

Is dirty food healthier for you and your children?

Posted At : September 4, 2012 9:59 PM | Posted By : Michael Smith

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Could the rise in auto-immune diseases like hay fever, asthma, diabetes and even autism over the last 150 years be linked to a corresponding drop in rural living with "dirty" food rich in bacteria and parasites?

So begins [An Epidemic of Absence](#) , Velasquez-Manoff's new book about a tantalizing hypothesis for a modern medical mystery: Why autoimmune diseases, in which a person's immune system attacks their own body, are becoming more common, even as infectious and parasitic diseases are beaten back. (Read [an excerpt from the book](#))

According to Velasquez-Manoff and the scientists he writes about, it's no coincidence. A fast-growing body of research suggests that immune systems, produced by millions of years of evolution in a microbe-rich world, rely on certain exposures to calibrate themselves. Disrupt those exposures, as we have through modern medicine, food and lifestyle, and things go haywire.

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We know tuberculosis, *Mycobacterium tuberculosis* , came out of Africa with us. It's been in the human body for at least 60,000 years, and probably longer. But beginning in the late 18th century, there was a wave of TB in Europe, and nobody has ever really been able to explain it. Some people argue that a more virulent strain emerged, and there is some evidence for that when they look at the genetics of it. But there's another hypothesis.

According to this, we had to acquire immunity to tuberculosis because of constant exposure to non-parasitic versions of mycobacteria that basically live in soil. But Europe begins to urbanize in the 18th century. The potato is imported from the Americas, causes a population boom, and people start migrating to cities. They lose the mycobacteria in the natural setting. And without that exposure, immune systems didn't know how to react to it.

Wired: Why is our exposure to parasites and microbes so different now than it was 100 years ago, or 500 years ago?

Velasquez-Manoff: Let's imagine people living in a rural environment, with lots of animals around. That's the first thing that's different. We were constantly exposed to each others' fecal microbes: Feces was on our hands, and we fertilized our crops with it. People were fermenting food or drying it.

Today's processed food is designed not to carry microbes. It's full of salt and sugar and grease. You've seen those photos of McDonald's hamburgers kept for a year or two that don't rot: Microbes can't get a foothold in them.

There's a story about the food question. Bengt Björkstén compared allergies in Sweden and Estonia, a neighboring Baltic country, right after the Iron Curtain started drawing back in 1989. In Estonia, they were lower by two-thirds. He thought the protection came from their food. They had been getting microbes from food that was grown locally and fermented, essentially because it was a poor country. Modern food has to

have a shelf life. It has to travel long distances. That happens by various mechanisms, but essentially you're taking the microbiota off food.

Read more at

<http://www.wired.com/wiredscience/2012/09/epidemic-of-absence/>