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Learning about Our Bodies

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Energy Control

By Sharon Guynup

Your thyroid powers your body.

Do you like to shoot hoops or swim? Without the help of your thyroid, you wouldn't have the energy to compete—or to get off the couch. Your thyroid is a 1-ounce gland that controls the speed of your heartbeat, the speed with which your body burns calories, and the growth of your bones, teeth, and brain. The pinkish, butterfly-shaped gland wraps around the windpipe in front of the throat. It affects nearly every organ in your body.

The thyroid is your body's factory for a *hormone,* or body chemical, called *thyroxine.* The thyroid secretes this chemical into your bloodstream, which is your body's superhighway. The bloodstream delivers the chemical's message to your cells: Get to work! Thyroxine controls your body's *metabolism.* That means it sets the pace for how quickly cells transform food into energy. The hormone also affects the speed of many chemical reactions in your body.

The thyroid is one of many *endocrine glands* that control body functions. The glands are part of a system that regulates hormones. When the thyroid springs into action, the original work order comes from your brain. From atop your brain stem, an organ called the *hypothalamus* keeps tabs on hormone levels in your body—about 200 in all. When thyroxine levels drop too low, the hypothalamus sends off a warning to its neighbor, the *pituitary gland.* That pea-sized "master gland" kicks the thyroid into production—and kicks you into gear.

Pay attention to your body: Diseases of the thyroid are common. These problems affect millions of Americans. An overactive thyroid *(hyperthyroidism)* can affect a person's heart and make the person skinny and nervous. People with an underactive thyroid *(hypothyroidism)* feel exhausted, gain weight, and are often cold.

Pollution may cause thyroid disease. Some industrial chemicals are absorbed by the body through air, water, or food. Those substances can disrupt the body's hormone balance. Toxins from smoking cigarettes or chewing tobacco can damage the thyroid too.

The good news: There are treatments for some thyroid conditions. If you are like most people, your body's energy control system keeps everything in balance so that you're raring to go!

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Thyroid

Alias: Butterfly gland

Mission: Controls heart rate, metabolism, and growth of bones, teeth, and brain

Power: Speeds work of organs and chemical reactions

Weaknesses: Damaged by pollution, which disrupts hormone balance; hurt by radiation, which can cause cancer; harmed by tobacco use, which may triple the threat of thyroid disease

Upgrades: Iodine in food and salt keeps the thyroid in running order.

Maintenance: Watch for symptoms of an underactive thyroid (hypothyroidism), such as sluggishness, weight gain, and a constant feeling of cold. Look for symptoms of an overactive thyroid (hyperthyroidism), such as weight loss and nervousness. Do not smoke or chew tobacco.

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Sense and Sensibility

By Kirsten Weir

A new look at the weird and wonderful senses of taste and smell

Look. Listen. When it comes to the senses, eyes and ears get most of the attention. But don't count out your nose and tongue. The senses of smell and taste are just as remarkable.

The flavor of a strawberry and the stench of dirty socks are actually made up of invisible, natural compounds. "Smells and tastes are chemicals," explains Charles Wysocki, who researches smell at the Monell Chemical Senses Center. At that scientific institute in Philadelphia, dozens of scientists study nothing but smell and taste. Most people think of chemicals as bad things, Wysocki says. But if we couldn't detect them, we'd never experience the flavor of chocolate or the delicious aroma of baking bread.

The Nose Knows

Smelling serves some important purposes, says Wysocki. Scientists believe that early life-forms developed the sense to help them recognize other members of their species. Sniffing also helped our early ancestors locate foods that were safe to eat.

Scientists say the human nose can detect about 10,000 different scents. Sometimes, we're not even consciously aware of those odors. Lab studies have found that people can tell the difference between the scents of friends and strangers as well as between those of men and women. We can even smell fear. When volunteers smelled sweat samples taken from freaked-out first-time skydivers, the fear centers in the sniffers' brains switched on. Scientists say tuning in to other people's alarm could help us avoid danger.

Have you ever caught a whiff of a certain scent and had an old memory pop up? Despite popular belief, Wysocki says, smells in and of themselves aren't actually more memorable than other sensations are. But the part of the brain that processes smells is located next to the limbic system—the area in charge of memory and emotions. When you smell something, "it's basically like taking an interstate highway" from the nose to the limbic system, explains Wysocki. Sensory information from the eyes and ears, on the other hand, must travel farther to reach the limbic

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system—"like taking county roads." That's why smells are so often emotional, Wysocki says.

Tasty Basics

We can detect a wide range of smells, but our taste buds pick out only a few flavors. For a long time, scientists believed only four basic tastes existed: sweet, salty, sour, and bitter. Recently, they added a fifth taste to the list: umami. Umami is described as the savory taste in foods such as soy sauce, mushrooms, and tomatoes. Not all scientists agree that umami is one of the basic tastes, though. And some scientists argue that many more basic tastes have yet to be discovered. The taste case isn't closed yet.

Scientists do agree that the sense of taste evolved to keep us healthy, says Linda Bartoshuk, a taste researcher at the University of Florida. We like sweets because in the ancient world, sugar was a sign that food contained a lot of energy and was probably safe to eat. On the flip side, toxic plants often taste bitter. Our ancestors developed a dislike for bitter food to protect them from poisons.

For some people, bitter foods taste especially awful. About 15 percent to 25 percent of people are supertasters. Those folks "have more taste buds. They experience taste much more intensely than other people do," Bartoshuk says. Do you detest veggies such as broccoli or Brussels sprouts? If so, you might be a supertaster!

The sense of taste doesn't change much as you get older, Bartoshuk adds. But fortunately for supertasters (and regular tasters who just don't like broccoli), there's one exception to that rule. The ability to taste bitter flavors tends to fade with age.

Partners in Sense

The senses of taste and smell work hand in hand. Much of a food's "flavor" actually stems from its smell. When you bite a lemon, your tongue just tells you it's sour. The fruit's aroma tells your brain whether you've swallowed a lemon or a lime. "The sense of smell is providing a lot of information about what you're eating," says Wysocki. That close link explains why foods often taste a bit off when you've caught a cold and your nose is congested; smell information is being blocked.

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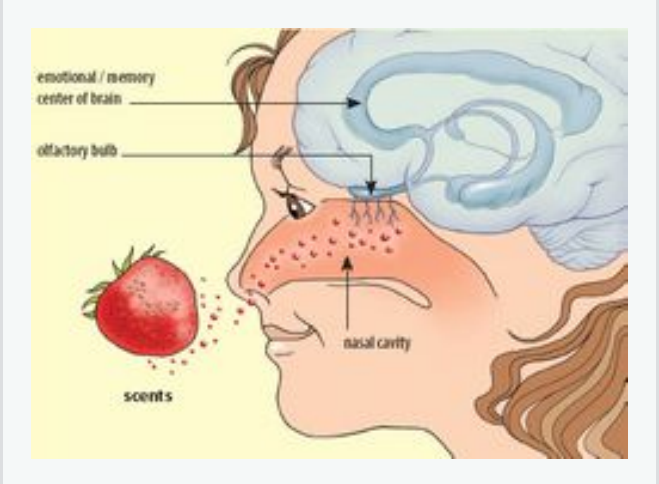
As interesting—and important—as the chemical senses are, there's still a lot we don't know about them. One mysterious smell condition is phantosmia, in which people experience phantom smells. One woman who wrote about her case in *The New York Times* smelled the imaginary odor of dirt every day for a year—until it was replaced with the aroma of burned chili.

Like vision and hearing, the sense of smell becomes less accurate as we age. Some people even develop anosmia, a loss of the sense of smell that can be caused by infections, diseases, pollutants, and some medications. Smoking cigarettes can also damage the sense of smell. People who don't smell things well are often bored by food, and they may have trouble eating enough to stay healthy.

Humans have always had the ability to taste and smell. But clearly, we haven't completely figured out the chemical senses. There's much to learn and scientists are making discoveries. Still, when it comes to what we know about the senses, this is just a taste.

Take a Whiff

When you sniff a strawberry, invisible chemicals are drawn into your nose. Those odors make contact with receptor cells lining the nasal cavity, a large fluid-filled space behind the nose. The chemicals attach to the cells and switch them on. Information about the chemicals runs through nerves to the olfactory bulb (the brain's processing center for odors), which translates the information and interprets it as the scent of a strawberry.



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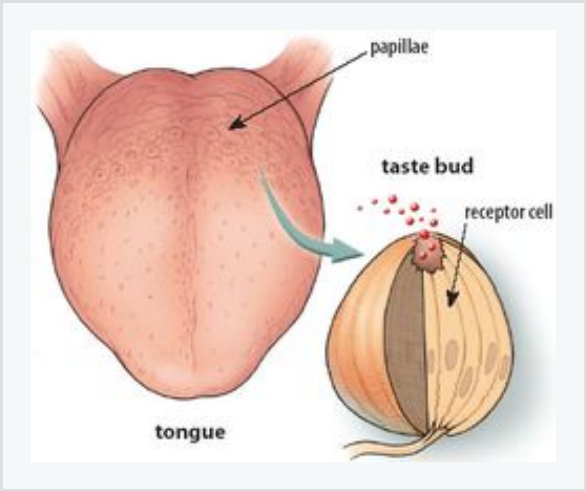
It's a Miracle

What if everything you ate tasted as sweet as candy? The miracle fruit can make it happen. The small red berry, known in scientific circles as *Synsepalum dulcificum*, doesn't taste like much on its own. But it contains a protein that interferes with the taste receptors on your tongue, blocking the ability to detect sour flavors. For an hour or so after eating miracle fruit, grapefruit taste like jelly beans and lemons taste as sugary as lemon pie. How sweet is that?

Stick Out Your Tongue

Your tongue is covered with bumps called papillae. About six taste buds are buried inside each papilla. Each taste bud, in turn, contains hundreds of taste receptors. When a food, such as a lemon, touches your tongue, chemicals in that food activate the receptors in the taste buds. The taste buds send the taste information through nerve cells to the brain. It takes less than a second for the brain to translate that information, telling you that what you taste is sour. Pucker up!



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Your Skin Unmasked

By Margie Markarian

Find out what's going on beneath the surface.

What do you think is the body's largest organ? It's something that covers each of us from head to toe. And by the time you're an adult, you will have about 8 pounds of it. It's skin!

"It keeps your insides in and the outside out," says Linda Franks, a New York City *dermatologist* (skin doctor) who treats teens. Without skin, you'd look a lot like a piece of meat at the supermarket. Not exactly a pretty picture!

That's not all. "Skin acts as a shield for your body," says Ron Davis, a dermatologist who teaches at Tulane University's School of Medicine in New Orleans.

Skin also helps

- fight off infections,
- maintain body temperature,
- protect the body's organs,
- give us our sense of touch.

Skin's color and texture also helps define what you look like. But its importance is more than just skin deep. Read on to learn more about keeping your skin as healthy as it can be.

Skin Problems

It's easy to take skin for granted until something goes wrong or changes. Rashes, pimples, warts, and athlete's foot are just a few common (and annoying!) skin concerns for teens. "It's hard not to be self-conscious about skin problems," says Davis, because many things that happen to skin affect the way you look.

Most skin problems go away with time, proper skin care, and the help of remedies you can buy at the store. More stubborn or serious skin problems may need a doctor's attention or prescription medicine to help them heal.

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Here are some examples of skin problems many teens face, where they come from, why they show up, and how you can take care of them.

Acne and pimples. Hormonal changes in the body trigger more activity in the skin's oil glands during the teen years. Sometimes, the glands produce more oil than the skin needs to stay moist. When that happens, the oil, sweat, bacteria, and dead skin cells can mix together and plug up the *pores* (tiny holes) on your skin's surface. The result can be pimples, whiteheads, blackheads, or full-blown acne.

Rashes. Rashes happen when you come in contact with something that irritates your skin. Rashes are usually red, itchy, warm to the touch, and sometimes bumpy. Allergies to foods, plants, or animals sometimes cause rashes. So do sensitivities to soaps, fragrances, cosmetics, fabrics, chemicals in household products, and even heat from the sun.

Cuts and scrapes. Ever had a small splinter that caused giant-sized pain? a deep cut that bled a lot and needed stitches? Then you probably experienced an injury to the *dermis*, the thicker layer of skin that lies just beneath the exposed layer (the *epidermis*). The dermis is home to nerve endings (that's why a sliver hurts so much) and blood vessels (that's why there is so much bleeding when you get a deep cut).

Warts. Warts are raised lumps of skin and are usually found on hands and feet. They are caused by viruses. Warts are usually harmless infections but can be annoying or make you feel self-conscious. Products available in stores can treat warts on hands. Warts on the bottoms of the feet usually need to be removed by a doctor because they make walking uncomfortable.

Bacterial and fungal infections. An opening in the skin can lead to infections from bacteria or a fungus. Athlete's foot is an example of a fungal infection that thrives in dark, moist areas. It spreads easily in locker room showers. Body piercings and tattoos are at a high risk for bacterial infections. That is why piercing and tattooing need to be done under super-sanitary conditions. The body parts that get pierced or tattooed also need to be kept clean during the healing period.

The Keys to Healthy Skin

The surest route to healthy skin is to keep it clean. Experts say to wash your face twice a day with warm water and a mild soap. When acne breakouts occur, try using a cleanser that contains

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salicylic acid. You can also spot treat pimples with an ointment containing *benzoyl peroxide*. Both of those ingredients help fight the bacteria that cause acne breakouts.

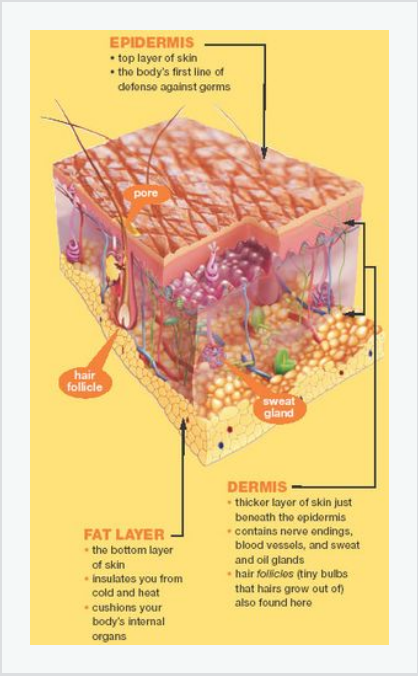
It's natural to want to look your best, but it's also important to be realistic. "It's impossible to have perfect skin—we all have blemishes of some kind," says Ira Skolnik, a Concord, Mass., dermatologist. That even goes for celebrities and models! Many times, magazine photos are changed to make skin look perfect, Skolnik says.

Another key to healthy skin is to always wear sunscreen. "The sun exposure you get before you are 18 years old plays a big role in the health of your skin later in life," says Skolnik. Exposing your skin to the sun (or a tanning bed) without protection can age skin early, and may also lead to skin cancer.

The good news? There is a lot you can start doing right now to ensure that you'll have healthy skin for a lifetime! "If you take care of your skin," says Skolnik, "it will take care of you."

Skin Deep

There's more to skin than what you see on the surface. Here's a look at what goes on in our skin's three layers.



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Miss Florida Teen: Face-to-Face With Skin Cancer

Kayla Collier, 19, will never forget the day she went shopping for a dress to wear to a dance. It was the same day her mother noticed a suspicious spot on her back.

AP Images

"I was in the dressing room trying on a green and gold halter dress," recalls Collier, who was crowned Miss Florida Teen in 2009. "She asked if I had bumped into something or scratched my back because I had a dark brown spot that looked like a rippled scab."

When she showed the spot to a dermatologist, he removed it right away and sent it to a medical lab for testing. She didn't think it was anything to worry about. A week later, however, she was shocked when the test showed she had *melanoma*, a serious form of skin cancer. "I thought, *This can't be happening. I'm only 16 years old.*"

Fortunately, Collier's cancer was caught early. She had surgery to remove it, and the cancer has not returned. But for the rest of her life, she and her doctors will have to check her skin regularly for suspicious moles and growths.

Skin cancer is the most common form of cancer in the United States, according to the American Cancer Society. Ultraviolet rays from the sun and indoor tanning equipment are the most common causes of skin cancer. Collier's cancer was likely triggered by both.

"I live in Florida, am fair skinned, and sunburn easily," says Collier. "I always wore sunscreen at the beach but not every time I went out to play and run around in the yard with my brothers."

Collier regrets ever using a tanning bed. She went no more than five times in her life, she says,

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during the spring of the year melanoma was found. “I wanted to look tan before a pageant,” she says.

As part of her Miss Florida Teen platform, Collier frequently talks about preventing teen skin cancer at events sponsored by the American Cancer Society. She has even given speeches to lawmakers in her state about creating laws that would limit teens’ use of tanning beds.

Try It!

Learn more about protecting your skin from the sun. Research the topic online (check your sources carefully!). Then make a list of sun-smart tips.

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Uninvited Guests

By Kirsten Weir

Meet the parasites, microbes, and creepy-crawlies in (and on) you.

You're Never Alone. Sleeping in your bedroom. Taking a shower. No matter where you go, you have company. A lot of company, in fact: wriggling parasites, a bounty of bacteria, and other assorted stowaways that call your body home sweet home.

You've spent your whole life with those miniature minions hiding inside you. Isn't it time you got to know them?

Wild and Woolly

Most of the organisms that live on you are too small to see. But you can smell them. "Almost all of the odors your body has are microbial," says Rob Dunn, a biologist at North Carolina State University and author of the book *The Wild Life of Our Bodies*. (In other words, the smells come from microbes, microscopic organisms such as bacteria.) Bacteria on your feet and in your armpits feed on compounds found in sweat—and emit stinky-smelling gas in the process. Bacterial waste products are also to blame for morning breath and for the smell of unwashed hair.

Just how many bacteria are you harboring? "For every cell you have, you probably have ten times as many microbial cells," Dunn says. Your body contains about ten trillion human cells, by some estimates, and approximately one hundred trillion microbial cells. To put it another way: there are more of them than there are of us.

Many of those bacteria hang out on your skin. Dunn and his fellow researchers recently looked in belly buttons to see what kinds of microbes were living there. They stuck cotton swabs into 90 people's navels and found around 1,400 species—many of which had never been seen before. "Something like 600 of those species are new to science," Dunn says.

As many bacteria as there are in your belly button, there are a lot more inside your belly. Of all the places where bacteria hide, your gut "is the most wild and woolly," Dunn says. Along the

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walls of your intestines, bacteria form thick mats called biofilms. Those bacterial colonies help you digest food. Some gut bacteria even produce vitamins that keep you healthy.

Just as there are four major blood types, there seem to be three (or maybe more) different "gut types." In 2011, scientists studied people from a number of ethnic backgrounds and found they each had one of three different bacterial ecosystems in their bellies. Scientists aren't sure what determines a person's gut type; it doesn't seem linked to ethnicity or gender, for instance. But, they say, your microbe mix might affect your health. Some gut types could make a person more or less likely to become overweight or develop colon cancer. Some day, doctors may even prescribe particular drugs or recommend certain diets based on an individual's personal gut type.

Creepy-Crawlies

Bacteria aren't the only organisms using your body as a jungle gym. Humans often host tiny parasites such as lice, speck-sized insects that hide in your hair and feed on your blood. Lice spread from person to person, but it's a myth that they're linked to bad hygiene. The bloodsucking bugs are equally happy in clean or dirty hair.

You can spot lice—you'd probably need a magnifying glass—but microscopic *Demodex* mites are invisible to the naked eye. "The majority of people have mites living in their eyelash follicles," says entomologist William Krinsky of the Yale Peabody Museum of Natural History. Those microscopic cousins of spiders live in the eyelashes and eyebrows of up to 80 percent of people, he says.

Plenty of people also host itty-bitty worms. Kids in North America are commonly infected with pinworms, which live in the intestines. If an infected person doesn't wash his or her hands well after going to the bathroom, microscopic worm eggs can wind up on the hands. From there it's easy for the eggs to find their way onto other people's fingers, and from there into their bellies. The worms often cause no symptoms, but some people experience itching or mild stomach pain. Luckily for them, the worms are easily killed with medication.

For most of human history, people were home to all kinds of worms. Today, though, worm infections are relatively rare in the developed world. In fact, some researchers argue that our sanitary, worm-free existence could be making us sick. Rates of allergies and autoimmune

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diseases have skyrocketed in recent years. (Autoimmune diseases occur when the immune system attacks the body's own tissues.) Some experts think that without worms (and many other organisms) to fight, our immune systems have gotten confused and turned on our bodies instead. That idea is known as the hygiene hypothesis.

A few desperate people have put the worm theory to the test. They've swallowed hundreds of worm eggs—on purpose—in hopes of curing their autoimmune diseases. Some say their symptoms have disappeared thanks to their squirmy new friends. But scientists are just beginning to study whether worm infections truly help. Until they've researched the theory, swallowing parasites is probably not the brightest idea.

The Good Guys

You've gotten to know just a handful of the thousands of species that live inside (and on) you. Are you freaked out yet? Don't be. "Most of the species you have are good," says Dunn. Bacteria on your skin and inside your gut prevent other, more harmful bacteria from moving in and making you sick. Besides, you couldn't get rid of your stowaways if you wanted to. "Every time you shake someone's hand, touch a desk, or climb a tree, you pick up new species," he says.

Scientists are still figuring out what most of those species do. Many of them can survive only inside the human body, so researchers haven't been able to study them in the lab. But the fact that so little is known about the microbes is good news for anyone interested in becoming a scientist, Dunn says. "You don't have to study the Amazon to discover new things," he explains. "You can just study your cousin!"

Mind Control

Could a single-celled creature control your behavior? *Toxoplasma gondii* is a parasite that infects mice, but to complete its life cycle, it must get into the gut of a cat. To do that, *Toxoplasma* changes a mouse's brain chemistry. The infected mouse craves danger and loses all fear of felines.

Predictably, the fearless mouse is eaten, the cat is infected, and *Toxoplasma* goes home happy. End of story? Not quite. *Toxoplasma* infects humans too. It usually has no symptoms—but one study

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found people infected with *Toxoplasma* were more likely to get in car crashes. Scientists are still sorting out the details, but it seems possible that the parasite could be playing a cat-and-mouse game with the human brain.

Washing Up

If you're constantly covered in bacteria, is there any point to washing your hands? Absolutely, says biologist Rob Dunn. It's important to wash away bad bacteria and keep the good. Germs that cause illnesses such as colds and the flu can be wiped out with a good soap-and-water scrubbing. "Washing hands reduces the chance of cold and flu," Dunn says.

However, antibiotic gels, wipes, and soaps are a bad idea, he says. Many contain a compound that kills some bacteria but not others. It can wipe out the helpful bacteria on your skin, making room for harmful bacteria to thrive. "Scrubbing everyone with antibacterial wipes is far more likely to make us sick than healthy," Dunn says. So skip the hand sanitizer and go for simple suds (with regular soap) instead. "Washing hands with soap and water saves millions of lives a year," he says. "That's hygiene we should be more serious about."

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What's Your Eye-Q?

By Jessica Cohn

Find out how much you know about healthy eyes.

Have you heard that you shouldn't cross your eyes because they can get stuck that way? In truth, that kind of thing happens only in cartoons. Yet the saying is repeated again and again.

What other eye-care "facts" are really fiction? Let's take a closer look at some common "eye-deas" about the eyes.

Eating carrots improves vision.

Fiction. The saying, however, is based on fact. Carrots have vitamin A, which helps keep vision strong.

"You never see any rabbits wearing glasses!" jokes Dr. Stuart R. Dankner. He's a pediatric *ophthalmologist* (a doctor who treats kids' eyes) and a spokesperson for the American Academy of Ophthalmology (AAO). "Seriously, carrots contain high concentrations of carotene and vitamin A, both essential ingredients for the retina to remain healthy."

Milk and egg yolks, among other foods, have vitamin A too. The AAO says a balanced diet will give you all the vitamin A you need.

Don't look directly at the sun. You'll hurt your eyes.

Fact. Looking at the sun too long *can* cause temporary and permanent problems. Some people can't read afterward. Others see dark patches. Most people recover fully, according to the Moorfields Eye Hospital in London. But 10 percent of patients continue to have problems, such as no longer being able to see license plate numbers twenty-five yards away. "Sunlight is not only responsible for [light sensitivity], but it can also damage the retina. It's always advisable to wear 100 percent UVA- and UVB-protected sunglasses all year round," says Dankner.

Sitting too close to the TV can damage eyes.

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Fiction. It won't permanently damage your eyes, but it can cause some discomfort. You blink less often when watching TV, so your eyes can feel sensitive. The same thing can happen when you stare at the screen of a computer, cell phone, or MP3 player. Staring too long can even cause *double vision*, or seeing two images of one object. So look away often—at least every twenty minutes. Sitting too close to the TV—less than four feet away—also may be responsible for headaches and eyestrain.

Reading in dim light will ruin your eyes.

Fiction. "Reading in dim light does not ruin your eyesight," says Dankner. "It can, however, cause eyestrain and headaches." Good lighting can help prevent discomfort, so why not use it? And remember: If your eyes become red and tired, skip the eye drops. They are not meant for eyestrain. Using drops can lead to more redness over time. A special kind of eye drops called artificial tears may be used with a doctor's OK.

Wearing glasses or contacts weakens your eyes.

Fiction. Corrective lenses correct and sharpen eyesight, not weaken it. A corrective prescription usually becomes stronger as a person ages; perhaps that's how this wrong idea started. People noticed that eyeglass wearers needed stronger lenses *over time.*

However, contact lenses that are worn too long, or are slept in when they are not meant for overnight use, *can* cause eye infections. Check with your doctor about how to wear your contact lenses correctly.

Sweeteners make your eyes sensitive to light.

Fact. Some people report having sensitive eyes after eating foods with artificial sweeteners. Some medicines, such as diabetes drugs, can also cause sensitive eyes.

"It appears that sweeteners such as aspartame have been associated with allergic responses. Migraine headaches, dizziness, and light sensitivity are some of the side effects that may occur," says Dankner.

Be sure to tell your eye doctor about any changes in your vision.

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Eye Know-How

Want healthy eyes? Keep these tips in mind.

1. Kids and teens should have an eye exam every two to four years, according to the University of Michigan Kellogg Eye Center.

2. Wear *ultraviolet*-absorbing eyewear when outside. (Ultraviolet rays from the sun can burn.)

3. When playing sports, using tools, or doing chores such as mowing the lawn, wear protective eyewear.

4. Reduce glare on your computer screen. Control light from windows with blinds and shades.

5. Adjust your computer screen. Place the center five to nine inches below your line of sight.

6. Use the "20/20/20 Rule" when staring at a screen. Take a twenty-second break every twenty minutes. Then focus your eyes at least twenty feet away.

7. If you feel eyestrain during an activity such as watching TV, add light or take a break.

8. Do not use eye drops without an eye doctor's OK.

9. If you wear contact lenses, clean them daily and replace them on the recommended schedule.

10. Eat a balanced diet to help keep your eyes moist and healthy.

Look Into Your Eyes!

Here are the parts of the eye.

Cornea: Helps the eye focus as light makes its way through

Iris: Colored part of the eye; helps control how much light goes through pupil

Pupil: Black circle in the center of the iris; lets light enter eye

Sclera: The protective white of the eye

Retina: Tissue that lines the inside of the eyeball

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Lens: Focuses light rays onto the retina

Optic Nerve: Carries signals from retina to brain

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What's Up, Doc?

Why do we sweat?

—Kaitlin B., Pennsylvania

Sweat happens from the inside out. When the body gets too hot, it uses sweat to regulate its temperature. "Sweat is produced by specialized glands in the skin called eccrine glands," explains Dr. Joely Kaufman, assistant professor of dermatology at the University of Miami. When we exercise or spend time outside on a hot day, our bodies get hot and our sympathetic nerves (they're the part of our nervous system that deals with stress) signal the eccrine glands to release sweat to the skin. Eccrine glands are located right underneath the skin everywhere on our bodies (except for our lips and the insides of our ears).

When the sweat "evaporates off of the skin, it carries the heat from the body into the environment," says Kaufman. This evaporation of sweat off the skin is what cools us down. Sweat is made up mostly of water but does include some sodium, which gives our sweat a salty taste. It is released not only when we're hot but also when we're in stressful and emotional situations; that is why when we're nervous, our palms become sweaty!

Why do people get light-headed?

—Cori V., Hawaii

Most of the time, a temporary drop in blood pressure is what causes light-headedness. Blood pressure is the force created by blood as it pumps through your body. The drop in blood pressure can be caused by many different things, such as dehydration or standing up too fast. When blood doesn't flow properly to the brain, we feel light-headed. Sometimes the dizzy feeling happens right before fainting.

There are also other potentially more dangerous reasons for light-headedness. Certain medications can bring on the woozy feeling. So can cigarettes and alcohol. Heart-related medical conditions can also cause the drop in blood pressure that causes light-headedness. If the feeling comes often, or leads to fainting, it's worth seeing a doctor. But usually, that light-headed feeling is telling your body to get hydrated, to eat something, or just to relax.

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The Growth Factor

By Jeff Ives

What you need to know about growing UP

All kids wonder how tall—or short—they are going to be one day. Growing taller happens to each person on a different schedule, and it's hard to say what that growth will feel like or how long it will last.

To get some answers, *Current Health* spoke with the former president of the American Academy of Family Physicians, Dr. Ted Epperly. He's been talking with kids and families about growth for more than 25 years. Here are some typical questions he's answered for his patients.

How tall will I be?

Many formulas are used to predict a child's height. All of them begin by looking at how tall the parents are and how quickly the child is growing. Even though those formulas are fairly accurate, they can also be off by as much as 4 inches.

"It's unusual for a formula to perfectly predict how tall a child will be, but by looking at the parents, you can often get a pretty good idea," says Epperly. It is also possible for a child to outgrow his or her parents, so even the most basic formula can be wrong.

When will I start growing?

Chances are you're growing right now, but normal growth is nothing compared to a *growth spurt*. That is a period of intense growth that happens when the body releases special hormones that make the bones grow. It's hard to say just when that will start to happen for each person.

"A person's genes are programmed to stimulate growth at different times," says Epperly. Typical growth spurts are 2 to 5 inches each year. The biggest growth spurt Epperly has seen was 12 inches in one year!

While growth spurts vary from person to person, most girls start a growth spurt around age 10

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and will see their fastest growth at about age 12. Most boys will start a growth spurt just before age 13 and will grow even faster at 14. Usually people are finished growing by the time they reach their early 20s.

Do growth spurts hurt?

Sometimes kids complain of growing pains during a growth spurt. A fast period of growth can hurt when there are changes in the tendons that attach muscles to bones. An example of this is a common condition called Osgood-Schlatter. In that condition, "a big bump forms where the quadricep, or the muscle on the front of the thigh, attaches to the shinbone," says Epperly. "When kids grow too fast, it causes pain."

A fast growth spurt can also lead to clumsiness. "All of a sudden if [kids] have too rapid a growth going, it can be hard for kids to control their body," says Epperly. That can result in pain from bumping into things, but good coordination eventually comes back.

Am I tall enough?

Many kids and families worry about children who seem to be growing too quickly or too slowly. Fortunately, doctors monitor growth for possible health conditions and problems. That's why they mark down your height at each checkup. They compare your growth over time to a chart put out by the Centers for Disease Control and Prevention that shows the normal growth curve.

If a child is growing much faster than the usual growth curve, a health issue may need to be addressed. Today, being overweight, or obese, is a major reason a child might be ahead of his or her age on the growth curve. If that is the case, growth can be slowed with better nutrition and exercise.

If a child is growing too slowly, doctors may look at nutrition as a cause. Lack of proper nutrition can slow normal growth. The child may also have a more serious medical condition that needs to be looked at.

No matter how your body is growing, the most important thing is to learn how to be comfortable with who you are. Even though there are ways to help kids grow faster, such as giving them

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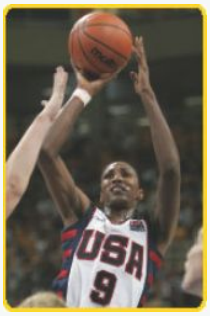
injections of growth hormones, doctors usually prescribe them only if the child really needs them.

"I actually work with families to try and put their minds at ease," Epperly says. "There's nothing wrong with being below average height." For there to be an "average," he says, half the population is above the average and half the population is below the average.

So whether you end up being tall or short, you're sure to have lots of company!

The Height Factor

Many people automatically assume that it's good for a man to be tall but awkward for a woman to be tall. These world-class athletes beg to differ.



Garrett Ellwood/NBAE/Getty Images

Lisa Leslie
Sport: basketball
Height: 6 feet 5 inches

Superstar WNBA player and Olympic gold medalist Lisa Leslie tells *Current Health* that she was always taller than her classmates. "I didn't feel awkward, because being tall and being smart allowed me to get put into a lot of leadership roles early," she says. She remembers being left in charge of her second-grade classroom when the teacher left the room. But throughout her life, there have been disadvantages. "You stick out so much that people constantly have to make a comment about your height," she says. "That gets tiring, and that still happens today." In the 2008 Olympics, Leslie won her fourth gold medal and retired from the WNBA a year later.

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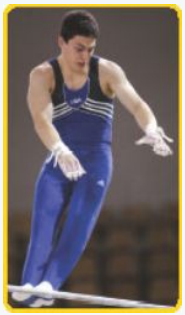

Volker Minkus

David Sender

Sport: gymnastics

Height: 5 feet 2 inches

David Sender is one of the best young gymnasts in the United States. He learned to backflip at the age of 6, and he's excelled at gymnastics ever since. Now he's well on his way to being a member of the 2008 U.S. Olympic team after losing the chance in 2008 due to an ankle injury. "I was always—and still am—one of the shortest people in any group I'm in, but it's never hindered me in any way," he told *Current Health*. He says his height is one of the factors that make him a good gymnast. "Since we're constantly flipping ourselves around or lifting ourselves in odd positions, it's usually an advantage to be small." Beyond his success in gymnastics, Sender has also earned a degree in biological sciences from Stanford University.

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