

## Get out your hankies

### Better brace for the wave of allergies and asthma about to engulf us

by Michael Finley

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"What Ails You?"

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Last summer, while raking brush in the back alley, I accidentally stepped on a nest of yellow jackets. Within seconds I sustained two slight stings under a sock, and was hopping back to the house.

The pain of the stings weren't the problem. The problem was that within seconds of the stings my airways began to narrow, and my breath began to struggle. I didn't know the word at that time, but I was in an official state of anaphylactic shock, brought on by an allergy to bee venom I didn't even know I had.

I lived, as you can see. But my doctor tells me that the next time I get stung, I'll have an even worse, possibly a life-threatening attack.

Well, you know how it is when interest and self-interest collide. Suddenly, I'm an inquiring mind on the topic of allergies. Why did I develop one at age 52? What happened inside me that a little baby bee should provoke should such a response? And since when do allergies kill people?

#### **Immunological overkill**

Allergic reactions like hay fever, asthma, and bee-sting anaphylaxis happen, I learned, when our immune systems over-respond to some stimulus. When a child sneezes or wheezes, or a reporter goes into shock in his back yard, it is not the grain of pollen or bee-stinger at fault. It is our hypersensitive immune systems that misread the threat of the antigen, freak out, and respond with immunoglobulin overkill – specifically, a usually very useful antibody known as IGE.

With hay fever or allergic rhinitis, the IGE over-response takes out our sinus passages. With allergy-induced asthma, the over-response shuts down our airways. With insect venom allergies, the over-response can shut down our entire nervous system.

We all know about skin allergies, from our brushes with poison ivy, oak, or sumac. People are also have skin reactions to nickel, chrome, mercury, certain cosmetics and drugs applied to the skin.

Historical records show that people have been aware of food allergies from the get-go. Hippocrates wrote about lactose intolerance in the 5<sup>th</sup> century BC. Medical historians suspect that the admonitions against nonkosher foods like shellfish in Deuteronomy arose from common allergic reactions to them. When Roman poet Lucretius wrote, "One man's

meat is another man's poison," it's likely he was talking about actual meat and actual poison.

Today, people avoid all kinds of foods, especially eggs, milk, nuts, soy, seafood, fish, corn and wheat. But almost any food can cause allergy. One nibble of the wrong item and the results are systemic and spectacular: vomiting, nausea, stomach cramps, indigestion, diarrhea, hives, eczema, headaches, asthma, earaches, phlegm in the throat and itchy, stuffy, runny nose.

It's like our bodies have declared war against themselves, and we are innocent passengers on a bus headed off a cliff. Anaphylaxis is the most severe allergic reaction, occasionally (but not often) resulting in death. But for the most part, the damage done by allergies is less fatal than depressing.

Take hay fever. Twenty million American suffer from it, and have to shell out thousands annually for air filters, prescription and over-the-counter medicines – an estimated \$4.5 billion annually.

But the real cost of allergies at work and school is spread much more broadly. One estimate adds an additional \$4 billion annually from 3.8 millions days of absenteeism at work and school. Then there is the element of “presenteeism” – people who make it to work but don't work so good when they get there. Feeling bad lowers productivity, inhibits learning, dulls cognitive function, clouds one's decision making abilities, and alters one's self-perception. Shoddy or delayed work due to hay fever adds another estimated \$2.5 billion to the overall tab.

And that's just allergic rhinitis. Asthma is the single biggest reason kids stay home from school, and why parents miss time from work. And it goes on and on. Allergies deserve a line on most companies' annual reports, scrunched in among the other fixed costs of doing business.

One report shows that asthma's current \$11 billion cost to society annually will rise to \$18 billion by 2020.

### **It gets worse**

"The bad news about allergies is that incidence and severity are on the incline," said Richard Sveum, an allergy specialist at Park Nicollet Clinic, Saint Louis Park, and a professor at the University of Minnesota's allergy department.

Between 1980 and 1994, the number of asthma sufferers in the U.S. increased by 75%, according to the Centers for Disease Control and Prevention. Among youngsters under 4 years of age, the number jumped 160%. This trend continued in 1995, when asthma caused 10 million missed school days and nearly 2 million visits to hospital emergency rooms.

If these rates continue, a child born a generation from now is twice as likely to develop asthma as a child born today. Asthma-caused deaths will also increase, from 5,000 deaths per year today to 10,000 deaths per year by 2010.

What accounts for this epidemic? Some epidemiologists blame it on pollution. Others say it is the result of better-insulated, leakproof houses, which trap mites and mold and recycle them endlessly through our systems. Others say the epidemic is just a matter of better diagnosis.

But there are some interesting theories being bruited about. One is the Darwinian theory: that as medicine allows "weaker" individuals to survive and procreate, the human herd becomes ever more genetically susceptible to weaknesses. Instead of being culled out of the population, and devoured by lions, these individuals are saved by science, but are diluting the gene pool. Clearly, the solution is to drive these people into the desert and let nature solve the problem for us.

A more merciful theory has to do with the notion of hygiene. It notes that farm children and those raised around animals have fewer allergic problems than children raised in the more sanitary suburbs. And it suggests that in our otherwise healthy world, our immune systems aren't being put to the challenges and tests that previous generations had to respond to -- all the infections and diseases and plagues and creepy crawlies that kept our ancestors immune systems honest. So instead our immune systems, not having anything better to do, have set out instead on these pointless immunological misadventures.

### **Shut up and suffer**

Regardless of what theory one subscribes to, there is still the practical matter of how to live with allergies.

If there is a single great misunderstanding people have about allergies, said James Li, professor of medicine specializing in allergies at Rochester's May Clinic, it is that they just "happen" -- if you get them, then you suffer, and there's not a whole lot you can do about it.

"Some people never even go to the doctor. They tell themselves it's normal to feel bad."

The truth is that a flotilla of powerful and effective medicines are available for almost every allergy:

For allergic rhinitis there are non-sedating antihistamines like Claritin, and cortisone sprays that really get at the clog afflicting the head and chest.

For asthma sufferers there are numerous steroid-based inhalers, like Flonase and Visonex and Vasocort, that are safe and effective.

And for bee sting allergies like mine, there are allergy shots that, with a little frequent poking with a needle, erase the danger of anaphylaxis altogether. Allergy injections have been around for over a hundred years, but the most recent generation of vaccines are better characterized and capable of permanently knocking out not just venom allergies but allergic rhinitis and allergy-based asthma as well.

I haven't embarked on an injection regimen yet. But as soon as the spring comes, I am going to be brandishing my own little weapon against those who would make my immune system go nuts. I have something on my person called an Epi-Pen -- an injector with 3 mg of epinephrine ready to halt a venom reaction before it halts me.

It's my ultimate challenge as a writer, to prove the pen is mightier than the sting.

**Sidebar: Allergy Facts**

- Allergic disease, including allergic asthma, is the country's most common and costly illness.
- 38% of all Americans suffer from some sort of allergic condition.
- Allergies are the 6<sup>th</sup> leading cause of chronic disease in the United States.
- Allergies are the most frequently reported chronic condition in children, limiting activities in more than 40 percent of these children.
- An estimated 2 million Americans develop severe allergic reactions to insect stings.
- An estimated 42,000 cases of adverse drug reactions are reported annually.
- Allergy sufferers account for more than 8.4 million physician visits each year, and \$225 million is spent on physician services annually.

Source: Asthma and Allergy Foundation of America

Sources:

- Dr. James Li, Mayo Clinic, [li.james@mayo.edu](mailto:li.james@mayo.edu)
- Dr. Richard Sveum, professor at the U of Minnesota allergy department and he is also an allergy doctor at Park-Nicollet Clinic. (952) 993-3351.

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