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Children's asthma, costs rising rapidly

Annual health care costs for children with asthma are more than double the total for non-asthmatic youngsters, shows a study out Monday.

With incidence of the disease steadily rising, and no key breakthrough in sight, "it's clear an increasing proportion of pediatric health care dollars will be going into asthma care," says Paula Lozano of University of Washington Medical School, Seattle.

Her one-year report of 72,000 children in a Seattle HMO shows an asthma diagnosis adds an average of \$615.17 more per child every year. The report, in Pediatrics, finds asthmatics' costs were \$1,060.32, compared with \$445.15 for children without the disease.

About 5 million U.S. children have asthma, the most common chronic illness of childhood. Rates rose 73% between 1982 and 1994.

Experts don't know what's causing the surge. One possible reason: American kids are spending more time indoors, where asthma-triggering dust mites and other allergens lurk.

Also, our skill at knocking out childhood infectious diseases may have an ironic downside: Some infections curtail an inflammatory molecule linked to asthma.

Most patients have a genetic vulnerability to the disease. A promising new line of research involves identifying asthma genes and creating a gene therapy, says Marshall Plaut of the National Institute of Allergy and Infectious Diseases. But treatments could be years away, if they emerge at all.

New federal guidelines emphasize using state-of-the-art drugs, such as inhaled steroids. "Some newer medications are underused," says Plaut, despite evidence they reduce asthma severity and costs.

By Marilyn Elias, USA TODAY

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Asthma

IDEA:

National Campaign to Fight Asthma.

ROUGH PLAN:

Much like the Clinton Administration's efforts targeting breast cancer, we can target asthma, a rising national health crisis that has been characterized as a "pandemic" in the media. (See, e.g., Newsweek) Asthma is a particularly acute problem for children. As we did with breast cancer, we can marshal federal resources to study the causes of asthma as well as new treatments.

FACTS:

- Asthma now afflicts about 14.6 million Americans, including 5 million children. This is twice the number it was 25 years ago, at a cost of \$ 6.2 billion a year in missed work and school, in medications and hospital visits.
- From 1982 to 1994, the rate of asthma among children rose 72 percent.
- The United States has an overall asthma rate of about 5 percent. But the rate is 8.4 percent in New York City, and it can reach 25 percent among kids in the poorest urban neighborhoods.
- The death toll has nearly doubled, to 5,000 a year.
- Asthma has become the most common chronic disease of childhood, the No. 1 cause of hospitalization and absenteeism.
- Asthma is especially severe in the inner city, where rates of asthma emergency room visits and deaths can be eight times the national average.

THE FALL OF A DICTATOR: WHAT NEXT FOR ZAIRE?

Newsweek

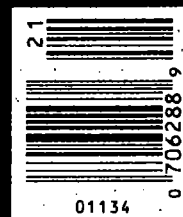
The
Scary
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of

Asthma

And
How to
Protect
Your
Kids

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NON-CIRCULATING



LIFESTYLE

Asthma is a scary fact of life for millions. Can it be beaten?

BY GEOFFREY COWLEY
AND ANNE UNDERWOOD

Why Ebony Can't Breathe

THIRTEEN-YEAR-OLD ANTONIO O'BRY



...the ball of pain. A lifelong sufferer, she never left for school without an inhaler full of medicine to open his airways. But when Antonio went to his gym class last Dec. 18, he apparently left his gear behind. When he felt an attack coming on, an astute teacher sent someone to fetch the nurse. Unfortunately, the nurse had stepped out on her break. By the time she and an assistant teacher returned to the gym with medication, Antonio was too far gone to get it into his lungs. The nearest hospital was only a mile away, but Antonio was unconscious when he arrived. He spent the night in an intensive-care unit, and it took two weeks before he could breathe without an inhaler.

Pit Stop

At Denver's Kunesberg School, asthma treatment is part of the curriculum. Kindergartner Ebonie Lindsay stops at the nurse's station to inhale medication whenever she feels 'tight.'



had to turn off the ventilator," his mother recalls. "My baby died on Christmas Day."

Tragedies like Antonio O'Bryant's are still mercifully rare. But as anyone with school-age kids can attest, his daily life was exceedingly common. In the course of a few decades, what was once

an obscure allergic syndrome has emerged as one of the nation's most vexing health problems. Asthma now afflicts about 14.6 million Americans, including 5 million children. The number of sufferers has jumped by 61 percent since the early 1980s, according to the American Lung Association—and the death toll has nearly doubled, to 5,000 a year. Fifth graders now monitor their air-

Please Pass the Inhaler

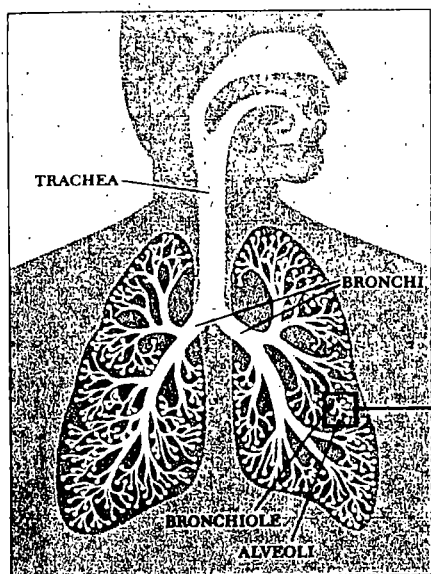
Asthma activist Nancy Sander and her daughter Brooke are both prone to attacks. But proper medication keeps them breathing easy.

And though scientists are learning more about asthma, the explosion is still largely a mystery. "Why are we becoming more allergic?" asks James Wedner of the Washington University School of Medicine in St. Louis. "Ten allergists will give you 10 different answers—maybe 15 or 20. No one really knows."

The dynamics of asthma are no mystery.

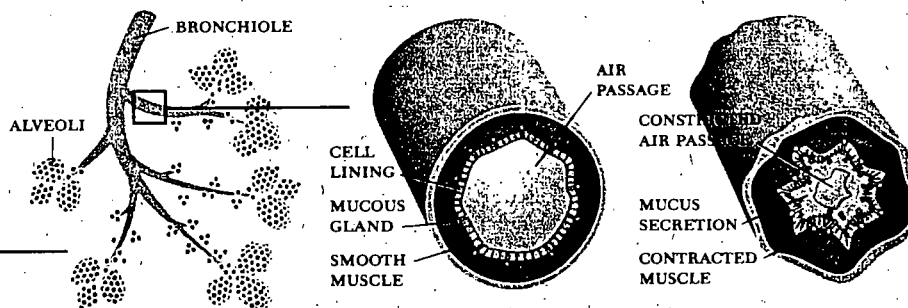
flow rates in liters per minute, while their parents swap information and moral support on the Internet. And none of this is unique to America. Throughout the developed world, people are suffering asthmatic reactions to a range of allergens that once caused little trouble.

The trouble starts when the immune system becomes sensitized to some allergen, usually through heavy exposure in early life, and starts treating it as a threat. Whenever the irritant enters the body, the immune system's B cells start churning out antibody molecules known as IgE. The antibodies then attach themselves to mast cells, which respond by spewing out histamine and other inflammatory chemicals. If this cascade is confined to the upper airways, the victim may suffer no more than a runny, itchy nose. The real trouble starts when the reaction extends down into the lungs. When small airways called bronchioles get doused with histamine, they swell and fill with mucus (chart). And as those passages narrow, the consequences can range from a tightness in the chest to suffocation. "Try running in



Anatomy of an Asthma Attack

When the respiratory system is working properly, the air we breathe passes in and out of the lungs through a network of airways (left). But for people with asthma, even a minor irritant will set off an immune response that can shut down the airways.



Bronchiole network: Air is distributed throughout the lungs via small airways known as bronchioles.

Healthy bronchiole: When they're clear and relaxed, the small airways accommodate a constant flow of air.

Asthmatic bronchiole: During an attack, mucus and tight muscles narrow the airways and interfere with breathing.

SOURCE: NORMAN EDELMAN, M.D., "FAMILY GUIDE TO ASTHMA AND ALLERGIES"; DIAGRAM BY CHRISTOPH BLUMRICH—NEWSWEEK

place for two minutes," says Nancy Sander, president of the Allergy and Asthma Network/Mothers of Asthmatics in Fairfax, Va. "Then hold your nose and try breathing through a straw in your mouth. That's what an asthma attack feels like."

Almost anything can act as an irritant. Toddlers who live with at least one smoker are nearly three times as likely to wheeze as kids in smoke-free homes, but nonsmokers' children also suffer. Dust mites, those tiny creatures that thrive in bedding, upholstery and carpets, spike their droppings with a highly allergenic protein. So do cockroaches. Molds and pollens cause a lot of asthma in humid environments. But people who flee the Everglades for Arizona don't end up suffering less asthma. They just find something else to react to, like the dander from their pets. Liz Aplin, a 47-year-old art teacher in Chattanooga, Tenn., is so sensitive to the dust from her pastels that she wears a mask to class. "Show me the dust from 100 houses in a community," says Dr. Thomas Platts-Mills of the University of Virginia's Asthma and Allergic Diseases Center, "and I'll tell you what people are allergic to."

says Dr. Fernando Martinez of the University of Arizona's Respiratory Sciences Center. Those with two asthmatic parents have 10 times the risk. And identical twins are more likely than fraternal twins to share allergies. But the gene pool hasn't changed dramatically in the past few decades. And as Wedner observes, "there is no gene that says, 'If you have this, you will wheeze.' Something in the environment must have changed."

Asthma isn't usually a problem in preindustrial societies, regardless of their natural surroundings. But when development sets in, asthma quickly follows. Dr. Hal Nelson of Denver's National Jewish Medical Center cites a 1991 study of children in Zimbabwe. Only one in 1,000 of those living in rural villages suffered from obstructed airways. Yet asthma plagued one in 17 (5.8 percent) of those in a prosperous section of the capital, Harare. Researchers have documented the same pattern among Aboriginal people in Kenya, South Africa,

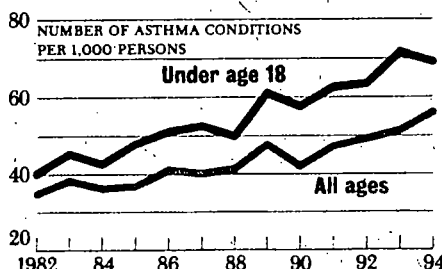
Papua New Guinea, New Zealand and Australia. Even within Western societies, increasing urbanization seems to make people more and more vulnerable. The United States has an overall asthma rate of about 5 percent, says Dr. Irwin Redlener of New York's Montefiore Medical Center. But the rate is 8.4 percent in New York City, and it can reach 25 percent among kids in the poorest urban neighborhoods.

If asthma is a disease of civilization, the question becomes: what aspects of modern life are to blame? Air pollution might seem an obvious suspect. As Dr. Norman Edelman notes in the American Lung Association's new "Family Guide to Asthma and Allergies" (238 pages, Little, Brown, \$19.95), ozone, diesel fumes and exhaust particles can all irritate the airways. Hospital admissions for asthma often rise 20 to 30 percent during periods of severe air pollution. But outdoor air pollution can't be driving the asthma pandemic, because it has improved in recent decades. Londoners suffered horribly from bronchitis during the 1950s, when the city was blanketed by noxious industrial fog. But asthma arrived after the worst of the pollution was gone. And Martinez has found that east German children enjoy lower asthma rates than west Germans, despite pollution levels that are often 10 times as high.

If outdoor air isn't to blame, could indoor air be playing a role? There's no question that modern urban life entails large doses of the stuff. Most Americans now spend at least 90 percent of their time indoors, according to the Environmental Protection Agency—and when we're not locked in buildings, we're usually sealed in vehicles. During the 1960s, American kids spent an

A Growing Menace

Asthma rates have increased in every age group, but kids have seen one of the largest jumps—73 percent from '82 to '94.



SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS

WITH THE RIGHT MEDICINES, even a severe asthmatic can make the condition manageable (page 62). But the greater challenge is to prevent it. Clearly, something is making us ever more sensitive to allergens. The question is, what? Genes clearly play a role in the disease. Children with one asthmatic parent contract asthma at three to six times the rate of other kids,

average of three hours a day playing outdoors. But that was before kickball gave way to PCs, VCRs and videogames. Today's children average only two hours outside. That's biologically abnormal behavior, says Platts-Mills, and it brings an array of medical consequences. "In every community where asthma has increased," he says, "there has been a decrease in overall exercise that correlates strong-

ly with the rise of indoor entertainment."

While spending more time indoors, we have turned our dwellings into havens for dust mites and other allergens. Until World War II, most homes had wood floors with scatter rugs. "If your family got a carpet, you thought that was upscale," says Linda Ford, president-elect of the American Lung Association.

"Now carpets are common and wood floors are upscale." Laying down carpets was just the beginning. We also invited our pets inside to shed on them—a practice that pre-war Americans would have found strange. And just as the mix was getting rich, we installed airtight windows to save energy.

Yearning to Breathe Free

With new drugs and devices, asthmatics avoid attacks—and even play soccer. BY SHARON BEGLEY

BACK IN THE DARK AGES of asthma care—like five or so years ago—"managing" one's asthma meant scrambling for a puff of bronchodilator as breathing suddenly became as arduous as sucking peanut butter through a straw. But lately doctors have been abandoning this "treat as needed" approach in favor of a preventive one. "The paradigm has shifted from being reactive to being proactive," says Dr. Stan Szefler of National Jewish Medical Center in Denver. And while today's "preventive" treatments still target the symptoms of asthma (inflammation and constriction of the bronchial tubes), scientists are in hot pursuit of drugs that target the causes: the hyperactivity of those airways. Until the new drugs arrive, physicians are trying to educate patients to do the most with existing therapies.

The first step in preventing attacks is to eliminate "asthma triggers" (sidebar). To identify what triggers inflammation and bronchial constriction in a patient, doctors can perform a simple skin test for allergic reaction. The next step is to determine how

severe the disease is. Someone who experiences no symptoms other than tightness in the chest after, say, sprinting for the schoolbus has a mild case and can usually get away with just a puff of a bronchodilator before exercise. But an asthmatic who regularly wheezes needs a veritable toolbox of drugs and devices, starting with the inhaler. Now almost as common in kids' backpacks as lunch money, inhalers hold a cartridge that, when pressed, releases a mist of medication. Another gadget is a "peak flow meter" that measures the rate at which the lungs expel air into a tube. That figure reveals how open the airways are and thus whether the patient needs a dose of medicine, and if so which one. (Depending on the severity of the disease, an asthmatic might use the monitor up to three times a day.) In some models a memory chip records the readings, and every month the patient downloads the numbers into a doctor's computer via a phone jack. By monitoring

Dust Buster

Show me the dust from 100 houses," says Platts-Mills, and he'll tell you what triggers asthma

the data, physicians can fine-tune treatment.

The drugs they prescribe include controllers and relievers. Relievers, such as the inhalant albuterol, sold as Ventolin and Proventil, relax smooth muscles in the airways within seconds. They're emergency measures.

Controllers include anti-inflammatories, such as corticosteroids, marketed as Vanceril, Azmacort and Flovent. Inhaled corticosteroids reduce inflammation in several

ways, including by interference with lung cells' secretion of "cytokines." These substances inflame the airways, causing swelling and hence troubled breathing. Another anti-inflammatory, cromolyn sodium (marketed as Intal), is less effective than steroids but is often prescribed for children because it is so safe. The other class of controllers is bronchodilators, like salmeterol and theophylline. They relax the lungs' smooth muscle



"The number of air changes per hour has plummeted since the 1970s," says Dr. Daniel Rotrosen of the National Institute of Allergy and Infectious Diseases.

The homes in asthma-plagued inner-city neighborhoods aren't known for their plush carpets or draft-free windows, but they have an even greater disadvantage:

the cockroach. An exterminator can usually banish cockroaches from a free-standing single-family home, but the pests are virtually inescapable if you live in a poorly maintained and densely populated high rise. In a study published this month, researchers led by Dr. David Rosenstreich of New York's Albert Einstein College of Medicine examined 476 asthmatic kids from eight impoverished neighborhoods

and found that cockroach allergies were the leading cause of attacks. Skin tests showed that different children were sensitive to different allergens, such as cat, cockroach and dust mite. But when the researchers looked at household environments, cockroaches emerged as the key. Kids whose bedrooms harbored cockroach proteins wheezed the most, missed the most school and spent the most time in hospitals.

ous rise in the number of asthmatics may have a silver lining: it has set off a race to bring new asthma treatments to market. The biotech firm Genentech is testing a molecule that blocks the action of immunoglobulin E (IgE), an antibody produced in response to asthma triggers. As any ragweed sufferer knows, IgE may be trying valiantly to fight off these invaders, but the collateral damage is huge: IgE binds to mast cells in the lungs and causes them to burst, releasing histamine and other inflammatory molecules. Genentech's IgE inactivator is probably two years from market.

Fast-acting relievers are being improved, too. The leading one, albuterol, is a mix of two mirror-image molecules. The good twin opens up breathing passages. The evil twin can make kids hyper or nervous, or cause irregular heartbeat or insomnia. One way to avoid the effects of the bad twin is to use a "spacer" device in the inhaler to send the medicine to the back of the throat and lungs, keeping it away from the tongue, where it can be swallowed and enter the bloodstream. Sepracor Inc. has another idea. It is trying to chemically separate out the bad twin, leaving the molecule that dilates airways. The drug could reach the market in 1998.

cells and keep airways open. A new controller acts before a patient senses that an asthma attack is imminent. Leukotriene pathway inhibitors block the action of molecules that cause inflammation and constriction of the airways. Accolate and Zflo, approved in 1996, are the first offerings in this new category; both are taken orally.

Given a choice, asthmatics would just as soon decline the honor of having a newly fascinating disease. But the mysteri-

Even with imperfect drugs, most asthmatics can lead pretty normal lives. Although some patients avoid anything more vigorous than aiming the remote control, most need not. The problem is not exercise itself but breathing through the mouth. When air bypasses the nasal passages, which warm and moisten it, the lungs get walloped with cold, dry air, ex-

plains Dr. William Busse of the University of Wisconsin. That makes the airways contract. But most asthmatics can safely swim (lots of warm, moist air to breathe). Even gymnastics are usually OK (lots of stops and starts). Track and basketball are riskier, since constant running can induce through-the-mouth breathing. Soccer is fine for kids whose symptoms are controlled by a puff of Ventolin before kickoff; for more severe cases, playing fullback or goalie is safer than forward. But asthmatics should get an OK from their doctor before starting any exercise regimen.

Today's asthma therapies are more effective than the number of asthma deaths suggests. The drugs, devices and precautions work. But many patients—or, in the case of children, their parents—don't. "Only about 50 percent of inhaled medication is taken as prescribed," Dr. Henry Milgrom of National Jewish wrote. With such patients in mind, Jonathan Nyce of East Carolina University has created a molecule that strikes at the very core of asthma: the hyperreactivity of the airways. This exaggerated reactivity makes an asthmatic's airways inflame and constrict in response to triggers that don't bother a nonasthmatic's lungs at all. Nyce's "antisense molecule" deactivates the gene that produces the protein responsible for the hyperreactivity. "This could be the first once-a-day asthma medication to treat the underlying cause of the disease," says Nyce. If he's right, managing asthma will give way to curing it.

With ANNE UNDERWOOD in New York and DANIEL GLICK in Denver

Asthma-Proof Your Home

Researchers suspect that eliminating allergens may help prevent asthma. If you already have it, minimizing homegrown triggers will help control the symptoms. A few tips:

Get Rid of the Pets

● That includes dogs, cats, rabbits and guinea pigs. Animal dander is one of the top triggers. If getting rid of pets is non-negotiable, at least keep the critters outside or in noncarpeted areas of the house, such as the kitchen.

Attack the Dust Mites

● It's not dust itself that causes trouble, but these microscopic pests. Carpets, bedding, upholstery and stuffed animals are breeding grounds, so try hardwood floors and chairs. Cover pillows and mattresses with plastic casing. Wash linens in hot water.

Declare War on Roaches

● Not even a dead cockroach is a good one, since their bodies decompose and roach proteins waft through the house. Exterminate first. Then scrub surfaces to eliminate any remains.

Control Indoor Molds

● A dehumidifier is a good start. Zap bathroom mildew and get rid of fabrics in dank basements.



Early Warning Signs

Asthma in young children is not always easy for parents to identify—or even for doctors to diagnose—since it can masquerade as a cold or respiratory infection. Some possible red flags:

Wheezing

● This seems like an obvious tip-off, but two thirds of infants under 1 year old who wheeze with respiratory infections do not become asthmatic. If wheezing recurs, it may be asthma.

Serious Coughs

● Coughing is an inescapable part of life, but persistent hacking—particularly accompanied by wheezing—is a clear warning. Croup can be another signal if the child has it more than once.

Play-Related Problems

● If exercise or playing hard typically brings on a fit of coughing, tightness in the chest or more than the usual panting, asthma may be to blame.

Trouble Breathing at Night

● It's not only bad dreams that spook asthmatic kids. If shortness of breath awakens them at night, suspect asthma.

Family History

● If one parent has asthma, the child is at least three times more likely to have inherited the disease. A strong family history of hay fever and eczema may be another tip-off.

The indoor environment isn't all that has changed since the middle of the century. With the rise of vaccines and antibiotics, people in developed countries have experienced fewer serious childhood infections than ever before. And despite the

obvious benefits, some scientists suspect that an immune system with no serious work to do is more likely to become a renegade army, attacking whatever irritant it encounters. This is still a hunch, but there is evidence to support it. Recent studies suggest that children who contract measles are less likely to develop allergies or asthma. So are those with positive skin tests for tuberculosis. And allergic conditions are rare among the Hiwi people of Venezuela, who often carry hookworm and other parasites. "We have an immune system that evolved to fight parasites," says Dr. Scott Weiss of Harvard Medical School. "Instead it finds dust mites."

A HUNTER-GATHERER lifestyle, complete with fresh air and rampant infections, might save us all from asthma. But researchers are looking for easier ways to tame this modern scourge. The hope is that if kids encounter fewer allergens early in life, they'll be less likely to develop allergic responses. Next year the National Institute of Environmental Health Sciences will launch an elaborate, eight-year study to see if that strategy works. In the first phase, researchers will study 120 households to de-

Getting On With Life

Asthma doesn't rule out band practice or swimming. The warm, moist air around the pool is soothing to the lungs.

termine the best ways to reduce allergen levels. They'll cover mattresses, steam carpets, trap roaches and apply tannic acid to any suspect surface. And once they perfect their technique, they'll enroll 500 high-risk newborns in a trial to gauge the

effects. Half of the babies will be raised in allergen-free zones while the other half will serve as controls, and the scientists will track the kids' asthma rates. "Will we be able to reduce the prevalence of asthma in the community?" asks Dr. Darryl Zeldin, the NIEHS official overseeing the project. "We don't know. Even with our best reducing agents, we may not be able to get the allergen levels low enough that kids aren't sensitized."

Even if allergen-busting can't prevent asthma entirely, there's no question it can help control the condition (chart). Just ask Margarita Nieves, a 31-year-old South Bronx mother. When her son Jonathan developed asthma at the age of 5, his doctor mistook it for a persistent cold and suggested removing the child's tonsils. He had the surgery, but he got no relief until he visited an asthma-savvy community clinic. Besides prescribing proper medications, the doctors there taught the family how to reduce the allergen load in their apartment. "He's got no teddy bears in his room, no rugs, no curtains, no lampshades," says Nieves. "We even got rid of the cat." That may seem a lot to ask of a child, but it's a small price to pay for a pair of working lungs.

With MARY HAGER in Washington and DANIEL GLICK in Denver

Life

May, 1997

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JEREMIAH JAGER HAS TROUBLE BREATHING. SO DO 50 MILLION OTHER
AMERICANS WHO
SUFFER FROM ASTHMA AND ALLERGIES. BUT NEW DRUGS--AND NEW
ATTITUDES--ARE HELPING
RELIEVE

BYLINE: CLAUDIA GLENN DOWLING, REPORTING BY ANNE HOLLISTER

BODY:

Jeremiah Jager, four, loves blue. He drinks blue soda pop, picks the blue marshmallows out of his Magic Stars cereal and grabs the blue crayon. But when he got croupy and turned his favorite color this past winter--lips, cheeks, nose--his mother panicked. It was Jeremiah's eighth visit to the ER. And the scariest. "When he turned blue, I said, 'I want some answers,'" says Cathy, who figured that, like relatives on both sides of his family, Jeremiah was developing asthma. She called the 800 number for Lung Line at the National Jewish Medical and Research Center in Denver. The nurse on the phone suggested that she bring Jeremiah in for an evaluation. "This is going to cost twice as much as our car," says Cathy. "But why give birth to them if you're not going to do all you can for them?"

At three a.m., Kim and Tony Smith were wrapping their daughter in wet towels. Kali's temperature was 105. Pneumonia--again. In her two years of life, Kali had been hospitalized for pneumonia six times. Twice she became cyanotic, like Jeremiah, turning blue from lack of oxygen. The family's out-of-pocket medical expenses were running a third of their income. "We've got to get to the bottom of this," Kim told her husband after Kali had dropped into a restless sleep. At five a.m., Tony, a computer teacher, got on the Internet and punched in pneumonia, asthma, allergies. "National Jewish kept coming up," he says.

Within a week, the Smiths left Thermopolis, Wyo., and the Jagers left Alliance, Nebr., for the long drives to Denver. They had to find out what was wrong with their kids.

Breath is life. In the quiet hours of the night, every parent has listened for the reassuring sound of a child's breathing. But there is an epidemic in America. Allergies, which can develop into asthma, bronchitis, ear and sinus infections, attack some 40 million, double the number 25 years ago. Twice as many people, 15 million, have asthma now, too, at a cost of \$ 6.2 billion a year in missed work and school, in medications and hospital visits. Asthma has become the most common chronic disease of childhood, the No. 1 cause of hospitalization

and absenteeism. The problem is especially severe in the inner city, where rates of asthma emergency room visits and deaths can be eight times the national average. But a soaring rate everywhere, from Atlantic islands to New Zealand hills, has experts mystified. What in the world, they wonder, is going on?

As their children gasp for breath in the middle of the night, drowning on dry land, parents have more pressing questions: What's wrong? Is it my fault? How can I help? Fortunately, there are answers for Jeremiah, Kali and millions of others. A clearer understanding of the mechanics of allergic illness has led to the development of smart drugs to control it and new techniques to treat it. Most important, a sea change in medical practice means patients are no longer passive victims encouraged to leave doctoring to the doctor. The new approach teaches the chronically ill to work with their doctors and families, to take charge of their own lives and their own health, to ask questions and find their own answers.

The Jagers hope to be reassured that Jeremiah's illness is not their fault. As recently as the 1970s, doctors believed that asthma was caused by bad home lives. Leslie Gavin, a psychologist who coordinates the pediatric day program at National Jewish, believes the family is the solution, not the problem. So all the Jagers will be involved in Jeremiah's treatment. The boy's father, Wyley, is away laying track for the Burlington Northern Santa Fe railroad but will be kept abreast of developments in conference calls with his wife and son and doctors. Jeremiah's eight-year-old sister, Ashley, will watch medical procedures and join family therapy. Although the illness isn't caused by family problems, it does cause them. Jeremiah has missed 26 days of school this year because of sickness; Ashley has missed them too, because her mother couldn't drive her.

"What are your goals?" Gavin asks in their first session. "To learn to deal with this," says Cathy. "We'd like to have a normal family life, not to have one child spoiled and one being left out." Cathy is afraid to discipline Jeremiah, because crying makes his breathing worse, and she feels guilty. "Jeremiah's got his moments when he'll test the living fire out of you," says Cathy. Ashley, like most siblings of asthmatics, thinks her brother gets away with too much. It's a familiar story.

For his physical, Jeremiah pulls out the step to the examining table and hops up--he knows the drill. He has been in many doctors' offices for ear and sinus infections, as well as his episodes of croup. His pediatrician has been treating him for asthma, but no one really knows what is wrong with him. Diagnosing asthma is tricky, time-consuming and expensive. Jeremiah's 10 days in Denver will cost \$ 17,000; the Jagers will pay \$ 1,500 before insurance kicks in. A hospital stay can run far more, and managed care companies have come to see that time at National Jewish makes costs in medications and emergency room visits drop dramatically as patients learn to care for themselves.

Pediatrician Allison Kukhta, a toy penguin on her stethoscope, listens to Jeremiah's chest and peers into his nostrils and ears. Scientists have learned that both asthma and allergies are caused by hyperactive immune systems that in turn cause inflammation. In the nasal passages, it shows up as allergic rhinitis, or hay fever; in the sinuses, as sinusitis; on the skin, as hives or eczema; in the intestines, as food allergy diarrhea; in the brain, as migraines; in the lungs,

as coughs or asthma. Since the ears, nose and stomach may be involved along with the lungs in asthma, Dr. Kukhta schedules Jeremiah for lung function tests, a CT scan of his sinuses, reflux tests to see if stomach acids are irritating his airways, and allergy tests to isolate the environmental triggers that may set off his croup. "Has he ever taken aspirin?" she asks. "Been stung by a wasp? Do you have cats and dogs?" Jeremiah has gotten sicker since they moved into a new trailer home last fall. Both Cathy and Wyley are nonsmokers, but Cathy wonders about formaldehyde, about diesel fumes from the nearby railroad yard. When they moved in, the family acquired a Blue Heeler pup and a cat. Cathy has just given away the cat; if it will help, she'll give away the dog, too. "An animal is an animal," she says. "You can't send them to college someday."

That allergies and asthma have increased, even in places where air pollution has decreased (Philadelphia) or is nonexistent (Scotland's Isle of Skye), makes researchers suspect indoor pollution, a miasma of cigarette smoke, pet dander, chemicals, cockroaches and dust. Half of all allergic people in the world react to the feces of dust mites, microscopic insects that eat flakes of human skin. One leading allergy expert blames the rise in rates of allergic illness on television. Concur Lanny Rosenwasser, head of National Jewish's Division of Allergy and Clinical Immunology: "Houses are tighter since the oil shocks of the seventies, and people spend more time inside. It's all converging to make this epidemic."

Like the Jagers, the Smiths want to do everything they can for their child. Kali has sinusitis and eczema as well as recurrent pneumonia, but her parents don't know how to help. To test her for allergic reactions to her own home, her mother and father have brought samples of their dog's fur, their rabbit's, carpeting and wallboard from their modular house, dust from the furnace filter. Before skin testing--still the most reliable gauge--a therapist helps Kali perform the test on a doll. Kali makes the doll cry, but is comforted by controlling the process. "Playing through those things allows them to feel mastery over whatever they're afraid of," says Gavin. On the way to the lab, Kali whimpers, "I'm scared." Replies her mother, "It's O.K. to be scared."

A technician dots Kali's back with liquid from some of the 128 vials in the lab refrigerator: a control dot for a baseline and dots for 24 common allergens--pollens, dust mites, molds, animals, a special mix for Wyoming flora. Then, at top speed, the technician pricks the skin under each dot and weeds pollens and cats. The next day, they test the home samples on Kali's arm. Kali proves highly allergic to the house dust and not at all to the dog, which will cut her mother's laundry load--she has been washing everything the dog touches, seven loads a day. A former schoolteacher, Kim Smith has become a "clean fanatic" since Kali got sick. She vacuums four times a week, using a tightly woven high efficiency particulate air (HEPA) filter in the machine to trap allergens, and also filters the air with a portable unit. She now vows to buy a better filter for the furnace, too, and replace carpeting with wood floors.

It is harder to contend with outdoor allergens like the seasonal onslaught of pollens. Ragweed is in genus *Ambrosia*--food for the gods perhaps, but a plague for the masses. With concentrations of 10,000 grains per cubic meter, Tulsa may be the ragweed capital of America, but since pollen blows hundreds of miles, few communities are safe. Many cope by taking the new generation of antihistamines that work without causing drowsiness. Those with

severe allergies may try to build up an immunity to a particular substance by getting a series of injections with gradually increasing dosages. Such immunotherapy works well against bee stings but less reliably for pollen and animal allergies. And it requires hundreds of shots. A vaccine now being tested holds out hope for ragweed sufferers. Developed and cloned from pollen DNA, the vaccine may provide immunity with only a few shots. "It is an exciting approach," says Dan Rotrosen, chief of the Asthma, Allergy and Inflammation branch of the National Institute of Allergy and Infectious Diseases. But allergies are notoriously mutable, he warns. "Say you turn off someone's response to cats. Are you creating a niche in their immune system where they will just become allergic to something else? No one knows."

The Smiths and the Jagers are in the right place to get a quick education in allergic illness. Tremendous breakthroughs in understanding the immune system are taking place in Denver. In the late 1800s, the city's high elevation and sunshine made it a mecca for people with tuberculosis. National Jewish Hospital, founded in 1899, treated patients with TB until the 1950s, when antibiotics brought the disease under control. The facility then turned its attention to asthma. Children lived in hospital-run facilities, often for years, in the belief that the best way to treat them was by "parentectomy," removing them from their homes. It wasn't until 1966 that asthma was recognized as an immune system malfunction. Researchers in Denver discovered an antibody, immunoglobulin E (IgE), that protects the body from parasites. Sometimes the body reacts to pollens or other allergens as if they were parasites, manufacturing too much IgE. That releases some 25 chemicals, including histamines and leukotrienes, which, in turn, cause inflammation. Today, knowledge of how leukotrienes work is leading to a new class of drugs, more directed than anti-inflammatory steroids. "This is the tip of the iceberg," says National Jewish pulmonologist Sally Wenzel, who helped develop drugs that block the action of leukotrienes (Accolate) and prevent their production (Zyflo). "The more we understand about the inflammatory process, the more we can tailor-make pharmaceutical agents to block parts of it. We keep getting higher up on the chain, so that eventually we may get to the very beginning."

By the time Kali and Jeremiah are old enough to go to school, they will have to learn to manage their own illnesses. The Kunsberg School on the campus of National Jewish is a laboratory for teaching self-care. Asthmatic out-of-towners used to fill the school's classes. Now short-term patients like Jeremiah and Kali use the library or the pool, while a hundred elementary students from the Denver area attend the facility full-time. Almost all are asthmatic; many are from low-income families. After genetic predisposition, the strongest predictor of asthma is poverty. Crowding, indoor and outdoor pollution and inadequate healthcare are likely factors. At one elementary school in New York City's South Bronx, 170 of 791 students have the disease. Such statistics are echoed in Atlanta, Boston, Chicago, San Francisco, Washington, D.C.--and Denver. The asthma rate is 22 percent higher among African Americans than in whites, and four times as many die. The 5,200 asthma deaths in the U.S. each year are tragic. Experts say the disease can be managed by careful monitoring and medication.

School programs nationwide are teaching children to take control of their asthma, rather than allowing it to control them. At the Kunsberg School, two nurses make sure that kids frequently monitor lung capacity by using peak-flow meters as well as medicate for vigorous

activities. In the nurse's office, second-grader Nathan Skinner takes his "pretreat," an inhaled bronchodilator drug that relaxes the muscles in the airways of his lungs, before he heads to gym class. Physical education is a major component of the school's program. Often, for fear of attacks, children with asthma don't get enough exercise. Exercise is one of the major asthma triggers, but it's also critical for better lung function and healthy growth.

Gym teacher Jim Gianvito wants kids to enjoy themselves, pace themselves--and take their meds. He was appalled at a recent study showing that most children don't take their asthma medications as regularly as they claim they do. "Jim says we have to take our medicine, because if we don't, we'll die," Nathan told his mother one day. At first she was horrified, but she sees that since going to Kunsberg her son has been able to run around like a normal kid, playing ball and swimming. Swimming is particularly good for asthmatics because moist air and breathing control help the lungs. No one quite knows why 20 percent of the U.S. Olympic swim team has asthma. Gold medalist Amy Van Dyken, a Colorado native who was diagnosed at National Jewish at 18 months, urges children with asthma to get exercise, pretreat and listen to their bodies rather than to well-intentioned but inexperienced adults who tell them they seem fine: "That's the thing that kills asthmatics--you look O.K."

After almost a week at National Jewish, the Jagers are feeling more confident. Jeremiah will happily blow into a peak-flow meter and work on gross motor skills with a physical therapist. Not all the tests are as pleasant. His mother coaxes him to drink peach-flavored barium so a fluoroscope can measure gastro-esophageal reflux. "We're going to put your tummy on TV and watch your food go down," she tells him. "It's yucky," says Jeremiah. "Do you want ice cream?" Cathy pleads. He screams. She helps hold him so the doctor can force a tube down his throat. The radiologist looks at the scope: "The muscles between his esophagus and stomach don't function properly. The acid goes into the trachea, irritates the airways and causes inflammation." Afterward, Cathy lets Jeremiah's sister taste the barium and asks, "Is it all fun?" Cathy thinks it is good for Ashley, jealous of the attention her brother gets, to see what he has to go through. "No," says Ashley. "That really did scare me, Mom. I heard him screaming."

Finally, Jeremiah takes the methacholine challenge, the best indicator of whether someone has asthma. A patient breathes increasing concentrations of the chemical irritant until showing a reaction. Kukhta tried to give Jeremiah the test earlier, putting the mask on his teddy bear first, but he refused to cooperate. Now, while he is sedated for another test, they try again. They keep at it, upping the dose. No reaction. "It wasn't an ideal meth challenge," says Kukhta, "but we don't think Jeremiah has asthma."

It's Kali's turn. "No shots, no owies, no pokes," her mother promises. The child breathes into the mask. After the dosage is upped, her father, Tony, has to leave the room with symptoms, just from the leakage. He has allergies and a brother with asthma but has never had an attack before. He leans on the windowsill and stares at the Rockies. "Genetically, I gave her all this stuff," he says. Kali has responded to the methacholine. She has asthma, a moderate case.

After all the tests, the two mothers compare notes. "We think it's the reflux causing the

breathing problem," Cathy reports to Kim. Says Kim, "Oh, you're finding answers too." Jeremiah and Kali both have sinusitis. Doctors prescribe nasal sprays, and nurses teach them to do nose washes with a cupful of water, a half teaspoon of salt and a pinch of baking soda. Kali will take a drug to prevent asthma attacks and two baths a day for eczema. Jeremiah will take drugs for reflux and avoid spices, tomatoes, caffeine and other heartburn foods. The head of his bed will be elevated for sleeping. "This has been the most wonderful thing," says Cathy. "We have found more answers in one week than we have in three years. Simple things I can do at home."

As part of the home-care plan provided to Jeremiah's parents and pediatrician, doctors give Cathy a nebulizer and medication normally used in hospitals for an emergency. "If he's cyanotic, you want to be able to get air in," says Dr. Kukhta. "We gave Mom that bit of power." By the last day, when older sister Ashley demonstrates breathing steam from the nebulizer, Jeremiah insists, "I do it, I do it!"

Kali is acting less like an invalid. "Whenever she wanted to control the outcome of something, she used to say, 'I'm sick. Hold me,'" says Kim. "After all those tests, she says, 'But I'm not sick, I'm better.'"

Kali and Jeremiah will come back to Denver for follow-up visits in three months, but they are already doing better. Cathy gave away the dog and had the house professionally cleaned. Jeremiah has been sleeping through the night for the first time in years, and his sister has been much gentler with him. Kali is no longer clingy, and the dark allergic shiners under her eyes are gone. Kim and Tony Smith and Cathy and Wyley Jager now know what to do if their children ever turn blue again. That sensation of powerlessness is gone. They too can breathe easier.

GRAPHIC: COLOR ILLUSTRATION: ELECTRONIC ILLUSTRATION BY STEVE WALKOWIAK, COVER,

Breathe Easy If you are one of the 50 million Americans with ALLERGIES or ASTHMA, now you can take control of your life --NEW DISCOVERIES, --SMARTER DRUGS, --BREAKTHROUGH THERAPIES, Sara Hogenson, 7, Asthma Sufferer [Photomontage

of Sara Hogenson and clouds]; **COLOR PHOTO: PHOTOGRAPH BY RICH FRISHMAN, COVER,**

[See caption above--Sara Hogenson]; **COLOR PHOTO: NAVASWAN/FPG, COVER,** [See caption above--clouds]; **COLOR PHOTO: PHOTOGRAPHY BY RICH FRISHMAN,** At an innovative center for respiratory diseases, Jeremiah undergoes a test to find out why, at age four, he has been in the ER eight times. [Jeremiah Jager with tube taped into his nose]; **COLOR ILLUSTRATION: PHOTOGRAPHY BY RICH FRISHMAN,**

[Photomontage of Nathan Skinner vacuuming, using nebulizer and playing clarinet in house]; **THREE COLOR PHOTOS: PHOTOGRAPHY BY RICH FRISHMAN,** Jeremiah and Fire

Bear (below, left) wait for a test. The boy's back is dotted with solutions of

common allergens--pollens, molds, dust mites--to see if he gets raised bumps. (He doesn't.) Half of us are at genetic risk for allergies, but they may not develop without repeated exposure. [Jeremiah Jager holding teddy bear; People dotting solutions onto Jeremiah Jager's back; Jeremiah Jager and woman looking into mirror]; COLOR ILLUSTRATION: PHOTOGRAPHY BY RICH FRISHMAN, [Photomontage of cats around Molly Holka in room]; THREE COLOR PHOTOS: PHOTOGRAPHY BY RICH FRISHMAN, In an art therapy class (below, left) Kim Smith draws with her daughter, Kali, two. Most sick children are suspicious of medical procedures, but play therapies help Kali through her stay at National Jewish. After dad Tony helps her do a nasal wash for sinusitis (center), she says, "I did it!" [Kim Smith and Kali Smith drawing; Tony Smith, Kali Smith, and Kim Smith; Tony Smith, Kali Smith, and Kim Smith]; COLOR ILLUSTRATION: PHOTOGRAPHY BY RICH FRISHMAN, [Photomontage of children using spacers to take their asthma medication; Michelle Freas helping students with asthma medication]; TWO COLOR PHOTOS: PHOTOGRAPHY BY RICH FRISHMAN, Bedded down in a wagon the center uses to transport kids, Jeremiah heads for a CT scan. Doctors want to see whether he has sinusitis and check the extent of his disease. [Woman holding stethoscope on Jeremiah Jager in wagon; Jeremiah Jager entering CT scanner]; THREE COLOR PHOTOS: PHOTOGRAPHY BY RICH FRISHMAN, Cathy Jager tries to hold a struggling Jeremiah so EKG electrodes on his chest can monitor his heart rate during sedation. The process doesn't hurt, and Cathy comforts herself that after the drugs he won't be able to remember the experience. "It's tough," she says. "You try to hide the tears and cry later." [Cathy Jager holding crying Jeremiah Jager]; COLOR PHOTO: PHOTOGRAPHY BY RICH FRISHMAN, "You're a big boy, Jeremiah," says Kali, as the children play in the hospital's toy-filled pediatric unit. Jeremiah's arms are in temporary restraints so he can't remove the tube through his nose measuring stomach acid reflux over a 24-hour period. [Kali Smith kissing Jeremiah Jager's arm restraint]; COLOR ILLUSTRATION: PHOTOGRAPHY BY RICH FRISHMAN, [Photomontage of Amy Van Dyken using from inhaler]

LANGUAGE: ENGLISH

LOAD-DATE: May 7, 1997

ABC NEWS

SHOW: ABC GOOD MORNING AMERICA (7:00 am ET)

MAY 20, 1997

Transcript # 97052016-j01

TYPE: INTERVIEW

SECTION: NEWS

LENGTH: 1984 words

HEADLINE: RISING ASTHMA THREAT

GUESTS: Dr. NORMAN EDELMAN

BYLINE: CHARLES GIBSON

**HIGHLIGHT:
ALA ASTHMA GUIDE**

BODY:

CHARLES GIBSON, Host: An estimated 15 million Americans, one third of them children under 18, suffer from asthma. And the problem is getting worse. From 1982 to 1994, the rate of asthma among children rose 72 percent. Well, now the American Lung Association has published its first-ever reference guide for parents of children with asthma, as well as allergies, to help them manage those diseases. The book was written by Dr. Norman Edelman, who's a consultant for the association and the dean of the School of Medicine at the State University of New York at Stony Brook. And he is joining me this morning. Good to have you with us.

Dr. NORMAN EDELMAN, State University of New York, Stony Brook: It's good to be here, good morning.

CHARLES GIBSON: That's a very dramatic number, 1982 to 1994, 72 percent increase of children with asthma. Do we know why?

Dr. NORMAN EDELMAN: No, we don't. There are several theories, and most of them have to do with indoor exposure to air pollution, which has gone up, we think. We think tight homes and the lack of ability to clean houses of everything from cigarette smoke to dust might be responsible. Another idea may have to do with daycare. Many more children now are put into daycare early in life, and scientific studies show they're more likely to catch cots

and other viral infections, and that may predispose to asthma as well.

CHARLES GIBSON: For the parent, early signs that you have a child that may have problems with allergies or asthma. What does a parent look for?

Dr. NORMAN EDELMAN: Mostly, a parent looks for difficulty in breathing, and that may be an unexplained cough every night, that may be a child who gets short of breath more quickly than his playmates, certainly wheezing with a cold is a sign. Sometimes children have a hard time expressing the fact they're short of breath, and it may simply mean a child is frightened or agitated inexplicably, time and time again. All of those things require looking into.

CHARLES GIBSON: You should probably give a very quick definition of what we mean. Allergies is a response to some kind of a -- well, you do it for me.

Dr. NORMAN EDELMAN: Well, allergy is a response to something in the environment that triggers an immune reaction. It sets up a reaction that has antibodies and cells in the body fighting this invader. Now, the reaction is important if the invader is an infecting organism like a bacteria, but the action -- the reaction works against you if it's an allergen, and it sets up an inflammatory response. Allergies and asthma are inflammatory responses.

CHARLES GIBSON: And asthma's particularly an inflammatory response in the lung.

Dr. NORMAN EDELMAN: That's right.

CHARLES GIBSON: All right. Now, what does a parent do to manage these things? Do you try to prevent them in some way, to remove the causative effects?

Dr. NORMAN EDELMAN: The important thing for parents to do, and what we try to point out in our book, is to take charge, just not to let asthma happen, but to take control. Parent starts by controlling the environment, getting rid of dust mites by encasing mattresses and pillows, keeping the house dust free, prohibiting cigarette smoke. Furry pets may have to go. You may have to find a new home for a cat or a dog.

CHARLES GIBSON: And you can test for the causative effects, right?

Dr. NORMAN EDELMAN: Children can be tested to determine what they're allergic to, and some children will benefit from being treated for -- being treated for the allergies.

CHARLES GIBSON: Does it -- can it go away? Does it go away in many cases? Do children outgrow it?

Dr. NORMAN EDELMAN: In about 30 percent of children, when they reach late adolescence, they will get substantially better. But the tendency to asthma doesn't go away, the hyperactivity of the airways remains, and it may come back in the 20s or the 30s with a bad cold or with some other irritant to the lung.

CHARLES GIBSON: Also a study now that shows that there's such a greater incidence of asthma in minority children.

Dr. NORMAN EDELMAN: Yes, especially in minority children in inner cities, and it seems to us that, for the most part, it's the conditions of living rather than the minority status that does it. Children living in crowded apartments are exposed to lots of infections, dust. Now we know cockroaches may be an important allergen that triggers asthma, and that would be especially important in the inner city.

CHARLES GIBSON: Dr. Edelman, it's good to have you here. Also very important, you've got checklists in the book, I know, for things that parents actually can do specifically if they have children who suffer from this. Thanks for being with us. I appreciate it.

Dr. NORMAN EDELMAN: You're welcome, my pleasure.

CHARLES GIBSON: We take a break. Good Morning America will continue.

(Commercial Break)

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NBC News Transcripts

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HEADLINE: TODAY'S HEALTH, ALLERGY RELIEF TODAY; DR. ART ULENE
DISCUSSES ASTHMA

ANCHORS: MATT LAUER

BODY:

JOE WITTE, announcer: TODAY'S HEALTH is brought to you by...

MATT LAUER, co-host:

On TODAY'S HEALTH, more of our series on allergy relief, and a look at a growing and worrisome problem, asthma. Dr. Art Ulene has helpful advice for people who have asthma. Art, good morning.

Dr. ART ULENE: Good morning, Matt. It's a very serious problem. Today, nearly 15 million Americans have asthma, and this year more than 5,000 will die because of it in spite of the fact that we have more and better drugs for treating asthma than ever before. Everyone agrees that the asthma death rate could be lowered if we diagnosed the problem earlier and treated it better.

Unidentified Man #1: Go. Blow out. Blow, blow, blow, blow, blow!

Unidentified Woman #1: Blow, blow, blow, blow, blow, blow, blow!

Dr. ULENE: This device measures the amount of air a person can rapidly force out of the lungs. A low reading may indicate that asthma is narrowing the airways, restricting the ability to breathe. Throughout May, the American College of Allergy, Asthma and Immunology has offered free screenings at malls and urban hospitals. Of the 90 people screened on one Saturday at New York's Roosevelt Hospital, 75 percent tested abnormally low. Not totally surprising, since asthma rates are highest among inner city residents, where as many as one in five children are affected.

Unidentified Woman #2: He's always wheezing, coughing, so I was a little worried.

Dr. ALKIS TOGIAS (Johns Hopkins Medical Center): Asthma mortality has

increased tremendously in this country, it has doubled over the past 15 years. And this can be seen very clearly in urban populations, especially in the 15- to 25-year-old ones.

Dr. ULENE: This despite the fact that air pollution levels in most cities are much lower than they've ever been. One factor that may be responsible for the increased incidents of asthma is the increased amount of time people spend indoors in sealed homes and buildings, breathing and rebreathing air that is filled with the very allergens that trigger asthma attacks, dust mites and cockroaches and their leavings, and mold spores.

It is hoped that screening programs like this one will identify those people earlier, get them started more quickly on appropriate treatment, and reduce their subsequent risk of illness and premature death.

The key words are appropriate treatment, which many people with asthma are not getting. Studies show that many emergency hospitalizations and deaths could be avoided if all doctors followed the new guidelines for treating asthma. And if all patients took better care of themselves between visits to their doctors.

LAUER: When you talk about these new guidelines, what exactly is different about them?

Dr. ULENE: Well, they're based on a better understanding of what asthma really does to the lungs. We've gra--got a graphic that will help us with this. We used to think that people with asthma had wide open airways that went into spasm from time to time because of allergies and stress, choking off the flow of air. So the treatment focused primarily on drugs that broke the spasm and dilated the airways. The true picture is more like the one on the right. In addition to spasms, people with asthma have persistent, smouldering inflammation that thickens the walls of their airways, constantly narrowing the diameter of their breathing passages. If that inflammation is not treated properly with anti-inflammatory drugs, then the dilating drugs become less and less effective. And Matt, what you end up with is a life-threatening crisis.

LAUER: That difference is dramatic. Though, if these new guidelines are so important, why aren't more doctors following them?

Dr. ULENE: There's no good excuse. Unfortunately, many doctors are behind the times. And in fairness, I must say that many patients are resistant to taking drugs at a time when they're not having symptoms, even those that would prevent the attacks.

LAUER: My mom has had asthma her whole life, she uses one of those inhaler devices. What are the drugs that are recommended for people now?

Dr. ULENE: Well, except in the very mildest cases, we're recommending ongoing daily use of the anti-inflammatory drugs, either inhaled steroid drugs or inhaled cromolyn type drugs. The bronchodilating drugs should be used only to treat breakthrough symptoms, and the experts tell us that if you need more than three doses per week of bronchodilating drugs, you're not controlling the inflammation properly, and the answer is not to use the bronchodilators more often, but to get a better grip on the inflammatory process.

LAUER: Yeah, when you talk about using those dilaters more often, I know my mom's had concerns about side effects from some of the medications over the years.

Dr. ULENE: There are remarkably few side effects with these inhaled drugs. People are afraid because they hear the name steroids, but this is not like taking steroid pills. They're very tiny doses, they're applied directly to the lungs themselves, they're remarkably safe.

LAUER: A second ago we were looking at the pictures of the lungs and you were talking about an allergy could trigger a spasm. Is asthma always caused by an allergy?

Dr. ULENE: Well, the experts disagree on this. Some experts think that about 50 percent of cases are allergic. The other experts say no, they're all allergic, we just haven't found the allergies that are causing them in the other half. The basic underlying treatment is the same, control the inflammation, treat the symptoms only occasionally.

LAUER: Tomorrow, we wrap up this series, which has been a great one, what are we talking about?

Dr. ULENE: We're going to be talking about over-the-counter and prescription therapy, a whole rational plan for preventing allergy problems.

LAUER: Art, thanks, as always.

And don't forget, we are offering a videocassette of the entire allergy relief series. If you'd like to order a copy, you can call 1 (800) 420-7755. The tape will cost 19.95, plus shipping and handling, and it will be sent to you in about two weeks.

Coming up next, Caroline and John F. Kennedy Jr. And then a little later on TODAY, the secrets behind the dinosaurs of "The Lost World," and how to take the pain out of hosting an outdoor dinner party in the summer. But first, these messages.

TO: Tom Freedman

FROM: Neera Tanden

RE: Asthma

The Problem:

There has been a huge increase in asthma over the last decade. It is a particular problem for children. While there has been a great deal of speculation as to the cause of the dramatic increase, no one can figure out why it is happening. The speculation runs the gamut from environmental pollution to tobacco to urban violence.

Asthma is actually a problem throughout the developed world; people are suffering asthmatic reactions to a range of allergens that once caused little trouble. And basically, although scientists are learning more about asthma, the explosion is still largely a mystery.

The Facts

- Asthma now afflicts about 14.6 million Americans.[Newsweek, 5/26/97] This is **twice** the number it was 25 years ago.[Life, 5/97]
- The number of American asthmatics grew by 6.2 million between 1984 and 1994 -- an astonishing **74%** increase. [San Francisco Chronicle, 7/3/96]
- There are now more than 5 million children afflicted with asthma - 1 in 13 children in 1993, which is 79% more than in 1982.[LA Times, 10/27/96]
- Asthma costs \$ 6.2 billion a year in missed work and school, in medications and hospital visits.[Life, 5/97]
- Asthma has become the most common chronic disease of childhood, the No. 1 cause of hospitalization and absenteeism.[Life, 5/97]
- Asthma is especially severe in the inner city, where rates of asthma emergency room visits and deaths can be eight times the national average.
- The United States has an overall asthma rate of about 5 percent. But the rate is 8.4 percent in New York City, and it can reach 25 percent among kids in the poorest urban neighborhoods.

The Interest:

The dramatic rise in asthma has been called an "epidemic," "pandemic," and "crisis" in recent media stories.

1. Newsweek, "The Scary Spread of Asthma" (Cover Story), 5/26/97
2. Good Morning America
3. The Today Show
4. Life Magazine, "An Epidemic of Sneezing and Wheezing," 5/97
5. Front page: LA Times, San Francisco Chronicle, NY Daily News

The Tie-In

Asthma is related to three policy proposals the Administration is currently pushing. Generating interest in fighting asthma will only help increase support for these proposals.

1. New EPA regulations --

We have used asthma as a major justification for our plan to increase environmental regulations. In fact, during the briefing on the new standards, Katie McGinty said:

"[T]he President is strengthening current smog standards that we know seriously exacerbate asthma conditions and other lung ailments, and that particularly affect children. Asthma is one of the leading causes of children's hospitalization and, following from that, a leading cause of children missing out on school days. So the step -- the decision the President made today advances our commitment to clean air in this country and allows us to take important gains on a pollutant that we know causes premature death and other pollutants that we know dramatically exacerbate lung conditions and particularly asthma."

We are and should continue to highlight the fact that we are proposing these regulations simply to lower the number of children who suffer from asthma.

2. Expanding Health Care for Children

Because asthma is the number one chronic disease in children and the number one cause of hospitalization, it is a big reason why we need to insure these children whose parents are working but cannot afford health care. If asthmatic children have regular access to medical care, their asthma can be regulated and controlled, thereby lessening the number of emergency room visits.

3. Tobacco

Smoking - especially by parents near their children - can cause asthma. And of course, asthmatics suffer greatly from those who smoke around them because their smoke can often trigger an attack.

The Proposals

1. Researching the Causes of Asthma. We basically do not know why rates of asthma are climbing - but we should. As we did with breast cancer, we can marshal federal resources to study the causes of asthma as well as new treatments. Our funding of breast cancer research was popular with a certain constituency; in a like manner, parents may similarly support an effort to find the causes of asthma.

2. Launching a National Education Campaign on Asthma. A national education campaign would do some good here. Asthma is one disease in which educating parents about the symptoms and some of the instigators of attacks would alleviate some of the problem. In fact, New York City is already experimenting with ways to educate parents of asthmatic children by simply explaining to them that they need to get rid of rugs, stuffed animals, etc.

3. Grants to schools for medical equipment for asthma management that will be available for use in school nurses' offices. Arizona is starting such a program.



Health

Asthma

06/03/97 - 12:35 AM ET - Click reload often for latest version

Children's asthma, costs rising rapidly

Annual health care costs for children with asthma are more than double the total for non-asthmatic youngsters, shows a study out Monday.

With incidence of the disease steadily rising, and no key breakthrough in sight, "it's clear an increasing proportion of pediatric health care dollars will be going into asthma care," says Paula Lozano of University of Washington Medical School, Seattle.

Her one-year report of 72,000 children in a Seattle HMO shows an asthma diagnosis adds an average of \$615.17 more per child every year. The report, in Pediatrics, finds asthmatics' costs were \$1,060.32, compared with \$445.15 for children without the disease.

About 5 million U.S. children have asthma, the most common chronic illness of childhood. Rates rose 73% between 1982 and 1994.

Experts don't know what's causing the surge. One possible reason: American kids are spending more time indoors, where asthma-triggering dust mites and other allergens lurk.

Also, our skill at knocking out childhood infectious diseases may have an ironic downside: Some infections curtail an inflammatory molecule linked to asthma.

Most patients have a genetic vulnerability to the disease. A promising new line of research involves identifying asthma genes and creating a gene therapy, says Marshall Plaut of the National Institute of Allergy and Infectious Diseases. But treatments could be years away, if they emerge at all.

New federal guidelines emphasize using state-of-the-art drugs, such as inhaled steroids. "Some newer medications are underused," says Plaut, despite evidence they reduce asthma severity and costs.

By Marilyn Elias, USA TODAY

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USA TODAY NEWS • SPORTS • MONEY • LIFE • WEATHER • FEEDBACK • SEARCH • INDEX

THE FALL OF A DICTATOR: WHAT NEXT FOR ZAIRE?

Newsweek

May 26, 1997 : \$2.95

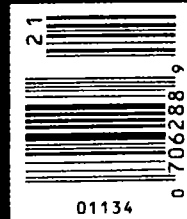
The
Scary
Spread
of

Asthma

And
How to
Protect
Your
Kids

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NON-CIRCULATING

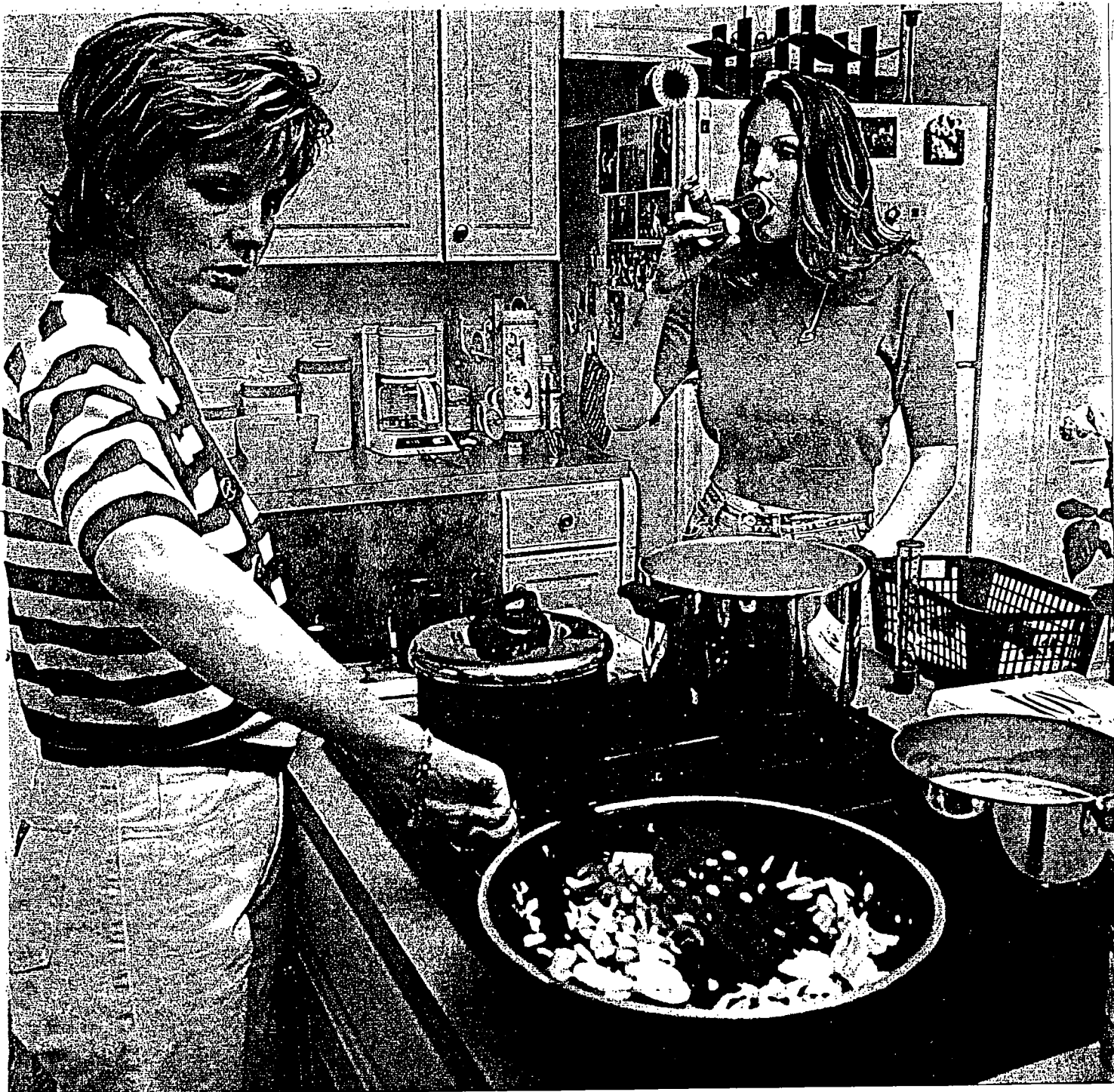


LIFESTYLE

Asthma is a scary fact of life for millions. Can it be beaten?

BY GEOFFREY COWLEY
AND ANNE UNDERWOOD

Why Ebony Can't Breathe



had to turn off the ventilator," his mother recalls. "My baby died on Christmas Day."

Tragedies like Antonio O'Bryant's are still mercifully rare. But as anyone with school-age kids can attest, his daily life was exceedingly common. In the course of a few decades, what was once an obscure allergic syndrome has emerged as one of the nation's most vexing health problems. Asthma now afflicts about 14.6 million Americans, including 5 million children. The number of sufferers has jumped by 61 percent since the early 1980s, according to the American Lung Association—and the death toll has nearly doubled, to 5,000 a year. Fifth graders now monitor their air-

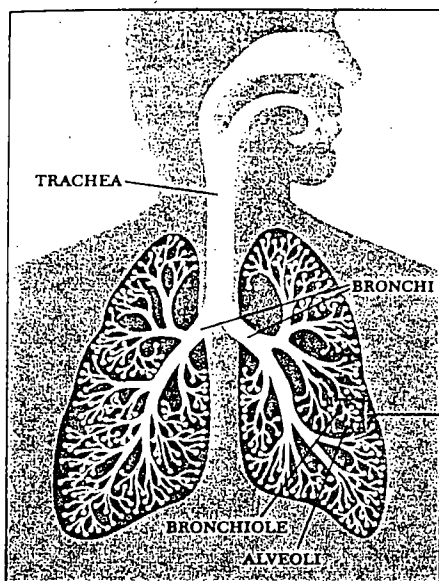
Please Pass the Inhaler

Asthma activist Nancy Sander and her daughter Brooke are both prone to attacks. But proper medication keeps them breathing easy.

flow rates in liters per minute, while their parents swap information and moral support on the Internet. And none of this is unique to America. Throughout the developed world, people are suffering asthmatic reactions to a range of allergens that once caused little trouble. And though scientists are learning more about asthma, the explosion is still largely a mystery. "Why are we becoming more allergic?" asks James Wedner of the Washington University School of Medicine in St. Louis. "Ten allergists will give you 10 different answers—maybe 15 or 20. No one really knows."

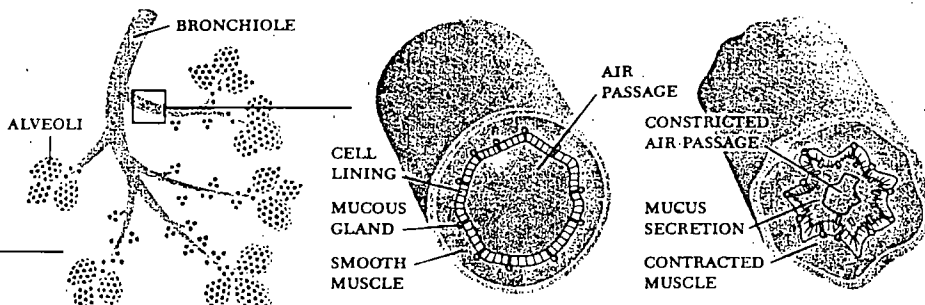
The dynamics of asthma are no mystery.

The trouble starts when the immune system becomes sensitized to some allergen, usually through heavy exposure in early life, and starts treating it as a threat. Whenever the irritant enters the body, the immune system's B cells start churning out antibody molecules known as IgE. The antibodies then attach themselves to mast cells, which respond by spewing out histamine and other inflammatory chemicals. If this cascade is confined to the upper airways, the victim may suffer no more than a runny, itchy nose. The real trouble starts when the reaction extends down into the lungs. When small airways called bronchioles get doused with histamine, they swell and fill with mucus (chart). And as those passages narrow, the consequences can range from a tightness in the chest to suffocation. "Try running in



Anatomy of an Asthma Attack

When the respiratory system is working properly, the air we breathe passes in and out of the lungs through a network of airways (left). But for people with asthma, even a minor irritant will set off an immune response that can shut down the airways.



Bronchiole network: Air is distributed throughout the lungs via small airways known as bronchioles.

Healthy bronchiole: When they're clear and relaxed, the small airways accommodate a constant flow of air.

Asthmatic bronchiole: During an attack, mucus and tight muscles narrow the airways and interfere with breathing.

SOURCE: NORMAN EDELMAN, M.D., "FAMILY GUIDE TO ASTHMA AND ALLERGIES"; DIAGRAM BY CHRISTOPH BLUMRICH—NEWSWEEK

place for two minutes," says Nancy Sander, president of the Allergy and Asthma Network/Mothers of Asthmatics in Fairfax, Va. "Then hold your nose and try breathing through a straw in your mouth. That's what an asthma attack feels like."

Almost anything can act as an irritant. Toddlers who live with at least one smoker are nearly three times as likely to wheeze as kids in smoke-free homes, but nonsmokers' children also suffer. Dust mites, those tiny creatures that thrive in bedding, upholstery and carpets, spike their droppings with a highly allergenic protein. So do cockroaches. Molds and pollens cause a lot of asthma in humid environments. But people who flee the Everglades for Arizona don't end up suffering less asthma. They just find something else to react to, like the dander from their pets. Liz Aplin, a 47-year-old art teacher in Chattanooga, Tenn., is so sensitive to the dust from her pastels that she wears a mask to class. "Show me the dust from 100 houses in a community," says Dr. Thomas Platts-Mills of the University of Virginia's Asthma and Allergic Diseases Center, "and I'll tell you what people are allergic to."

WITH THE RIGHT MEDICINES, even a severe asthmatic can make the condition manageable (page 62). But the greater challenge is to prevent it. Clearly, something is making us ever more sensitive to allergens. The question is, what? Genes clearly play a role in the disease. Children with one asthmatic parent contract asthma at three to six times the rate of other kids,

says Dr. Fernando Martinez of the University of Arizona's Respiratory Sciences Center. Those with two asthmatic parents have 10 times the risk. And identical twins are more likely than fraternal twins to share allergies. But the gene pool hasn't changed dramatically in the past few decades. And as Wedner observes, "there is no gene that says, 'If you have this, you will wheeze.' Something in the environment must have changed."

Asthma isn't usually a problem in preindustrial societies, regardless of their natural surroundings. But when development sets in, asthma quickly follows. Dr. Hal Nelson of Denver's National Jewish Medical Center cites a 1991 study of children in Zimbabwe. Only one in 1,000 of those living in rural villages suffered from obstructed airways. Yet asthma plagued one in 17 (5.8 percent) of those in a prosperous section of the capital, Harare. Researchers have documented the same pattern among Aboriginal people in Kenya, South Africa,

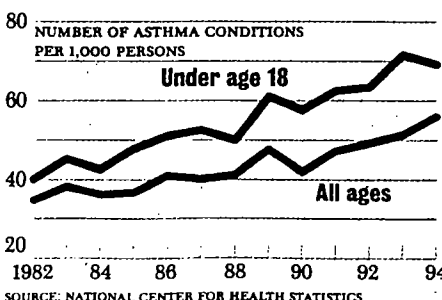
Papua New Guinea, New Zealand and Australia. Even within Western societies, increasing urbanization seems to make people more and more vulnerable. The United States has an overall asthma rate of about 5 percent, says Dr. Irwin Redlener of New York's Montefiore Medical Center. But the rate is 8.4 percent in New York City, and it can reach 25 percent among kids in the poorest urban neighborhoods.

If asthma is a disease of civilization, the question becomes: what aspects of modern life are to blame? Air pollution might seem an obvious suspect. As Dr. Norman Edelman notes in the American Lung Association's new "Family Guide to Asthma and Allergies" (238 pages, Little, Brown, \$19.95), ozone, diesel fumes and exhaust particles can all irritate the airways. Hospital admissions for asthma often rise 20 to 30 percent during periods of severe air pollution. But outdoor air pollution can't be driving the asthma pandemic, because it has improved in recent decades. Londoners suffered horribly from bronchitis during the 1950s, when the city was blanketed by noxious industrial fog. But asthma arrived after the worst of the pollution was gone. And Martinez has found that east German children enjoy lower asthma rates than west Germans, despite pollution levels that are often 10 times as high.

If outdoor air isn't to blame, could indoor air be playing a role? There's no question that modern urban life entails large doses of the stuff. Most Americans now spend at least 90 percent of their time indoors, according to the Environmental Protection Agency—and when we're not locked in buildings, we're usually sealed in vehicles. During the 1960s, American kids spent an

A Growing Menace

Asthma rates have increased in every age group, but kids have seen one of the largest jumps—73 percent from '82 to '94.



average of three hours a day playing outdoors. But that was before kickball gave way to PCs, VCRs and videogames. Today's children average only two hours outside. That's biologically abnormal behavior, says Platts-Mills, and it brings an array of medical consequences. "In every community where asthma has increased," he says, "there has been a decrease in overall exercise that correlates strongly

with the rise of indoor entertainment." While spending more time indoors, we have turned our dwellings into havens for dust mites and other allergens. Until World War II, most homes had wood floors with scatter rugs. "If your family got a carpet, you thought that was upscale," says Linda Ford, president-elect of the American Lung Association.

"Now carpets are common and wood floors are upscale." Laying down carpets was just the beginning. We also invited our pets inside to shed on them—a practice that prewar Americans would have found strange. And just as the mix was getting rich, we installed airtight windows to save energy.

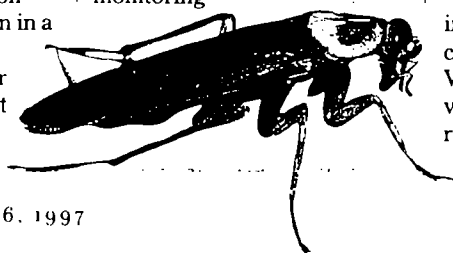
Yearning to Breathe Free

With new drugs and devices, asthmatics avoid attacks—and even play soccer. BY SHARON BEGLEY

BACK IN THE DARK AGES of asthma care—like five or so years ago—"managing" one's asthma meant scrambling for a puff of bronchodilator as breathing suddenly became as arduous as sucking peanut butter through a straw. But lately doctors have been abandoning this "treat as needed" approach in favor of a preventive one. "The paradigm has shifted from being reactive to being proactive," says Dr. Stan Szefler of National Jewish Medical Center in Denver. And while today's "preventive" treatments still target the symptoms of asthma (inflammation and constriction of the bronchial tubes), scientists are in hot pursuit of drugs that target the causes: the hyperactivity of those airways. Until the new drugs arrive, physicians are trying to educate patients to do the most with existing therapies.

The first step in preventing attacks is to eliminate "asthma triggers" (sidebar). To identify what triggers inflammation and bronchial constriction in a patient, doctors can perform a simple skin test for allergic reaction. The next step is to determine how

severe the disease is. Someone who experiences no symptoms other than tightness in the chest after, say, sprinting for the schoolbus has a mild case and can usually get away with just a puff of a bronchodilator before exercise. But an asthmatic who regularly wheezes needs a veritable toolbox of drugs and devices, starting with the inhaler. Now almost as common in kids' backpacks as lunch money, inhalers hold a cartridge that, when pressed, releases a mist of medication. Another gadget is a "peak flow meter" that measures the rate at which the lungs expel air into a tube. That figure reveals how open the airways are and thus whether the patient needs a dose of medicine, and if so which one. (Depending on the severity of the disease, an asthmatic might use the monitor up to three times a day.) In some models a memory chip records the readings, and every month the patient downloads the numbers into a doctor's computer via a phone jack. By monitoring



Dust Buster

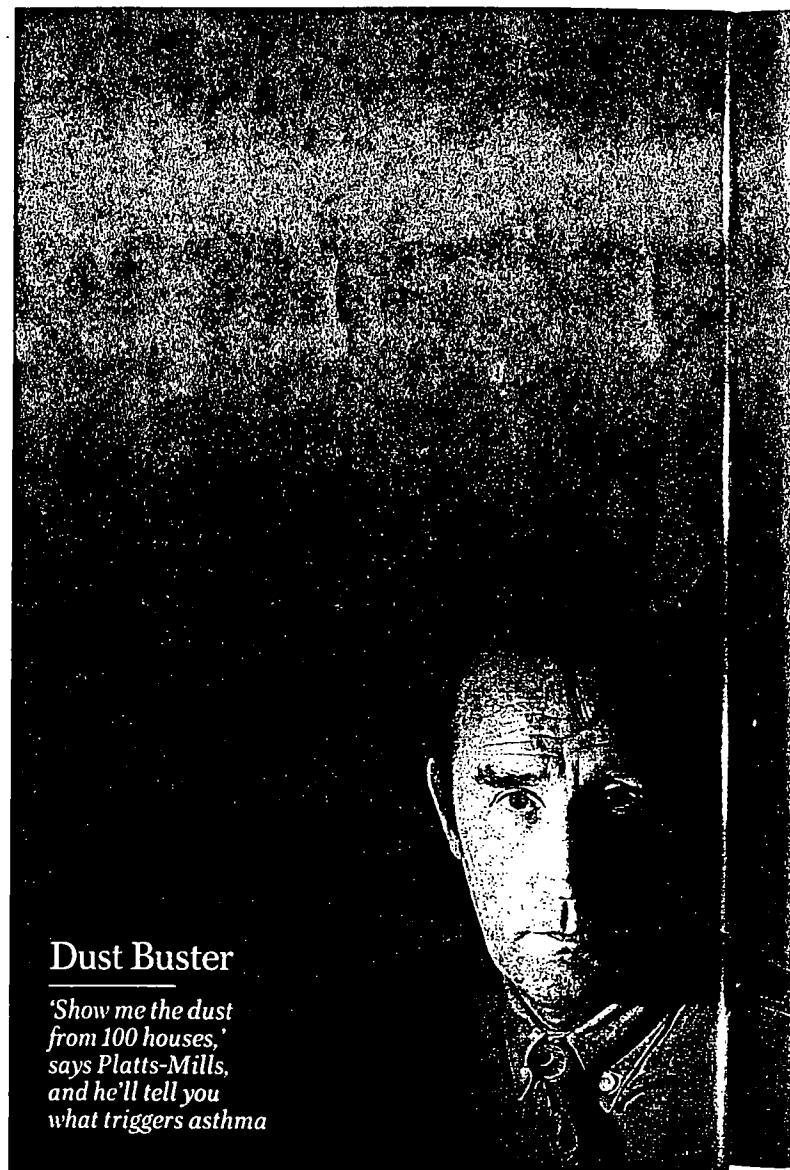
'Show me the dust from 100 houses,' says Platts-Mills, and he'll tell you what triggers asthma

the data, physicians can fine-tune treatment.

The drugs they prescribe include controllers and relievers. Relievers, such as the inhalant albuterol, sold as Ventolin and Proventil, relax smooth muscles in the airways within seconds. They're emergency measures.

Controllers include anti-inflammatories, such as corticosteroids, marketed as Vanceril, Azmacort and Flovent. Inhaled corticosteroids reduce inflammation in several

ways, including by interference with lung cells' secretion of "cytokines." These substances inflame the airways, causing swelling and hence troubled breathing. Another anti-inflammatory, cromolyn sodium (marketed as Intal), is less effective than steroids but is often prescribed for children because it is so safe. The other class of controllers is bronchodilators, like salmeterol and theophylline. They relax the lungs' smooth muscle



"The number of air changes per hour has plummeted since the 1970s," says Dr. Daniel Rotrosen of the National Institute of Allergy and Infectious Diseases.

The homes in asthma-plagued inner-city neighborhoods aren't known for their plush carpets or draft-free windows, but they have an even greater disad-

vantage: the cockroach. An exterminator can usually banish cockroaches from a free-standing single-family home, but the pests are virtually inescapable if you live in a poorly maintained and densely populated high rise. In a study published this month, researchers led by Dr. David Rosenstreich of New York's Albert Einstein College of Medicine examined 476 asthmatic kids from eight impoverished neighborhoods

and found that cockroach allergies were the leading cause of attacks. Skin tests showed that different children were sensitive to different allergens, such as cat, cockroach and dust mite. But when the researchers looked at household environments, cockroaches emerged as the key. Kids whose bedrooms harbored cockroach proteins wheezed the most, missed the most school and spent the most time in hospitals.

ous rise in the number of asthmatics may have a silver lining: it has set off a race to bring new asthma treatments to market. The biotech firm Genentech is testing a molecule that blocks the action of immunoglobulin E (IgE), an antibody produced in response to asthma triggers. As any ragweed sufferer knows, IgE may be trying valiantly to fight off these invaders, but the collateral damage is huge: IgE binds to mast cells in the lungs and causes them to burst, releasing histamine and other inflammatory molecules. Genentech's IgE inactivator is probably two years from market.

Fast-acting relievers are being improved, too. The leading one, albuterol, is a mix of two mirror-image molecules. The good twin opens up breathing passages. The evil twin can make kids hyper or nervous, or cause irregular heartbeat or insomnia. One way to avoid the effects of the bad twin is to use a "spacer" device in the inhaler to send the medicine to the back of the throat and lungs, keeping it away from the tongue, where it can be swallowed and enter the bloodstream. Sepracor Inc. has another idea. It is trying to chemically separate out the bad twin, leaving the molecule that dilates airways. The drug could reach the market in 1998.

Even with imperfect drugs, most asthmatics can lead pretty normal lives. Although some patients avoid anything more vigorous than aiming the remote control, most need not. The problem is not exercise itself but breathing through the mouth. When air bypasses the nasal passages, which warm and moisten it, the lungs get walloped with cold, dry air, ex-

plains Dr. William Busse of the University of Wisconsin. That makes the airways contract. But most asthmatics can safely swim (lots of warm, moist air to breathe). Even gymnastics are usually OK (lots of stops and starts). Track and basketball are riskier, since constant running can induce through-the-mouth breathing. Soccer is fine for kids whose symptoms are controlled by a puff of Ventolin before kickoff; for more severe cases, playing fullback or goalie is safer than forward. But asthmatics should get an OK from their doctor before starting any exercise regimen.

Today's asthma therapies are more effective than the number of asthma deaths suggests. The drugs, devices and precautions work. But many patients—or, in the case of children, their parents—don't. "Only about 50 percent of inhaled medication is taken as prescribed," Dr. Henry Milgrom of National Jewish wrote. With such patients in mind, Jonathan Nyce of East Carolina University has created a molecule that strikes at the very core of asthma: the hyperreactivity of the airways. This exaggerated reactivity makes an asthmatic's airways inflame and constrict in response to triggers that don't bother a nonasthmatic's lungs at all. Nyce's "antisense molecule" deactivates the gene that produces the protein responsible for the hyperreactivity. "This could be the first once-a-day asthma medication to treat the underlying cause of the disease," says Nyce. If he's right, managing asthma will give way to curing it.

With ANNE UNDERWOOD in New York and DANIEL GLICK in Denver

Asthma-Proof Your Home

Researchers suspect that eliminating allergens may help prevent asthma. If you already have it, minimizing homegrown triggers will help control the symptoms. A few tips:

Get Rid of the Pets

● That includes dogs, cats, rabbits and guinea pigs. Animal dander is one of the top triggers. If getting rid of pets is non-negotiable, at least keep the critters outside or in noncarpeted areas of the house, such as the kitchen.

Attack the Dust Mites

● It's not dust itself that causes trouble, but these microscopic pests. Carpets, bedding, upholstery and stuffed animals are breeding grounds, so try hardwood floors and chairs. Cover pillows and mattresses with plastic casing. Wash linens in hot water.

Declare War on Roaches

● Not even a dead cockroach is a good one, since their bodies decompose and roach proteins waft through the house. Exterminate first. Then scrub surfaces to eliminate any remains.

Control Indoor Molds

● A dehumidifier is a good start. Zap bathroom mildew and get rid of fabrics in dank basements.

cells and keep airways open.

A new controller acts before a patient senses that an asthma attack is imminent. Leukotriene pathway inhibitors block the action of molecules that cause inflammation and constriction of the airways. Accolate and Zflo, approved in 1996, are the first offerings in this new category; both are taken orally.

Given a choice, asthmatics would just as soon decline the honor of having a newly fascinating disease. But the mysteri-



Early Warning Signs

Asthma in young children is not always easy for parents to identify—or even for doctors to diagnose—since it can masquerade as a cold or respiratory infection. Some possible red flags:

Wheezing

● This seems like an obvious tip-off, but two thirds of infants under 1 year old who wheeze with respiratory infections do not become asthmatic. If wheezing recurs, it may be asthma.

Serious Coughs

● Coughing is an inescapable part of life, but persistent hacking—particularly accompanied by wheezing—is a clear warning. Croup can be another signal if the child has it more than once.

Play-Related Problems

● If exercise or playing hard typically brings on a fit of coughing, tightness in the chest or more than the usual panting, asthma may be to blame.

Trouble Breathing at Night

● It's not only bad dreams that spook asthmatic kids. If shortness of breath awakens them at night, suspect asthma.

Family History

● If one parent has asthma, the child is at least three times more likely to have inherited the disease. A strong family history of hay fever and eczema may be another tip-off.

The indoor environment isn't all that has changed since the middle of the century. With the rise of vaccines and antibiotics, people in developed countries have experienced fewer serious childhood infections than ever before. And despite the

obvious benefits, some scientists suspect that an immune system with no serious work to do is more likely to become a renegade army, attacking whatever irritant it encounters. This is still a hunch, but there is evidence to support it. Recent studies suggest that children who contract measles are less likely to develop allergies or asthma. So are those with positive skin tests for tuberculosis. And allergic conditions are rare among the Hiwi people of Venezuela, who often carry hookworm and other parasites. "We have an immune system that evolved to fight parasites," says Dr. Scott Weiss of Harvard Medical School. "Instead it finds dust mites."

A HUNTER-GATHERER lifestyle, complete with fresh air and rampant infections, might save us all from asthma. But researchers are looking for easier ways to tame this modern scourge. The hope is that if kids encounter fewer allergens early in life, they'll be less likely to develop allergic responses. Next year the National Institute of Environmental Health Sciences will launch an elaborate, eight-year study to see if that strategy works. In the first phase, researchers will study 120 households to de-

Getting On With Life

Asthma doesn't rule out band practice or swimming. The warm, moist air around the pool is soothing to the lungs.

termine the best ways to reduce allergen levels. They'll cover mattresses, steam carpets, trap roaches and apply tannic acid to any suspect surface. And once they perfect their technique, they'll enroll 500 high-risk newborns in a trial to gauge the

effects. Half of the babies will be raised in allergen-free zones while the other half will serve as controls, and the scientists will track the kids' asthma rates. "Will we be able to reduce the prevalence of asthma in the community?" asks Dr. Darryl Zeldin, the NIEHS official overseeing the project. "We don't know. Even with our best reducing agents, we may not be able to get the allergen levels low enough that kids aren't sensitized."

Even if allergen-busting can't prevent asthma entirely, there's no question it can help control the condition (chart). Just ask Margarita Nieves, a 31-year-old South Bronx mother. When her son Jonathan developed asthma at the age of 5, his doctor mistook it for a persistent cold and suggested removing the child's tonsils. He had the surgery, but he got no relief until he visited an asthma-savvy community clinic. Besides prescribing proper medications, the doctors there taught the family how to reduce the allergen load in their apartment. "He's got no teddy bears in his room, no rugs, no curtains, no lampshades," says Nieves. "We even got rid of the cat." That may seem a lot to ask of a child, but it's a small price to pay for a pair of working lungs.

With MARY HAGER in Washington and DANIEL GLICK in Denver

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R Shamir

interoffice
M E M O R A N D U M

to: Mona Pasquill — attn: Chastity
from: Bill Marion
subject: Invitation list for Las Vegas Reception, July 28
date: June 30, 1997

The following is a list of people that we wish to invite to the Reception with President Clinton in Las Vegas on July 28. We would appreciate if you could vet these names prior to us inviting them to the reception.

I can be reached at 202-547-5396 if you have any questions about any of the potential guests. I may send a much smaller addendum later in the week. Thanks for your help.

Adelson, Sheldon and Miriam
Sands Hotel and Casino

Alverson, Mr. and Mrs. Bruce
attorney

Anwar, Dr. and Mrs. Javaid
Quality Care Consultants

Arum, Bob and Lovee
Top Rank Boxing

Belding, Dave and Suzanne
Gold Strike Hotel

Bell, Jim and Linda
Bell Transportation

Bennett, Bill
Sahara Hotel and Casino

Bennett, Diana
Casino Data Systems

Bernstein, Ed and Nancy
attorney

Bingham, Mr. and Mrs. Jay
Falcon Homes

Binion, Jack
Horseshoe Club

Black, Mr. and Mrs. Randy
Diversified Realty

Boyd, Mr. and Mrs. Bill
Boyd Gaming Group

ABC NEWS

SHOW: ABC GOOD MORNING AMERICA (7:00 am ET)

MAY 20, 1997

Transcript # 97052016-j01

TYPE: INTERVIEW

SECTION: NEWS

LENGTH: 1984 words

HEADLINE: RISING ASTHMA THREAT

GUESTS: Dr. NORMAN EDELMAN

BYLINE: CHARLES GIBSON

HIGHLIGHT:
ALA ASTHMA GUIDE

BODY:

CHARLES GIBSON, Host: An estimated 15 million Americans, one third of them children under 18, suffer from asthma. And the problem is getting worse. From 1982 to 1994, the rate of asthma among children rose 72 percent. Well, now the American Lung Association has published its first-ever reference guide for parents of children with asthma, as well as allergies, to help them manage those diseases. The book was written by Dr. Norman Edelman, who's a consultant for the association and the dean of the School of Medicine at the State University of New York at Stony Brook. And he is joining me this morning. Good to have you with us.

Dr. NORMAN EDELMAN, State University of New York, Stony Brook: It's good to be here, good morning.

CHARLES GIBSON: That's a very dramatic number, 1982 to 1994, 72 percent increase of children with asthma. Do we know why?

Dr. NORMAN EDELMAN: No, we don't. There are several theories, and most of them have to do with indoor exposure to air pollution, which has gone up, we think. We think tight homes and the lack of ability to clean houses of everything from cigarette smoke to dust might be responsible. Another idea may have to do with daycare. Many more children now are put into daycare early in life, and scientific studies show they're more likely to catch colds

and other viral infections, and that may predispose to asthma as well.

CHARLES GIBSON: For the parent, early signs that you have a child that may have problems with allergies or asthma. What does a parent look for?

Dr. NORMAN EDELMAN: Mostly, a parent looks for difficulty in breathing, and that may be an unexplained cough every night, that may be a child who gets short of breath more quickly than his playmates, certainly wheezing with a cold is a sign. Sometimes children have a hard time expressing the fact they're short of breath, and it may simply mean a child is frightened or agitated inexplicably, time and time again. All of those things require looking into.

CHARLES GIBSON: You should probably give a very quick definition of what we mean. Allergies is a response to some kind of a -- well, you do it for me.

Dr. NORMAN EDELMAN: Well, allergy is a response to something in the environment that triggers an immune reaction. It sets up a reaction that has antibodies and cells in the body fighting this invader. Now, the reaction is important if the invader is an infecting organism like a bacteria, but the action -- the reaction works against you if it's an allergen, and it sets up an inflammatory response. Allergies and asthma are inflammatory responses.

CHARLES GIBSON: And asthma's particularly an inflammatory response in the lung.

Dr. NORMAN EDELMAN: That's right.

CHARLES GIBSON: All right. Now, what does a parent do to manage these things? Do you try to prevent them in some way, to remove the causative effects?

Dr. NORMAN EDELMAN: The important thing for parents to do, and what we try to point out in our book, is to take charge, just not to let asthma happen, but to take control. Parent starts by controlling the environment, getting rid of dust mites by encasing mattresses and pillows, keeping the house dust free, prohibiting cigarette smoke. Furry pets may have to go. You may have to find a new home for a cat or a dog.

CHARLES GIBSON: And you can test for the causative effects, right?

Dr. NORMAN EDELMAN: Children can be tested to determine what they're allergic to, and some children will benefit from being treated for -- being treated for the allergies.

CHARLES GIBSON: Does it -- can it go away? Does it go away in many cases? Do children outgrow it?

Dr. NORMAN EDELMAN: In about 30 percent of children, when they reach late adolescence, they will get substantially better. But the tendency to asthma doesn't go away, the hyperactivity of the airways remains, and it may come back in the 20s or the 30s with a bad cold or with some other irritant to the lung.

CHARLES GIBSON: Also a study now that shows that there's such a greater incidence of asthma in minority children.

Dr. NORMAN EDELMAN: Yes, especially in minority children in inner cities, and it seems to us that, for the most part, it's the conditions of living rather than the minority status that does it. Children living in crowded apartments are exposed to lots of infections, dust. Now we know cockroaches may be an important allergen that triggers asthma, and that would be especially important in the inner city.

CHARLES GIBSON: Dr. Edelman, it's good to have you here. Also very important, you've got checklists in the book, I know, for things that parents actually can do specifically if they have children who suffer from this. Thanks for being with us. I appreciate it.

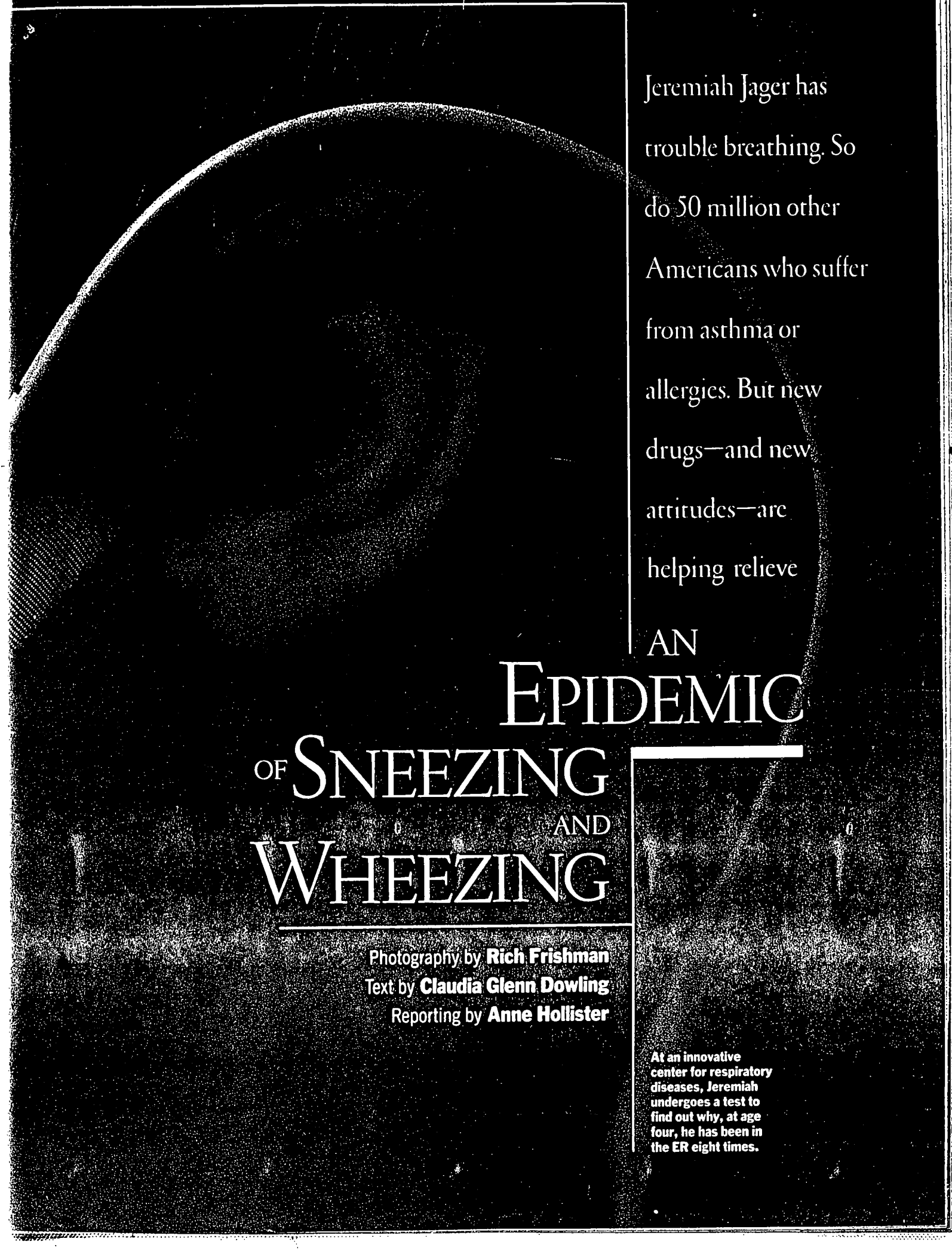
Dr. NORMAN EDELMAN: You're welcome, my pleasure.

CHARLES GIBSON: We take a break. Good Morning America will continue.

(Commercial Break)

LANGUAGE: ENGLISH

LOAD-DATE: May 20, 1997



Jeremiah Jager has
trouble breathing. So
do 50 million other
Americans who suffer
from asthma or
allergies. But new
drugs—and new
attitudes—are
helping relieve

AN
EPIDEMIC
OF SNEEZING
AND
WHEEZING

Photography by **Rich Frishman**
Text by **Claudia Glenn Dowling**
Reporting by **Anne Hollister**

At an innovative
center for respiratory
diseases, Jeremiah
undergoes a test to
find out why, at age
four, he has been in
the ER eight times.