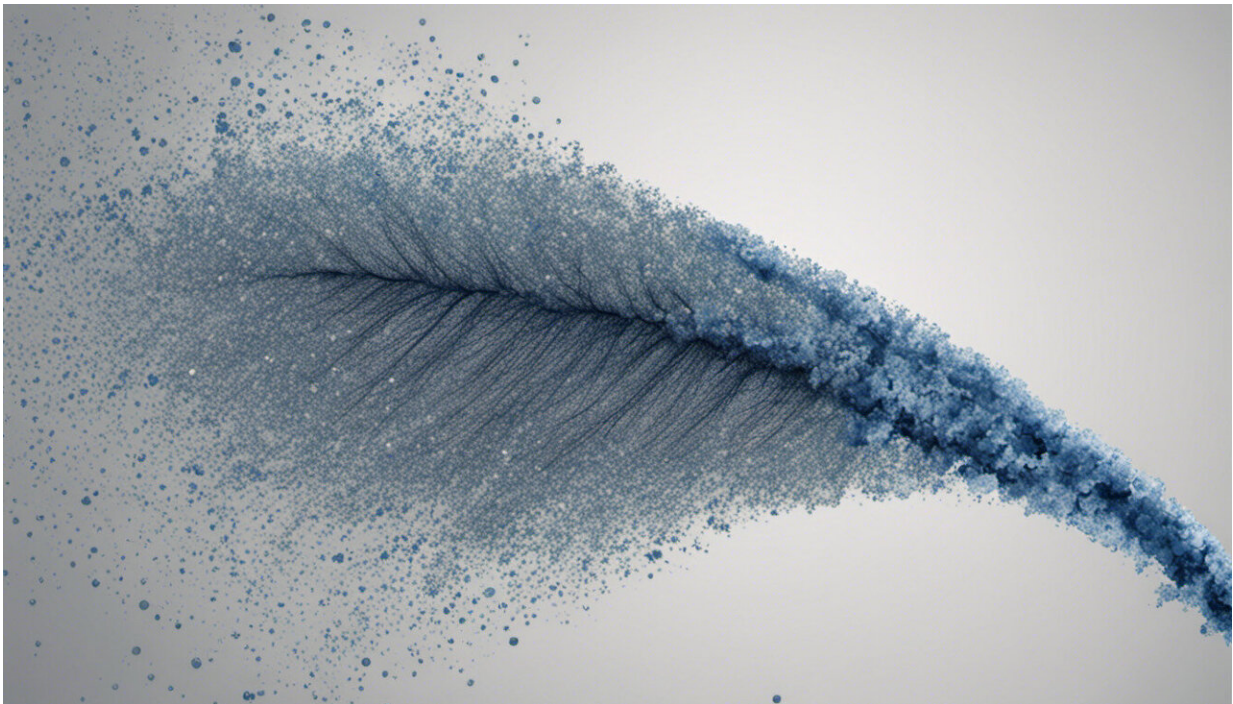


Why are asthma rates higher among children now than in the past?

November 12 2012



Credit: AI-generated image ([disclaimer](#))

(Medical Xpress)—Doug Brugge, a professor of public health and community medicine at Tufts, assesses the possible reasons.

It is true that asthma prevalence has been rising in the [United States](#) and many other parts of the world. The reasons for this are not yet clear,

although there are some hypotheses that are supported by at least some evidence. Understanding the increase in asthma, particularly in [children](#), is terribly important. Preventing asthma in the first place is what we call primary prevention in [public health](#). Until we understand why asthma is becoming more common, we are seriously limited in what we can do to prevent children from developing the disease.

Most people think that the rapid rise in asthma cannot be due to genetics, because [genetic changes](#) take many generations. This may be true, but I am not as certain. Imagine that [infant deaths](#) from [pneumonia](#), which were common in the past, were dramatically reduced. It seems to me that you would then have a pool of children, rarely surviving in the past, now living through childhood, perhaps with weaker respiratory systems.

Another possibility is that doctors are simply diagnosing more asthma today than before. According to this line of thinking, milder cases of asthma, which would have been ignored a few decades ago, now get attention and treatment. While I suspect this may influence the rise in [asthma prevalence](#), I am skeptical that it could account for most of the change. Many children with asthma today have moderate to severe asthma, which would have been readily apparent in the past.

For me, the environmental hypotheses are the most likely explanations and most interesting, because we potentially could do something about them. There is evidence that [tobacco smoke](#) and [air pollution](#) from traffic increase asthma risk. But because of some work I have done, I am particularly interested in what is called the "[hygiene hypothesis](#)."

This hypothesis is poorly named in my opinion because it suggests excessive cleanliness. To me the core idea has more to do with basic sanitation, our microbiome (the microorganisms that live on and in our body in mostly helpful ways) and infectious diseases, including viruses, bacteria and parasites. People who have more infections and different

beneficial microbes appear to be less likely to develop asthma, allergies and autoimmune diseases, suggesting that there is something different about their immune system.

I became interested in the hygiene hypothesis when then Tufts medical student Robyn Matloff, A03, M07, MPH07, and then Tufts undergraduate Angie Lee, A07, MPH10, were surveying children from Chinese immigrant families for asthma. Working with Professor Mark Woodin, we found that foreign-born children were far less likely to have asthma than those born in the United States. A later survey, led by TJ Schuch, another MD/MPH student, found a similar pattern among black residents in Dorchester that resulted in a *Boston Globe* cover story after we published it. This semester another undergraduate working with me, Laura Corlin, A13, has looked at older adult Chinese immigrants and found that they too are much less likely to have asthma than white non-immigrants.

In many ways, being born in a less-developed country today is similar to being born in the United States in the past. In both cases, the biological influences on the developing immune system are quite different from what most of us experience today.

Does this mean the hygiene hypothesis is correct? Not necessarily. I think we need more and better studies to rule it in—or out. There are other possibilities which also need to be investigated. One notable one is the vitamin D hypothesis. Most people in lower-income countries also live in sunnier places and spend more time outdoors wearing less clothing than we do in Boston. Vitamin D deficiency is widespread at northern latitudes, and there are some indications of associations with asthma and immune function.

It is disappointing that we do not know more about how to prevent [asthma](#) in children. But this gap in our knowledge also provides an

opportunity to do research that has the potential to bring about truly new knowledge that might provide meaningful public health benefits.

Provided by Tufts University

Citation: Why are asthma rates higher among children now than in the past? (2012, November 12) retrieved 24 April 2024 from <https://medicalxpress.com/news/2012-11-asthma-higher-children.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.