

MAYO CLINIC HEALTH LETTER

Tools for Healthier Lives

VOLUME 28 NUMBER 1 JANUARY 2010

Inside this issue

HEALTH TIPS 3

Outsmart your supermarket.

NEWS AND OUR VIEWS 4

Stopping **proton pump inhibitor** use may cause heartburn. **High resting heart** rate possible health risk for women.

ENDOMETRIAL CANCER 4

Caught early, often curable.

WHAT'S IN YOUR MEDICINE CABINET? 6

It could save you a trip to the doctor.

SPICE UP YOUR RICE 7

New look at an old grain.

SECOND OPINION 8

Coming in February

HERNIATED DISK

Conservative care often works.

JOINT REPLACEMENT ADVANCES

New ways to manage pain.

AGING OF YOUR SKIN

Many changes are normal.

TREATING DIARRHEA

Sometimes basics aren't enough.



Dental enamel

Hard, but not invincible

Most people think of skeletal bone as being the hardest substance in the body. But, actually, tooth enamel tops skeletal bone for hardness.

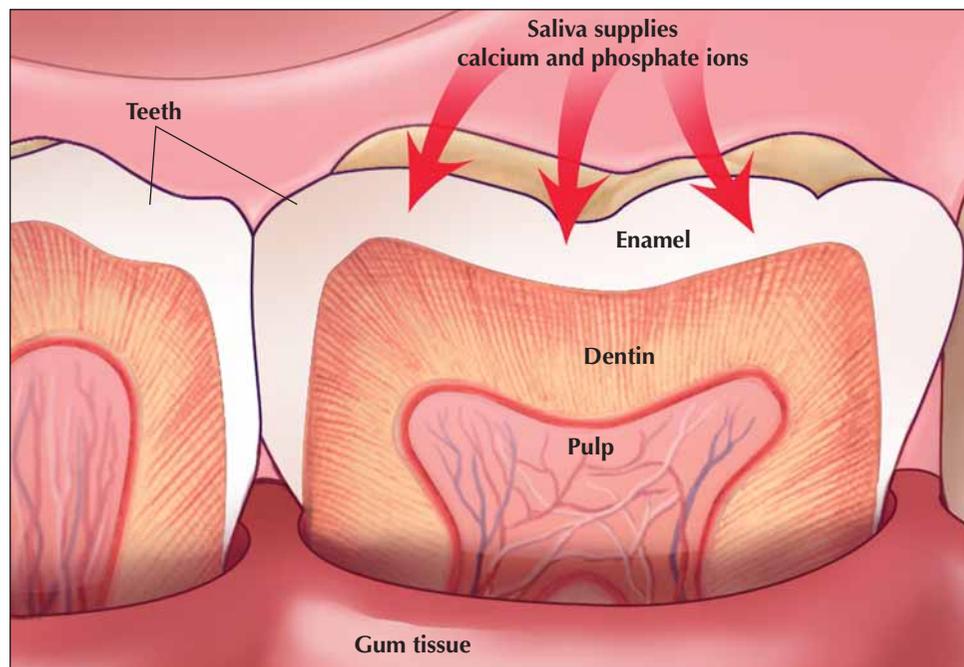
Tooth enamel is a thin layer of calcified material that covers the surface of each tooth's visible portion (crown). Even with good dental hygiene throughout your life, the enamel protecting your teeth may face some serious tooth decay challenges as you grow older. Knowing what to look out for and what you can do to

promote an enamel-friendly setting in your mouth can make a big difference in your oral health.

Mouth chemistry

Tooth enamel along with adequate saliva and fluoride intake can provide the best defense your teeth have against the abrasive acids and chemical mix brought on by what you eat and drink. Saliva is necessary to help repair the earliest stages of tooth decay.

Saliva supplies high levels of calcium and phosphate particles (ions) that enhance protection of the tooth's enamel surface. The calcium and phosphate ions act to slow loss of



Saliva supplies high levels of calcium and phosphate particles (ions) that enhance protection of the tooth's enamel surface. These ions act to slow loss of tooth enamel and promote rebuilding of the enamel.

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tooth enamel (demineralization) and promote rebuilding of tooth enamel (remineralization).

Saliva protects your mouth by washing away food and the sticky film of acid-producing plaque that can cling to teeth. Saliva also:

- Neutralizes damaging acids
- Limits bacterial growth that can dissolve tooth enamel

The mineral fluoride is an important enamel ally that can make teeth stronger and can enhance saliva's remineralizing, anti-decay properties. Fluoride is a key component of many anti-cavity toothpastes, gels and rinses. Small amounts of fluoride are added to public water supplies in many communities.

Generally, if you're brushing twice daily with fluoride toothpaste and drinking fluoridated water, the surface of your teeth gets sufficient exposure to fluoride. However, if you tend to develop cavities despite getting fluoride from these sources, your dentist may recommend additional fluoride.

If you drink primarily bottled, well or filtered water, you may not be getting adequate daily fluoride,

and you may want to ask your dentist about other methods of fluoride application. Although some bottled waters contain fluoride, levels are mostly suboptimal for oral health purposes. The Food and Drug Administration doesn't require fluoride content to be listed on a bottle of water. That information is available if you contact the manufacturer of the product.

As for in-home water filters, some of them — such as those that use reverse osmosis or those that distill the water — remove fluoride from the water as it passes through. If your primary source for drinking water includes a water-filtration system, it may be best to have your water tested for fluoride levels.

But even with adequate fluoride, a lack of saliva — xerostomia (zeer-o-STO-me-uh), better known as dry mouth — can throw off the normal balance that your teeth rely on to stay healthy.

The problem with dry mouth

If you have a persistent lack of saliva — even if it seems like nothing more than a nuisance — have it

evaluated by your doctor or dentist. Beyond a sensation of dryness in your mouth, you may experience:

- Sores or cracked skin at the corners of your mouth
- Saliva that seems thick and stringy
- Bad breath
- Difficulty speaking or swallowing
- A burning or tingling sensation on the tongue
- An altered sense of taste
- Increased plaque on your teeth
- Increased tooth decay or gum disease

In many instances, the problem of too little saliva is related to medications that you may be taking. Dry mouth is a side effect of many common medications, including both nonprescription drugs and prescription drugs. Among the more likely

Ways to increase mouth moisture

You can do a number of things to help boost the moisture level in your mouth, such as:

- *Chewing sugar-free gum or sucking on sugar-free hard candy* — Look for sugarless products that contain xylitol. Some products feature the remineralizing agent Recaldent, which adds calcium and phosphate to teeth.
- *Avoiding lemon-flavored hard candy* — Lemon candy makes saliva acidic, which increases risk of tooth decay.
- *Sipping water* — Do so regularly throughout the day. Sucking on ice chips is another good option. Don't sip on acidic products, including diet and regular sodas.
- *Trying nonprescription saliva substitutes* — These are typically sprayed or rubbed in the mouth. Look for products containing carboxymethylcellulose or hydroxyethyl cellulose, such as Biotene Oral Balance.
- *Breathing through your nose* — It's less drying than open-mouth breathing.
- *Adding moisture to the air* — Use a humidifier while you sleep.

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Mayo Clinic Health Letter (ISSN 0741-6245) is published monthly by Mayo Foundation for Medical Education and Research, a subsidiary of Mayo Foundation, 200 First St. SW, Rochester, MN 55905. Subscription price is \$29.55 a year, which includes a cumulative index published in December. Periodicals postage paid at Rochester, Minn., and at additional mailing offices. POSTMASTER: Send address changes to *Mayo Clinic Health Letter*, Subscription Services, P.O. Box 9302, Big Sandy, TX 75755-9302.

types to cause problems are some antidepressants and anti-anxiety medications, antihistamines, medications for high blood pressure, anti-diarrheals, muscle relaxants, drugs for certain types of urinary incontinence and medications for Parkinson's disease.

If it's determined that the cause of dry mouth is medication-related, your doctor may be able to modify your dosage or change your prescription. However, if a change isn't possible, there are things you can do to help alleviate dry mouth.

Other causes of dry mouth may include:

- **Cancer therapy** — Radiation treatments to the head and neck areas can damage and impair salivary glands. Chemotherapy drugs also can affect saliva production.

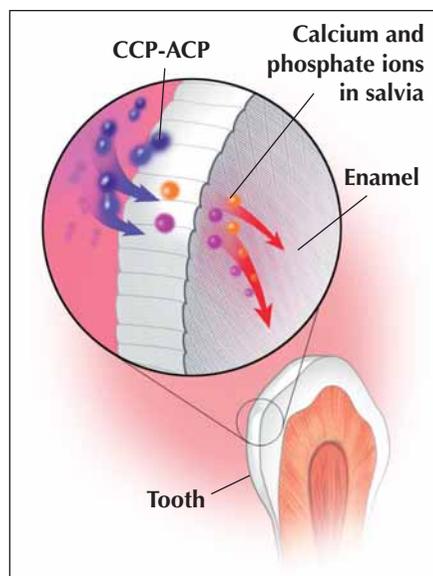
- **Other health conditions or their treatments** — Some examples include Sjögren's syndrome, which is an autoimmune disease, diabetes and HIV or AIDS.

Some solutions

If something other than a change in medications or treating an underlying health condition is called for to address ongoing dry mouth, your doctor may also consider prescribing a drug — cevimeline (Evxac) or pilocarpine (Salagen) — to stimulate saliva production.

Fluoride treatments may be recommended by your dentist to help protect and strengthen tooth enamel. One approach is fluoride application by your dentist. This may be done two to four times a year. There are also nonprescription fluoride rinses available in drugstores. Look for products carrying the American Dental Association seal of approval.

Another option to thwart the potential effects of dry mouth is to chew sugar-free gum sweetened by a naturally occurring sugar substitute called xylitol. Studies have shown that frequent use of gum with



Sugarless chewing gum products that contain Recaldent — a form of calcium phosphate that's known as casein phosphopeptides-amorphous calcium phosphate, or CCP-ACP — can help remineralize dental enamel. CCP-ACP penetrates and binds to tooth enamel.

high levels of xylitol can prevent cavities (dental caries) and even harden the tooth surface where a cavity has begun. Gum that's sweetened solely by xylitol appears to offer the best protection from dental caries.

Another product that may help remineralize dental enamel is sugarless chewing gum containing a form of calcium phosphate that penetrates and binds to tooth enamel. The ingredient name is Recaldent. It's found in Trident Xtra Care gum.

It's also helpful to limit tooth enamel contact with acids. Be aware of the many foods and beverages that can create an acidic setting in your mouth, such as citrus fruits, tart candies, diet and regular sodas, energy or sports drinks, fruit juices, and wine. Another concern for some may be the unwanted stomach acid that flows into the mouth due to gastroesophageal reflux disease (GERD), acid reflux and heartburn. Left untreated, reflux can cause significant enamel loss. Talk with your doctor if you suspect a reflux problem. □

Health tips

Outsmart your supermarket

Ever make a quick stop at the supermarket for a few things only to go home with considerably more than you had planned? Part of the reason is that supermarkets are designed with human tendencies in mind. To shop smart:



- **Make a list** — If you're tempted to deviate, check the Nutrition Facts label. Look for calories per serving, fiber content, fat amounts and types, sodium, sugar, vitamins and minerals. Chances are you would be better off sticking to your list.

- **Don't shop when you're hungry** — You'll likely encounter the smell of fresh-baked goods or ready-to-eat deli specials. Marketing through the air is tough to resist, especially if you're hungry.

- **Shop the perimeter** — That's where you'll find fresh produce, lean meats, and low-fat and fat-free dairy products.

- **Know where to look** — The general rule is that top-selling items are at eye level. Look up and down before making a selection. You may spot a generic product that's comparable in nutrients and less expensive. Staples are typically midway into an aisle. This creates more search time and a better chance you'll buy something along the way that's not on your list. □

News and our views

Stopping proton pump inhibitor use may cause heartburn

A recent study has shown that stopping the use of an acid-suppressing proton pump inhibitor (PPI) may temporarily increase stomach acid secretion, causing heartburn withdrawal symptoms. PPIs include esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec, others), pantoprazole (Protonix) and rabeprazole (Aciphex). Prilosec and Prevacid can be purchased as nonprescription drugs.

The study, appearing in the July 2009 issue of *Gastroenterology*, split 120 healthy volunteers into two groups. One group took an inactive pill (placebo) for 12 weeks. The other group took esomeprazole (40 milligrams a day) for eight weeks, then a placebo for four weeks.

The incidence of symptoms remained the same in both groups through week eight. During the last four weeks of the study, 44 percent of the PPI group experienced heartburn, while only 15 percent of the placebo group did. The PPI group continued to experience a high rate of symptoms even four weeks after stopping the drug.

Mayo Clinic experts say PPIs are important drugs for certain conditions, but this study highlights the need to make sure that you're taking a PPI for the right reason. When it comes to heartburn or gastroesophageal reflux disease (GERD), it's probably best to consider taking a PPI only if you experience heartburn at least several times a week. If you take a PPI for symptoms of chronic heartburn, it's often intended to be taken on an ongoing basis to suppress stomach acid production over a prolonged period of time.

If you quit taking a PPI, be prepared to manage heartburn with antacids or various lifestyle measures for one to two months. Tapering off a PPI doesn't appear to reduce withdrawal symptoms. □

High resting heart rate possible health risk for women

A study has found that the resting pulse rate in middle-aged women might be a predictor of heart attack risk down the road.

The study, published in the March 7, 2009, issue of the British medical journal *BMJ*, spanned almost eight years and involved more than 129,000 postmenopausal women with no history of heart problems. During the study, only a small number had heart attacks. However, researchers found that women whose resting heart rate exceeded 76 beats a minute were 26 percent more likely to have a heart attack or die due to heart disease than were those with heart rates of 62 beats a minute or lower. They also noted that the risk was present despite variations in physical activity levels.

A high resting heart rate in women isn't as strong a predictor of heart attack as other risk factors, such as smoking and diabetes, but those involved in the study believe it should be factored into a woman's overall heart health. Mayo Clinic experts agree and suggest that resting pulse rate be evaluated as part of an exam. If a resting pulse above 76 beats a minute is detected, they suggest carefully screening for additional coronary risk factors and symptoms. □

Endometrial cancer

Caught early, often curable

You went through menopause years ago, so it's been a while since your last period. That's why you promptly called your doctor when you noticed some vaginal bleeding.

You did the right thing. There are many potential causes of unexpected vaginal bleeding. One of the most important to identify is endometrial cancer, the most common type of uterine cancer.

Vaginal bleeding typically occurs early in the course of endometrial cancer, when the chance of a complete cure is greatest. About 80 to 85 percent of women who develop endometrial cancer are cured.

Uterine lining

The uterus is where babies grow during pregnancy. The inner lining of the uterus is the endometrium.

Endometrial cancer develops when endometrial cells divide and grow abnormally, potentially invading other layers of uterine tissue or even spreading beyond the uterus. This is most likely to occur between the ages of 50 and 70, although about 25 percent of endometrial cancer occurs in women between the ages of 40 and 50.

The greatest single risk factor for endometrial cancer is being 30 pounds or more overweight, because fat tissues produce estrogen. Obesity can raise your risk of endometrial cancer three to 10 times.

Women may also have increased lifetime estrogen exposure if they began menstruating before the age of 12, continued to have periods after age 50, or have used estrogen-only hormone replacement therapy after menopause.

Awareness of symptoms

Awareness of signs and symptoms can be critical. Promptly talk to your doctor if you experience:

- Vaginal bleeding or spotting after menopause or during the time around menopause (perimenopause). Even one drop of blood is abnormal in postmenopausal women.

- A watery pink or white discharge. In postmenopausal women, this may precede bleeding by several weeks or months.

- Heavy menstrual periods or bleeding between periods in premenopausal women.

- Pain in the lower abdomen or pelvic area or pain during sexual intercourse.

These signs and symptoms don't necessarily mean you have endometrial cancer. However, if you promptly have your symptoms evaluated and it turns out that you do have it, the disease will more likely be caught at an early stage when the chances of a cure are the greatest.

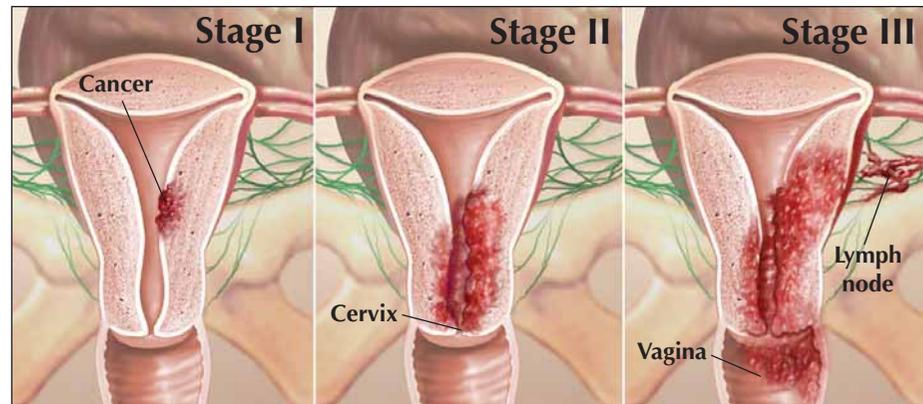
Initial diagnosis

Diagnosing endometrial cancer often begins with a physical exam, which usually includes a pelvic exam. Other procedures used to make an initial diagnosis include:

- *Ultrasound imaging* — This can't diagnose cancer, but it helps identify abnormalities in your uterus.

- *Biopsy* — A thin, flexible instrument is inserted into the uterus and a piece of tissue is removed for examination. Some cramping or light spotting may occur afterward.

- *Dilation and curettage (D and C)* — In certain situations, the majority of cells lining the uterus may need to be removed with a scraping device and examined. Hysteroscopy also may be performed. This involves inserting a thin scope device into the uterus so that your doctor can see inner layers of tissue. The D and C is usually an outpatient procedure, but is performed under



In Stage I cancer, cancer remains confined to the endometrium. As cancer advances to Stage II and III, cancer spreads, eventually involving the lymph nodes.

Recurrent cancer

Endometrial cancer is most likely to come back (recur) after initial treatment in women who have aggressive or advanced forms of the disease. Some cases of isolated recurrences in the vagina may be curable with surgery and radiation. In most other instances, the cancer isn't curable.

However, it sometimes can be controlled for long periods, often years, with various combinations of radiation, surgery, chemotherapy or hormone therapy.

anesthesia. Cramps and vaginal bleeding may occur afterward, but most women can resume normal activities right away. Still, sex should be avoided for a few weeks.

Further diagnostic steps

If cancer cells are found during the initial evaluation, the next step is to determine whether the cancer is confined to the endometrium. Various imaging tests may be used as an initial step in this process.

Surgery is performed on most women with endometrial cancer, and serves a twofold purpose. Exam-

ination of the uterus and nearby tissues is the definitive way to determine the exact characteristics of the cancer and how far it has spread. Surgical removal of the uterus (hysterectomy) — and often the fallopian tubes and ovaries — is almost always the foundation of treatment.

Surgery for endometrial cancer is a major procedure requiring anesthesia and a hospital stay. After making an incision in the abdomen, your surgeon and a pathologist will look for signs of cancer among abdominal organs and tissues. Your surgeon will remove tissues and organs containing cancer cells.

Your medical team will remove as much of the cancer as possible. For many women, all of the cancer is removed. The type of cancer cells, their aggressiveness and the extent to which they have spread need to be determined. Your cancer is then classified based on the likelihood of cancer recurrence, which guides the need for additional treatment.

When surgery isn't enough

Since most women with endometrial cancer have a slow-growing type, surgery often results in a cure.

However, for more-aggressive or advanced cancers, radiation or chemotherapy may be considered. Radiation options include external beam radiation or radiation that is delivered inside the vagina. □

What's in your medicine cabinet?

STRETCHING YOUR HEALTH CARE DOLLARS

It could save you a trip to the doctor

If you're trying to save time and money, you might want to consider the contents of your medicine cabinet. Many health concerns can be managed with the right nonprescription product.

Make a list

Here are some products that may help with certain conditions:

■ *Swim-Ear, Auro-Dri* — These can be of help after swimming and may also be helpful for a mild outer ear infection that occurs after swimming or due to water getting in the ear. The mild acid in the products — acetic acid — changes the acidity level of the ear canal. This re-establishes the ear's normal environment and helps discourage yeast and bacterial growth that can cause pain. If you have a perforated eardrum, getting water in the ear should be avoided in the first place.

■ *Debrox, Murine Earwax Removal and Mack's Wax Away ear-drops* — The active ingredient in these earwax-removal aids is carbamide peroxide, which is an oily form of peroxide that's ideal for dissolving wax in the outer ear. After softening the wax with this type of product, use body-temperature water and a bulb syringe to flush wax out. Generally, it can be flushed out easily, but sometimes the process needs repeating for several days in a row to achieve success. But don't use this type of product if you've had a perforated eardrum or ear surgery, or if you have blood or puss-like drainage from the ear.

■ *Chloraseptic spray* — This is an effective way to relieve mild to moderate sore throat pain. In general, it's very well tolerated, and once the initial taste wears off, can be quite soothing to the throat for several hours.

■ *Dextromethorphan (Robitussin, Vicks 44 and Delsym)* — The active ingredient in many nonprescription cough syrups, dextromethorphan is a synthetic narcotic that's generally not sedating at recommended doses. However, at high doses above recommended use, it can be abused. If you take serotonin-altering drugs — such as antidepressants including fluoxetine (Prozac, others), paroxetine (Paxil, others), sertraline (Zoloft, others), citalopram (Celexa, others) — avoid using dextromethorphan products because of potential drug interactions.

■ *Famotidine (Pepcid AC, others)* — Pepcid is one of several H-2-receptor blockers that reduce production of stomach acid, making it useful for upper stomach upsets and indigestion. Other widely available drugs in this class include ranitidine (Zantac) and cimetidine (Tagamet), but Pepcid and nizatidine (Axid) may have the fewest drug interactions. If you're over 50, these should only be used on an ongoing basis if you've been evaluated for an underlying condition. The danger with underlying, undiagnosed conditions — such as stomach cancer — is that symptoms may improve, masking the condition.

■ *Omeprazole (Prilosec) and lansoprazole (Prevacid)* — These nonprescription proton pump inhibitors are significantly stronger than Pepcid. They're able to improve symptoms more than H-2-receptor blockers. But both have more potential to mask an underlying esophagus or stomach problem, so a medical evaluation is important if you use either medication on an ongoing basis. Prilosec also has more

drug-to-drug interactions than does Pepcid or Axid. Prevacid has fewer drug-to-drug interactions than does Prilosec, but more than Pepcid.

■ *Bismuth subsalicylate (Pepto-Bismol)* — This is useful for stomach upset. It helps with heartburn (dyspepsia) and diarrhea, including traveler's diarrhea. Be aware that bismuth makes stool color very dark. But, in this circumstance, the black stool doesn't necessarily signal the presence of blood.

■ *Loperamide (Imodium)* — This is an excellent drug for diarrhea. It can be helpful for intermittent use if you have diarrhea-predominant irritable bowel syndrome. Don't use it for chronic, undiagnosed diarrhea, as bowel habit changes may signal an underlying problem, such as tumor or an infection. In addition, see your doctor rather than use loperamide if you've recently taken antibiotics and develop diarrhea or if you have blood in the stool, fever, or abdominal pain.

■ *1 percent hydrocortisone cream (Cortaid, others)* — This is the strongest nonprescription hydrocortisone. It's soothing for minor skin irritations, inflammation and rashes and can be used almost anywhere except right around the eye.

■ *Loratadine (Claritin, Alavert, others)* — This new generation of nonprescription antihistamines is generally less sedating than are older antihistamines. They also have an advantage over older generation antihistamines — such as Benadryl and Chlor-Trimeton — of not causing some of the side effects. For instance, urinary retention in older men with enlarged prostate occurs with the older agents, but it's typically not seen with loratadine use.

■ *Docosanol (Abreva)* — This product may help shorten the life of a cold sore by a day. If it's applied at the earliest point of an outbreak, it may even help prevent the cold sore blister from forming. □

Spice up your rice

New look at an old grain

Rice is the most commonly eaten grain in the world. In America, the most commonly consumed rice is white rice in its cooked form.

White rice is reasonably nutritious and versatile, but it's just one dimension of an amazingly diverse food. Rice comes in thousands of varieties that can be milled in numerous ways, offering a wide range of colors, flavors and textures — and nutritional benefits.

With a little know-how — and a visit to the rice aisle at your grocery store or to an ethnic or natural foods store — you can get more nutrition and taste out of rice than you may have thought possible.

What's in a grain?

Rice comes in several forms. One is the minimally processed, whole-grain or brown form, in which only the tough, fibrous hull of the rice seed has been removed. The other is the more processed white form. White rice has had the husk and the nutrient-rich layers of bran and germ removed.

In addition, rice can be partially polished, meaning only some of the bran and germ is removed. Parboiling is another processing technique in which rice is boiled while still in the husk. This drives nutrients into the center of the rice. Parboiled rice — often called converted rice — is then processed like white rice, but it retains much of the nutrients of whole-grain rice.

No matter how it's processed, rice is a great low-fat source of complex carbohydrates, and also provides a fair amount of protein. It's one of the least likely grains to cause allergies, and it contains no gluten.



Rice comes in thousands of varieties that can be milled in numerous ways, offering a wide range of colors, flavors and textures — and nutritional benefits.

The advantages of white rice are that it has a longer shelf life, cooks more quickly and is often less chewy than whole-grain forms of rice. To make up for nutrients lost during processing, white rice in the United States is enriched with thiamin, riboflavin, niacin, iron and folate.

Whole-grain rice naturally contains as much or even more of most of these vitamins and minerals. Whole-grain rice also has more soluble and insoluble fiber, more protein and a range of phytochemicals containing antioxidant compounds.

Varieties

One of the key variables in rice type is grain length. Short-grained rice has a high starch content, which results in the rice being sticky after cooking. Some longer grains of rice are also sticky and are often called glutinous rice, even though they don't contain gluten. Normal long-grain rice remains separate when cooked and is drier than short-grain rice. Medium-grain rice strikes a balance between short- and long-grain. Rice length doesn't affect nutrition.

There are many varieties of white rice — such as arborio, basmati and jasmine. These have interesting subtleties of flavor, but they lack the nutritional variety of whole-grain

rice. Whole-grain rice has a nuttier, more earthy flavor than does white rice. Whole-grain rice comes in three general categories:

- *Brown* — Just about any variety of white rice can be found in this less-processed form.

- *Red* — Varieties include Himalayan red, Bhutanese red, aromatic red and Thai red. Red rice often comes with the bran layer partially polished away and looks like white rice with red flecks all over.

- *Black or purple* — Varieties include Black Japonica, Balinese black and purple, black glutinous rice, and forbidden rice.

Wild rice, native to North America, is a grass seed, not rice, but it can be used just as rice is used.

Whole-grain rice requires more water and more cooking time than does white rice. Directions on the rice package are a good starting point for determining water amount and cooking time.

Infusing rice with flavor

Whether you use the incredible versatility of rice to make a pilaf, soup, hot dish, burrito, stir-fry base — or just eat as a side — you can dramatically enhance the flavor of rice with these tips:

- *Substitute for water* — Instead of water, try other liquids such as chicken stock, apple juice, tomato juice — or go half wine, half water. But be cautious with dairy and sugary liquids, as these can scorch.

- *Oil and herbs* — Mix one or more herbs or spices in a teaspoon of olive oil or other cooking oil. After a few minutes of infusion, pour the oil, herbs and spices into the rice water before cooking.

- *Toast it* — Before adding liquid, lightly toast the rice in a small amount of oil until the grain turns color. Add finely chopped garlic, carrots, mushrooms, herbs or spices for additional flavor. Then cook the rice as normal. □

Second opinion

Questions and our answers

Q: My husband uses a rub-on prescription testosterone gel for low testosterone. I always remind him to wash his hands after he uses it. He says I'm overreacting. Am I?

A: You're not overreacting. Testosterone from prescription gel products, including Androgel and Testim, can easily be transferred to another person if precautions aren't taken.

In fact, the Food and Drug Administration requires these products to include a warning on the label. This occurred after reports of children who developed enlarged sexual organs, premature development of pubic hair and other problems due to inadvertent exposure to testosterone gel. Female partners also are at risk of exposure, which may cause signs and symptoms such as acne, voice changes, increased body hair growth and thinning scalp hair.

If you use testosterone gel:

- Wash your hands with soap and warm water after it's applied.
- Keep the area where the gel was applied covered with clothing for at least six hours after applying.
- Avoid skin-to-skin contact with another person for six hours after application. If you accidentally get the gel on your skin, or if skin-to-skin contact occurs prior to six hours after application, wash the area with soap and warm water as soon as possible.
- Store out of the reach of children and where it won't get mistakenly used for something else. □

Q: I'm 68 and have rarely had headaches. But recently I've had quite a few, often after exercise. My doctor wants me to have a number of tests. What could be causing this?

A: It sounds as if your doctor suspects you have headaches related to exertion. These are associated with some type of strenuous activity, such as running, weightlifting, coughing, sexual activity or straining due to bowel movements.

Many times, these headaches are harmless and can be prevented with medication. However, exertional headaches caused by an underlying problem within the brain can be quite serious if they occur due to problems such as:

- Bleeding between the brain and the membranes covering the brain (subarachnoid hemorrhage).
- Abnormalities in a blood vessel leading to or within the brain.
- Cancerous or noncancerous tumors.
- Periodic obstruction of cerebrospinal fluid flow.
- Reduced blood flow in the coronary arteries feeding blood to the heart. In some instances, exertional headaches can be related to coronary artery disease.

Diagnostic imaging tests can help visualize structural or blood vessel abnormalities in the head and are typically done to help identify serious causes for exertional headaches. It's believed that a substantial percentage of newly developed exertional headaches may have an important underlying cause. □

Q: My grandson wants to sing in a "screamo" band. I told him he's going to hurt his voice, but he says he can prevent that by drinking a lot of water. What do you think?

A: You're right to be concerned.

Drinking water is an important aspect of safely singing, or screaming, at a high volume. But without the proper singing technique, water probably won't be enough to prevent vocal cord damage.

Permanent vocal cord damage can occur over time if your grandson repeatedly causes his voice to sound hoarse or rough after singing or screaming.

Still, Mayo Clinic experts say that high-volume singing can be done safely with the guidance of a laryngologist and an instructor experienced in teaching proper voice technique for pop or rock and roll. Plus, he's right to plan to stay well hydrated when singing. □

Have a question or comment?

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MC2019-0110
100110

Printed in the USA