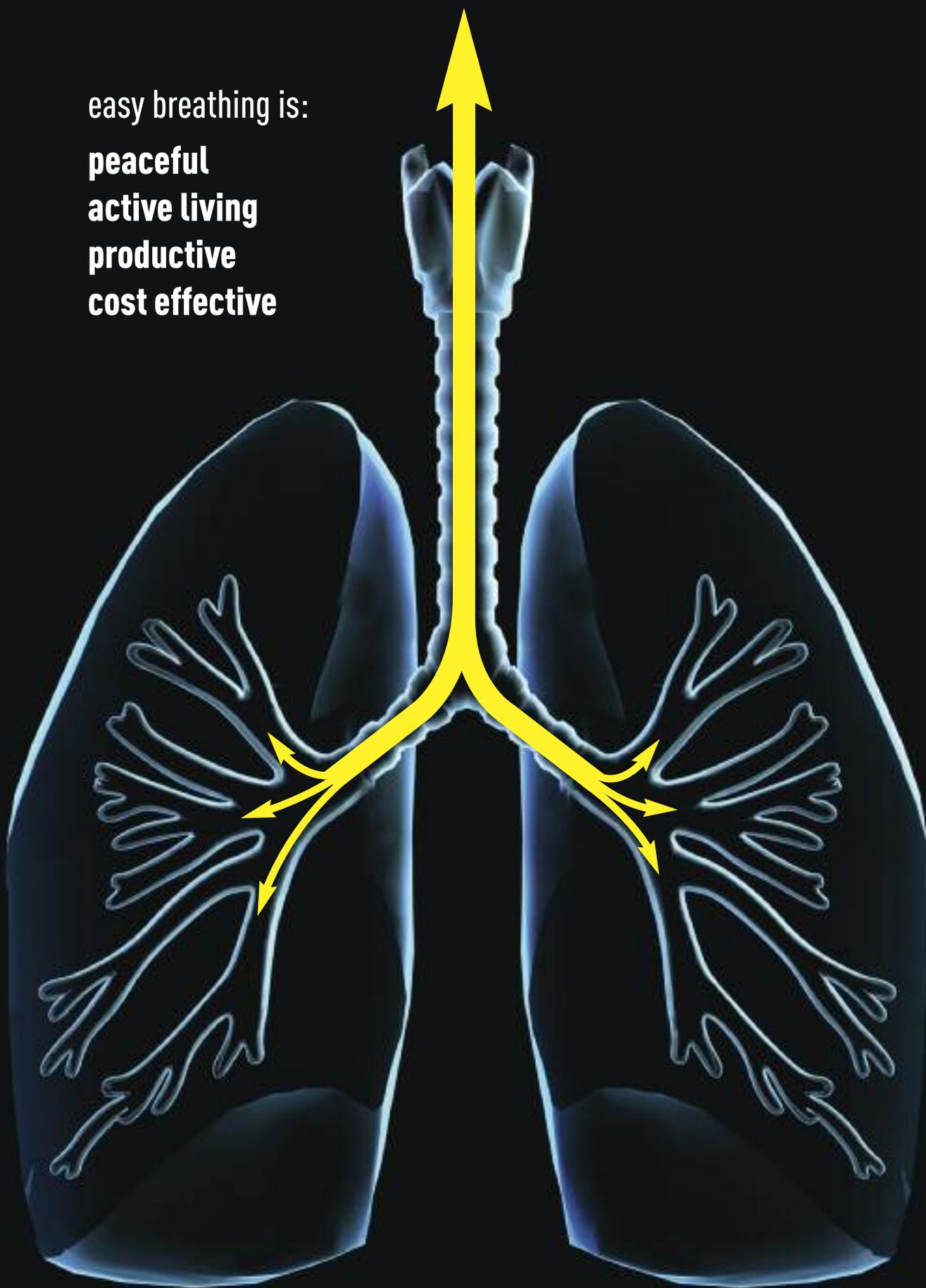
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difficult breathing is:  
**fear**  
**limited activities**  
**missed work/school**  
**expensive**



easy breathing is:  
**peaceful**  
**active living**  
**productive**  
**cost effective**





**U.S. Department of Health and Human Services  
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