

# Easing the wheezing

## Asthma can be managed

When you can't breathe, nothing else matters much. ■■■■■■■■■■

Just ask any of the 22 million Americans – 7 percent of us – who suffer from the illness, caused by chronic inflammation of the air passages.

For more than a decade, Karin Yeatts, PhD, epidemiology assistant professor at UNC Gillings School of Global Public Health, has studied causes and effects of the disease. Her dissertation examined asthma prevalence among Mecklenburg County (N.C.) middle-school students. She later expanded that work to include 500 middle schools throughout North Carolina. Now, she studies effectiveness of policies and treatments in North Carolina and the impact of indoor and outdoor pollution on health in the rapidly developing United Arab Emirates.



Dr. Karin Yeatts

“Adults and children still die from asthma,” she says. “That’s a travesty – because it’s a manageable disease.”

In her research with middle schoolers across the state, Yeatts found that a large number (6 percent) of students with wheezing symptoms characteristic of asthma were not diagnosed – and therefore not treated. Those were in addition to the 11 percent that had been diagnosed with asthma.

“It takes a while to make a diagnosis,” she says. “People just don’t know what wheezing is.”

Yeatts’ work was included in the N.C. Department of Public Health’s 2006 report, “The Burden of Asthma in North Carolina” (<http://tinyurl.com/NC-asthma-burden>), which identified asthma as a major public health priority in the state.

Her latest research involves youngsters who have been diagnosed and have inhalers to control symptoms. She and researchers from the UNC medical and pharmacy schools found that only one in 10 children with traditional inhalers use them correctly. Newer devices, designed to be easier to use, are used correctly by only one in four. The findings were published in *Pediatrics* online March 28, 2011.

“It takes some coordination to squeeze the inhaler and breathe in at just the right time,” Yeatts says.

Asthma is a significant – and growing – public health challenge, especially in industrialized nations. Yeatts’ work illuminates the difficulties posed by the illness – from the availability and use of health care, to lack of education about symptoms, to the wide-ranging group of triggers that may induce an asthma attack.

Her research also found that North Carolinians with asthma are affected by coarse particles in outdoor air. This particulate matter – from dust to traffic exhaust – causes circulatory inflammation and has a



cumulative effect on raising triglycerides, which can be linked with the development of atherosclerosis.

Yeatts is part of a UNC research team also working in the United Arab Emirates (U.A.E.), where asthma prevalence is comparable to that of U.S. and Europe. One reason? Air pollution, both indoors and outdoors. Yeatts’ study of 628 households across the U.A.E. showed that 43 percent burn incense every day, and 35 percent of men smoke tobacco.

In North Carolina, the medical community and public health departments continue to improve the quality of care, Yeatts says. “North Carolina has certain policy advantages – tobacco use prevention, for instance. But asthma is multifactorial. There are personal environmental decisions (such as cigarette smoking) and air quality issues in the U.A.E. that will be improved with education and regulation.”

The complexity of the challenge intrigues Yeatts. She intends to continue measuring the scope of the problem, identifying susceptible populations and providing evidence for the establishment of air pollution regulations that will result in cleaner air and improved health.

– Linda Kastleman