

HEALTHWISE

Personalized Medical Practice

Seth Coombs, MD

From the desk of Seth Coombs, MD

Dear Patient:

The human body is really a medical marvel...its everyday functions are ingeniously engineered for optimal performance. Each sneeze, yawn and hiccup has a purpose, as explained in this issue of *HealthWise*.

We also examine some of the intriguing theories surrounding our increasingly allergic population. It's impossible to miss how widespread this has become, but the 'why' continues to be a challenging and fascinating topic being researched. You'll also find the latest information on how to reap the many health benefits of incorporating yogurt into your daily diet, making it a great addition to your list of healthy resolutions for the new year.

My resolution? Ensuring that your body is performing those medical marvels, large and small, each day, to keep you in the best health possible.

Happy New Year!

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Deconstructing the Sneeze, Decoding the Yawn... and More

The miracles of the human body are on continual display each day. Even involuntary actions, such as sneezing and shivering, help our bodies function optimally.

The big sneeze.

The process is simple and very efficient: the cells lining our noses and the sinuses, called cilia, constantly produce mucus – about four cups a day on average – to trap the foreign particles we breathe in. The mucus is either swallowed, pushed out through the lungs, or sneezed out. The sneeze produces a burst of air which neatly clears the nasal passages, almost like pressing the reset button on your computer. For almost 16 million Americans with chronic sinusitis, however, the mucus is the problem. As reported in the *Journal of the Federation of American Societies for Experimental Biology*, researchers discovered that people with chronic sinus issues are not able to 'reboot' and clear the mucus from their nose, causing them to sneeze more often, with ineffective results. Post-nasal drip occurs from the additional mucus, which drips continuously down the nose or throat of sinus sufferers, according to *Harvard Health Watch*.



Shivers and yawns.

The brain is constantly monitoring, responding and adjusting to stimuli. Shivering and yawning are two automatic and subconscious regulatory body functions controlled by the brain. When the surface of the skin gets chilled, receptors send signals to the brain, which activates the body's warming reflexes. Shivers occur when the muscles in your arms, legs and jaw contract and expand quickly. As one of nature's best defenses against hypothermia, shivering is the body's way of producing heat within the skeletal muscles in order to maintain a core temperature of 98.6°F.

Surprisingly, the true function of yawning might also be to maintain correct temperature in the brain, not to get more oxygen, as previously assumed. The human brain works hard, and tends to heat up more than other organs, according to *Smithsonian Magazine*. When you yawn, the gulp of air produced travels up to the nasal and oral cavities, and increases the rate of blood flow to the skull; inhaling at the same time brings cooler blood to the brain. This explains why we yawn more frequently at bedtime or upon awakening, as brain temperatures are highest before falling asleep, decline during the night, and rise rapidly in the morning.

Goose bumps.

Triggered by a variety of unrelated events – from the chill you feel after leaving warm water or when entering an over-air-conditioned restaurant, to watching a horror movie, or even hearing

the national anthem – goose bumps are a physiological reaction to both emotion and cold temperature. They result from a contraction of muscles attached to your hair follicles, creating a shallow dimple on the skin surface and making the hair on your head, arms and legs literally stand on end. This gives your skin a strong resemblance to that of plucked poultry. Caused by the subconscious release of the stress hormone, adrenaline, add goose bumps to the sweaty palms, trembling hands and stomach butterflies many experience during strong emotions.

Hiccups.

Hiccups are involuntary contractions of the diaphragm that occur when the vagus nerve, which runs from brain to abdomen, becomes irritated. There are many causes, from digestive disturbances to sudden excitement. As you inhale with each spasm, the opening that permits air to pass through the voice box snaps shut, creating the characteristic "hic." From the literally hundreds of home remedies suggested for eliminating hiccups, the *NY Times* recommends: taking a deep breath and holding it, gargling with ice water, putting pressure on the eyeballs, or the tried-and-true method of breathing in and out of a paper bag. Mayo Clinic recommends contacting your physician if you have hiccups consistently for more than 48 hours.

Don't take them for granted: however common, each yawn, sneeze, shiver, goose bump and hiccup represents a small medical marvel.

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Not Your Imagination: Food Allergies Are On The Rise

Peanut-free tables in school cafeterias, grade schoolers armed with EpiPens, gluten-free products lining the supermarket shelves...it's impossible to miss the signs of a population coping with increasingly prevalent food allergies. In total, up to 15 million Americans suffer from food allergies. According to the Centers for Disease Control and Prevention, between 1997 and 2011, a significant spike occurred in American children, with one in every 13 now affected by food allergies. Additionally, wheat sensitivity (gluten) impacts more than six million adults, four times more common than it was 60 years ago. Scientists and physicians are working to discover the reasons behind the change. While there is no single definitive answer several credible theories are being considered.

Hygiene Hypothesis – Multiple studies show children raised on farms are less likely to have allergies, serving as the basis for this respected theory introduced two decades ago and gaining in credibility as new allergies continue to be diagnosed. Researchers believe exposure to animals and various microbes at a young age actually strengthens the immune system, according to the American College of Allergy, Asthma and Immunology. Children raised in overly hygienic homes, who overuse antibacterial soaps, no longer have to fend off “bugs” and infections, therefore, their immune systems overreact to things that should be harmless, such as wheat or peanuts.

Microbiota Hypothesis – Takes hygiene hypothesis a step further by proposing use of antibiotics and fluoridated water are killing off good bacteria in the intestinal tract, making it more difficult for the good germs to fight off the bad germs (*Nature Magazine, May 2012*). Evidence continues to mount indicating that children who are given antibiotics early in life are more likely to have food allergies.

Vitamin D Hypothesis – Another theory points to a lack of Vitamin D, as more time is spent indoors and more sunscreen is used when outside. Vitamin D deficiency has increased in the past 15 to 20 years, a noticeable increase in allergies in northern climates compared to the south, where people spend more time outside, reports *Pacific Standard Magazine*.



The Environment Hypothesis – The overall role of environment is key, say researchers in the relatively new field of epigenetics, who claim that while genetics definitely predispose an individual to allergies (children of allergic parents have an 85 percent chance of developing some kind of allergy themselves), it does not explain their recent rise. They're finding that environment can modify an individual's genetic makeup, and these modified genes can be passed on from one generation to the next.

Wheat Hypothesis – Modern varieties of wheat have been pinpointed as the reason celiac disease, an abnormal immune reaction to gluten, has quadrupled since 1950. Others disagree, citing studies that show no significant differences in gluten levels in wheat from the early part of the 20th century, and attribute the increased prevalence of celiac disease and gluten sensitivity to the not yet fully understood dynamics triggering other food allergies.

“Whatever has happened with celiac disease has happened since 1950,” affirms Mayo Clinic gastroenterologist Joseph Murray, MD, whose recent study involving frozen blood samples of Air Force recruits from the early 1950s clearly showed that today's young men were 4.5 times likelier to have celiac disease. “It suggests something has happened in a pervasive fashion from the environmental perspective.”

The Good News – Of the eight foods that account for 90 percent of all allergic reactions – milk, eggs, peanuts, tree nuts, soy, wheat, fish and shellfish – several may be outgrown by age 16. The majority of allergies to eggs, milk, soy and wheat diminish as children mature; only peanuts, fish and shellfish appear to be lifelong allergens (*Food Allergy Research and Education*). In addition, use of Oral Immunotherapy Treatment, in clinical trials at the Stanford Alliance for Food Allergy Research, shows promise in breaking down even the intractable peanut allergy. The desensitizing technique, in which a patient swallows a tiny dose of peanut protein repeatedly over time, tricks the body into not reacting, allowing the patient to reach high doses and delete or re-educate the cells producing antibodies.

For now, however, strict avoidance of a food allergen is strongly recommended, as even trace amounts can trigger severe skin, gastrointestinal and respiratory reactions requiring emergency treatment. People who are ‘food intolerant’ may also experience intestinal and abdominal upset, but they are simply unpleasant, and not life threatening symptoms.

Experts advise you to be aware that although most food allergies start in childhood, they can develop at any time in a person's life, even to foods previously eaten with no problem. If you or a family member are experiencing symptoms, please consult your personal physician.



Nutrition Corner

The New Yogurt Culture

Yogurt is recognized as a solid nutritional choice that delivers multiple benefits with each spoonful. It is made from pasteurized milk that has been fermented, and contains active cultures known as probiotics. Probiotics are live microbial food ingredients that, when ingested in sufficient quantities, provide notable health benefits. These living organisms have been recognized for centuries for their potential in fighting yeast infections, boosting the body's immune system and possibly preventing certain types of cancer. Particularly important as we age, adding probiotics to the diet repopulates the intestinal track with beneficial bacteria that protect against infection-causing toxins. In addition, yogurt offers plentiful calcium, potassium, protein, zinc, vitamins B6 and B12.

Greek yogurt adds even more to the full plate of benefits. In most Greek varieties, much of the liquid whey, lactose and sugar found in traditional yogurts is strained out, giving this yogurt a thicker, creamier texture while being lower in sugar, carbohydrates and sodium. Greek yogurt also contains twice the protein content of regular yogurt, helping to promote a feeling of fullness when eaten. A typical six-ounce serving provides 15 to 20 grams of protein, an amount equivalent to two to three ounces of lean meat. The richer taste makes it a satisfying substitute for more fattening ingredients such as cream cheese, mayonnaise, butter, sour cream or oil. The only caution: opt for low fat or fat free varieties,

as full-fat Greek yogurt often contains up to 16 grams of saturated fat, almost all of the daily allowance based on a 2,000-calorie diet.

How should consumers make smart choices when attempting to sift through the literally dozens of yogurts on the market today? First, be aware that not all yogurt contains the beneficial live and active cultures. Some brands are heat-treated to increase the shelf-life and decrease tartness, which kills off the good bacteria. For that reason, opt for those labeled with the “Live & Active Cultures” seal. Established by the National Yogurt Association, the seal guarantees specific minimum levels are present at time of manufacture – at least 100 million cultures per gram for regular yogurt, and at least 10 million for frozen. While the program is voluntary, and not monitored by the FDA, many manufacturers seek to earn the seal as proof that buyers will receive the full health attributes of their yogurt product.

Additionally, aim for a brand that includes at least 15 percent of the daily calcium requirement. Beware of additions like hydrogenated oils and artificial sweeteners. Finally, keep the calories down by skipping toppings and avoid yogurts that list sugar as the first or second ingredient.

Be sure and stock up on your healthy choices. A Harvard School of Public Health study that followed more than 120,000 people over the course of two decades showed that yogurt, among all foods, was most strongly correlated with weight loss. That's why yogurt remains a superfood mainstay – an easy-to-swallow way to fight infection, ingest nutrients and control weight.

