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# 'Allergic' Review: Runny Noses, Itchy Eyes

'Allergies,' despite their prevalence, lack precision in our language. The public uses the term to describe a vast array of symptoms.

By John J. Ross

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In 1906, Clemens von Pirquet, a Viennese pediatrician, noticed something peculiar when he treated children with diphtheria. Before the vaccine era, this disease was common and much dreaded, as the toxins produced by the diphtheria bacterium could cause fatal damage to the heart and airways. In Pirquet's time, the standard treatment was equine antitoxin: antibodies from horse blood that neutralized the poison produced by diphtheria bacteria. Although children who received horse serum recovered, Pirquet found that many developed fever, rash and arthritis about 10 days later. This "serum sickness" heightened in severity, and came on more quickly, with repeated doses.

Pirquet correctly theorized that the children's own immune systems were reacting to the horse serum. He concluded that the immune system was Janus-faced: It protected against disease, but could also make us ill. To convey this duality, Pirquet coined the term "allergy," from Greek words meaning "different activity." The U.S. is currently in the grip of an epidemic of "different activity." Rates of hospital admissions for asthma, nut allergies in children, and prescriptions for EpiPens (used to treat extreme reactions) have all tripled in recent decades. Not only are food allergies now more common in children, but they are less likely to be outgrown with age than in years past.

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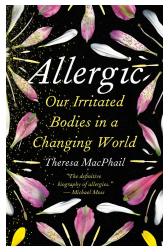
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**Allergic: Our Irritated Bodies in a Changing World**

The causes and consequences of this epidemic are the subject of "Allergic," an important and deeply researched book by Theresa MacPhail, a medical anthropologist who memorably portrays the human face of disease. Patients and parents struggle with fear and uncertainty, as well as illness. Doctors are hobbled by a limited armamentarium of drugs, many of which their patients

By Theresa MacPhail  
Random House



cannot afford. Ms. MacPhail also has a personal connection to this subject: Her father died after being stung by a bee on the main street of the New Hampshire town where she grew up. (His girlfriend drove him to a drugstore instead of a hospital; even though he was *in extremis*, the pharmacist refused to dispense an EpiPen without a prescription.)

Ms. MacPhail notes that the word “allergy” lacks precision in contemporary usage, as “the public . . . often uses the term indiscriminately to describe almost any uncomfortable set of symptoms they might experience.” Her book mainly discusses diseases driven by IgE antibodies behaving badly. These include atopic dermatitis (eczema) and allergic rhinosinusitis (hay fever), which are unlikely to kill but may have dismal impacts on quality of life, along with their more lethal cousins, allergic asthma and anaphylaxis.

Anaphylaxis, from the Greek words for “backwards defense,” is a baffling condition in evolutionary terms. Why would our immune system engage in lethal friendly fire after bee stings or exposure to minute amounts of peanut proteins? One theory is that the reaction observed in anaphylaxis—a flood of enzymes—might have evolved to break down venoms from snake and scorpion bites. This adaptation may have been advantageous in humanity’s ancestral homeland of East Africa, but it’s considerably less of need in the suburban environs of contemporary Westchester County.

While everyone agrees that allergic diseases are on the rise, there is no consensus as to why. Ms. MacPhail’s version is an Agatha Christie mystery with a bewildering complement of suspects, all or none of which may bear some guilt.

One possible perp is climate change. Rates of mold allergy are soaring in a hotter and wetter South. Noxious species such as ragweed, poison ivy and invasive grasses are thriving with higher levels of atmospheric carbon dioxide. Warmer weather leads to pollen seasons that start earlier and end later. According to Ms. MacPhail, things will get worse: “Pollen levels,” she writes, “are expected to double by 2040 and the pollen will be more ‘potent’ (its peptide levels will rise, likely worsening our immune system reactions).”

Some investigators propose a “hygiene hypothesis,” arguing that we actually do harm to our immune systems by trying to avoid contaminants—occasional exposure to allergens may have been beneficial to our forebears, who were not overly concerned with cleanliness. The data for the hygiene hypothesis is a mixed bag. Some studies do show that early-life exposure to farms and livestock seems to protect against allergy, for instance, but farmers seem to be suffering from higher rates of allergies, just like everybody else.

A related theory blames our runny noses and wheezy chests on a depleted microbiome: Antibiotics, a high incidence of caesarean sections and low-fiber processed foods may have impoverished the bacterial communities in our guts that help regulate and discipline the “unruly children” of the immune system. Other immunologists argue that soaps, detergents and hand sanitizers are disrupting the proper balance of microbes on our skin. Sedentary lifestyles and low vitamin D levels also come under suspicion.

Advances in preventing and treating allergies have been painfully slow. In the 19th century, physicians attributed allergic diseases to the baleful effects of a

nervous temperament and encouraged patients to take morphine and smoke jimson weed. This may have improved their jitters, though it probably did little to improve their breathing.

More recently, “the typical treatments for respiratory allergies and asthma stayed more or less the same for decades.” These include avoidance of allergens; household cleaning to get rid of triggers such as roaches, mold and dust mites; and medications such as antihistamines and inhalers. Patients might be offered immunotherapy, in which individuals are desensitized by exposure to small doses of an allergen. Those with eczema are treated with a battery of moisturizers and steroid creams. Powerful new therapies, such as monoclonal antibodies to modify the action of the immune system, offer hope to some allergic patients, but financial barriers put them beyond the reach of many others.

In Ms. MacPhail’s analysis, allergy is not only the evil twin of immunity, but also the unexpected dark side of material progress, which has made us unhealthy in ways that we struggle in vain to cure. The author doesn’t have an easy fix for the allergy crisis, but her compassionate insights into the problem make for engrossing reading.

*Dr. Ross is the author of “The Longevity Bible.”*

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