The lower incidence of allergic diseases in developing countries has had scientists speculate that better hygiene in the industrialized world leads to more asthma. So why, then, do certain infections actually exacerbate or bring on the disease? Cedars-Sinai researchers think they’ve found the answer—and a new clue into the alarming rise of asthma in developed countries.
alk into any grocery store and chances are good you’ll find a handy box of disinfecting wipes waiting for you by the parade of grocery carts. When you get home, you’ll likely wash your hands in antibacterial soap and clean your kitchen counters with antibacterial disinfectant. And when your kids scrape their knees, you’ll promptly apply antibiotic ointment.

There’s no doubt about it: We live in an ultra-clean world. And for the most part, clean is good. Modern sanitation systems, clean drinking water, and the advent of antibiotics and vaccines have all resulted in lower infant mortality and greater longevity.

But while all that cleanliness may be next to godliness, for the past 20 years, scientists have speculated that it could be causing an unintended side effect: an epidemic of allergies and asthma in the United States and other developed countries.

“In developing countries, children are exposed to more dirt, bacteria, and pathogens than in developed countries,” explains Moshe Arditi, MD, vice-chair of research in the Department of Pediatrics and director of the Division of Pediatric Infectious Diseases at Cedars-Sinai Medical Center. “The theory has been that the resulting infections actually help protect you against developing allergies and asthma. With more hygiene, you get fewer infections—and therefore more asthma.”

First proposed in 1989, this “hygiene hypothesis” has been commonly used to explain the increase in allergic diseases and asthma since industrialization as well as the higher incidence of allergic diseases in more developed countries. But there’s a rub. According to the hypothesis, infections should protect you from asthma. And yet, certain infections not only don’t protect you, they can actually exacerbate and even bring on the disease.

Understanding Asthma

It begins with just a mild cough. Soon, the child is coughing frequently, then wheezing as he struggles to breathe in and out. His small palms sweat, and his heart starts to race. It feels as if he is only breathing through a straw.

The child is having an asthma attack—and he is not alone. Rarely encountered in the 19th century, this chronic lung disease, which inflames and narrows the airways, now affects 300 million people worldwide, including 22 million Americans—nearly 6 million of them children. Add in allergies, and the tally jumps to 60 million Americans. Compare that to the nation’s 17 million diabetes patients and 7 million heart disease patients.

Although asthma can be managed, there is no definitive cure, and it leads to 5,000 deaths every year in the United States. Genetics also play a role (if one parent has asthma, chances are one in three that each child also will have asthma), as does the environment, but the exact cause of the disease remains unknown.
According to the Centers for Disease Control, the prevalence of asthma in U.S. children jumped by an astonishing 60 percent between 1980 and 2003. In Los Angeles County, approximately 1.2 million children and adults have been diagnosed with asthma, or nearly 12 percent of the population.