

Food allergies should not be taken lightly

Food allergies seem to be increasingly common and have become the topic of much discussion in recent years. Why do some adults and children have a deadly reaction while most of us don't? I'm allergic to pollen, but it doesn't kill me; why is this different? Why can't my child bring a peanut butter sandwich to school just because someone else's child can't eat it? These questions have given rise to some fervent opinions, both from the allergic and non-allergic alike.

The term "allergy" is a very broad one. It refers to any instances of the body's defenses over-responding to a substance that is harmless and, in doing so, creating damage. At its most basic level, the immune system works to distinguish "self" from "non-self" and harmless from harmful and to destroy anything "non-self"

that is potentially harmful.

Considering how many harmless, "non-self" substances we are all exposed to every day, it is remarkable how often our immune systems get it right. The act of destroying something harmful can be a brutal one; it creates fevers, damages tissue and makes us feel sick. Destroying a harmful invader is usually worth the collateral damage, of course, because a harmful invader has the potential to destroy us. This is why sensing "danger" signals from a "non-self" substance is so important. If our defenses brutally attacked everything, we wouldn't last very long. Why do some people's immune systems attack certain harmless things? The reasons and the consequences vary quite substantially.

Life-threatening food allergies usually fall into the first



of four types of over-responses called hypersensitivity reactions. Type 1 hypersensitivity reactions also include skin rashes and the sniffles we get from pets or seasonal allergies. How can the range of symptoms be so varied if these are all the same type of reaction? It comes down to strength and location.

When an allergen (i.e., the target of an allergy) is introduced into the body, several substances are produced through an intricate series of reactions. The key bad actors in an allergy are proteins called

histamine, prostaglandins and leukotrienes. Broadly speaking, these proteins are going to do three things: constrict the airway and/or blood flow, cause smooth muscle contractions in the airway or gut, and call lots of inflammatory cells to the area.

If this happens on the skin surface, the result is usually a rash. If this happens in the nasal cavity, the result is usually a runny nose ("allergic rhinitis"). If these bad actors are released all throughout the body, the result is a deadly condition called anaphylactic

shock.

This last version is what we see in severe food allergies. The airway is constricted. Blood flow is minimized, causing tissues to suffocate. Involuntary smooth muscle contractions cause the feeling of one's throat closing. This condition is rapidly fatal if not reversed. Fortunately, this terrible state can usually be reversed with a high, injected dose of the human hormone epinephrine (also known as adrenaline). This hormone has the opposite effect in that it causes dilation rather than constriction of the airway and blood flow and is, therefore, the preferred treatment.

Understanding the science behind deadly food allergies is critical to informing many of the passionate debates on the subject. Anaphylaxis and allergic rhinitis, though both correctly called "allergies," are quite physiologically different and should not be thought of as comparable. The establishment of nut-free schools has not been a welcomed change

• See **UNE**, Page 7

Skin Cancer, From Page 4

laughed. "It wasn't taken seriously back in those days. The dermatologist removed this mole, making a big incision to get the margins of the tumor out for testing, and that's when she found a second one that my primary care physician didn't even see. I was told if I hadn't gotten both removed, I would have been dead in a year."

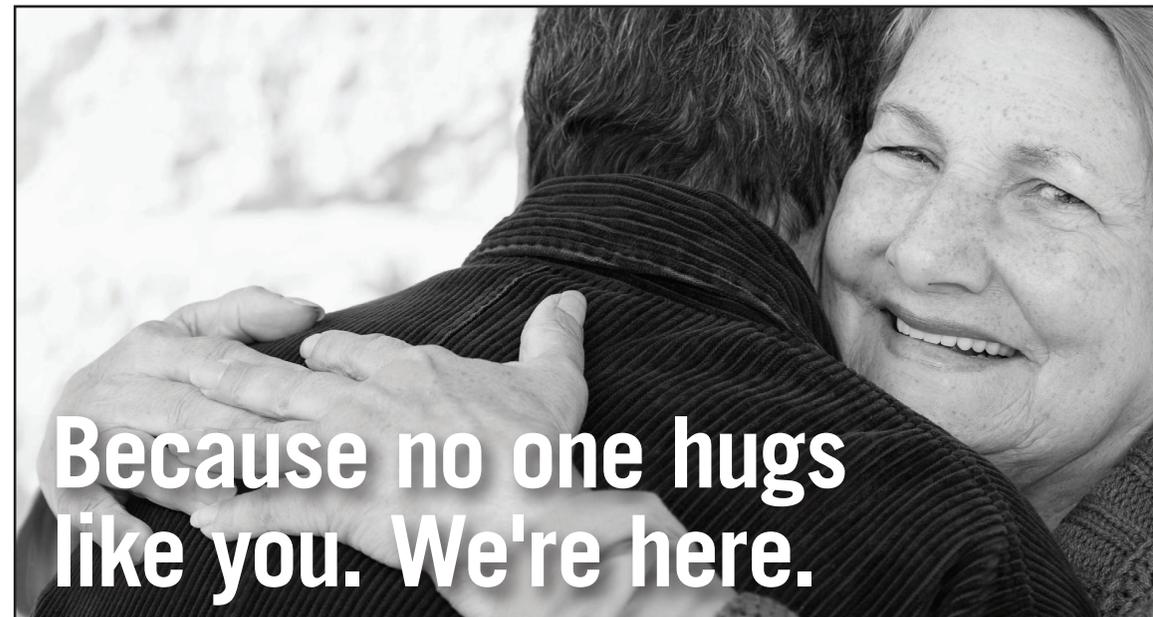
At that point, Arnold was referred to Dr. Catherine A. Share of SMHC, who specializes in general surgery. This surgery, although lifesaving, left a large hole where the mole once resided. Although the process was painful, Arnold stated that he couldn't have been more grateful to have the cancer caught early enough to save his life.

"One thing I did do was send an email out to all my family to let them know I know I had been diagnosed, and that they too should get checked out," he said. "My niece said she had something worrisome on her leg and was going to get

it checked. She had just given birth and now, after the doctor visit, was being diagnosed with melanoma. She went for a brain and lung scan to find she had stage three. It's a good thing I emailed everyone related to me, because it's important that everyone get checked."

Frankel said that the most important steps for prevention include wearing sunscreen, reapplying every 40-80 minutes, reapplying often when swimming or sweating, staying out of the sun between 10 a.m. and 2 p.m., and never using tanning beds. The American Academy of Dermatology recommends that people wear an sunscreen that is at least SPF 30.

"No concern is too small for us," said Frankel, "and it's important that people understand that skin cancer can happen to anyone, regardless of age or gender: from walking your dog on the beach without sunscreen, or driving your car and not wearing sunscreen, especially being white in New England."



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Treating varicose veins – and tips for relief

Vein, or venous (pronounced vee-nus), disease is defined as the impairment of blood flow toward your heart, and it is one of the most common health conditions in the country. In fact, approximately 80 million people in the U.S. have some form of venous disease, such as varicose veins or venous ulcers.

For years, patients had few options for treatment, but as modes of treatment progressed, the demand among patients and health care practitioners increased and a specialized field grew to fill the niche.

Phlebology – the study of veins, vein health and venous diseases and disorders – grew out of internal medicine, like cardiology and pulmonology

before it. The American Medical Association has recognized phlebology as a field in its own right since 2006, while the American Osteopathic Association recognized it in 2007.

Since the inception of phlebology, procedures have become more technically advanced than ever before. Endovenous Laser Ablation, or EVLA, is considered the gold standard in treating varicose veins. This procedure uses laser energy delivered through a thin fiber-optic probe to treat the underlying cause of the varicose vein.

Sclerotherapy is frequently used to treat spider veins and smaller veins. In this procedure, the provider uses tiny needles to inject a medicine

called a sclerosing agent into the vein's interior wall. This substance causes the vein to become sticky and seal shut, causing the troublesome vein to disappear. Blood then finds a healthy path back to the heart.

Treatment can help manage venous disease by eliminating pain and improving appearance and overall health. But there are also things one can do even before seeing a doctor.

Doing one or more of the following may alleviate discomfort and help prevent the progression of venous symptoms:

- **Walk.** Walking causes the rhythmic contraction of calf muscles and helps promote blood flow to the heart. Walk at least 30 minutes every day – all at once, or in shorter increments.

- **Elevate.** Elevate your legs above your heart as often as possible – for as long as 30 minutes, or as briefly as three minutes. The best time is after you have been standing or after a hot shower.

- **Don't smoke.** Smoking and exposure to second-hand



smoke constricts veins and affects overall circulation.

- **Sit properly.** Focus on good posture and avoid crossing your legs, or sitting in ways that can compress veins for prolonged periods.

- **See a qualified, board-certified phlebologist** for a screening and evaluation.

Today's treatments for venous disease are minimally invasive, cause very little pain, and can be accomplished quickly right in a physician's office. Treatment can stop the

progression of the disease and its complications for those in its early stages. For those struggling with late-stage symptoms, it can restore health and improve quality of life.

— *Dr. Cindy Asbjornsen is the founder of the Vein Healthcare Center in South Portland. Certified by the American Board of Venous and Lymphatic Medicine, she cares for all levels of venous disease, including spider veins, varicose veins and venous ulcers.*

• **UNE,** From Page 5

in many communities, and so-called “allergy moms” can be derided as overprotective helicopter parents. They can be seen as choosing to inconvenience everyone else for the sake of their child. In the worst instances, they are accused of exaggerating the potential danger of severe food allergies. Given the minuscule amounts of allergen that are required to kick off the anaphylactic shock described above, the concern for public safety seems warranted.

This is only part of the anxiety faced by allergic individuals or parents, however. Only the top eight food allergens are required to be labeled on packages. This presents a critical risk for those allergic to certain seasonings (most notably sesame), given the broad ingredient categories (“natural flavors” or “spices”) listed on many food labels. Additionally, truly well-meaning individuals wanting to accommodate an allergic friend may not be aware of how minute the exposure has to be for a tragic outcome to occur. Even a hand-washed pan or a re-used spoon can lead to anaphylaxis.

One of the major arguments used against universal accom-

modations for allergic individuals is that they needn't inconvenience everyone because they can just carry an EpiPen® (i.e., epinephrine injection). Epinephrine injection is not a gentle treatment and should not be routinely relied upon as a substitute for contact avoidance. In addition, the severity of allergic reactions that are not outgrown increases with each exposure, meaning that it becomes harder and harder to “rescue” a person in anaphylactic shock each time he or she encounters his or her allergen.

Invention of the EpiPen was near miraculous in the fight against life-threatening allergies, given the fact that seconds can make the difference between life and death. However, the availability of an EpiPen is not something to be cavalier with.

The best way to keep everyone safe is by avoiding allergen contact. Does that mean that those of us who are non-allergic have to modify our behavior somewhat? Yes. I, for one, am happy to do it.

— *Meghan May, Ph.D. is an associate professor of biomedical sciences at the University of New England in Biddeford.*



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