

# MAYO CLINIC HEALTH LETTER

Tools for Healthier Lives

VOLUME 29 NUMBER 5 MAY 2011

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## LDL cholesterol

### New measurements of risk

You've been faithfully taking the statin drug your doctor prescribed to help lower your low-density lipoprotein (LDL, or "bad") cholesterol. In fact, your LDL cholesterol level has dropped to the range targeted by you and your doctor.

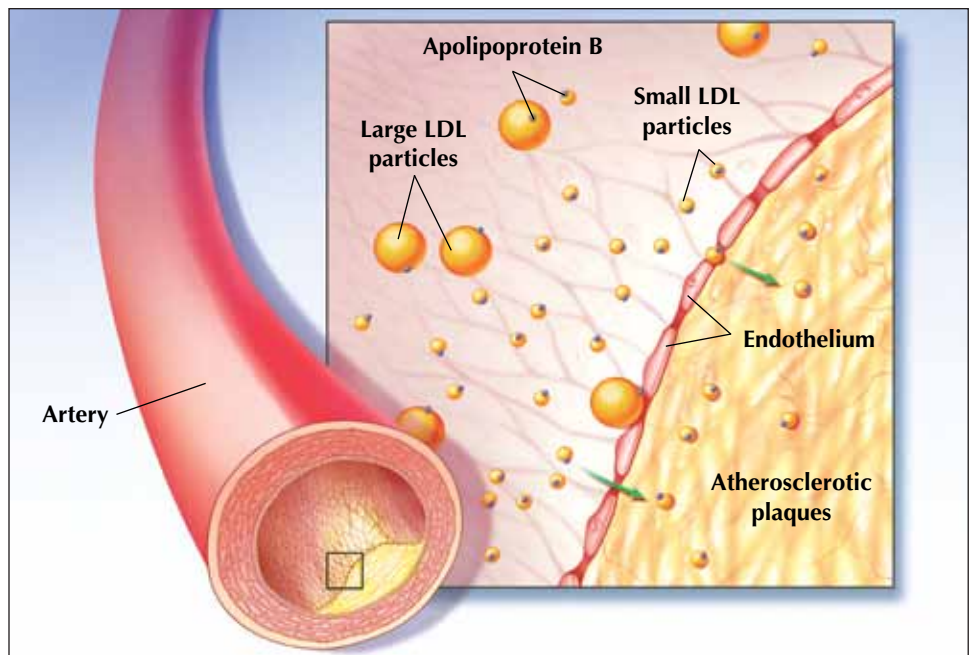
Does this mean that it's clear sailing in terms of your risk of developing narrowing or clogging of arteries that can lead to heart attack or stroke?

Maybe not. Recent research has found that — other things being equal

— lowering your LDL cholesterol level into an ideal range reduces your risk of having a heart attack or stroke by about one-third. That's a good start, but you may still be at risk of having a heart attack or stroke.

Research is pointing toward another major cholesterol-related risk factor for heart disease and stroke. Studies show you're at higher risk when the cholesterol in your bloodstream is packaged into many small particles, rather than fewer large particles.

This knowledge is leading to new types of cholesterol testing and a renewed emphasis on lifestyle changes and other interventions as a way to reduce the number of small LDL cholesterol particles. ▶



Every low-density lipoprotein (LDL) cholesterol particle has attached to it an artery-damaging protein receptor particle (apolipoprotein B). Having a high number of small LDL particles means that more apolipoprotein B is peppering the inner lining of your arteries. Smaller LDL cholesterol particles also are more likely to fit through gaps between endothelial cells.



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## Size matters

Elevated LDL cholesterol is a major risk factor in the narrowing, hardening or clogging of arteries (atherosclerosis). When atherosclerosis develops in arteries that supply the heart or brain with blood, this can lead to heart attack, other forms of heart disease and stroke.

LDL cholesterol has the ability to penetrate the inner lining of cells (endothelial cells) of an artery. Once LDL cholesterol gets inside this lining, it can accumulate and irritate your artery, particularly as your immune system attacks the invading substance.

The pocket of LDL cholesterol can rupture, grow larger, narrow and harden artery tissue, and alter the normal, dynamic function of an artery. Any of these processes can lead to a reduction or blockage of blood flow to the brain or to the heart.

A complicating factor is that the size of LDL cholesterol particles circulating within your bloodstream appears to make a big difference in the amount that can penetrate the walls of your arteries. When compared with larger LDL cholesterol particles, small LDL particles are worse for you, as they're more likely to penetrate endothelial cells by:

■ *Being more in number* — Every LDL cholesterol particle has attached to it a certain protein receptor particle (apolipoprotein B). This protein receptor is dangerous, as it can attach to — and damage — the endothelial lining of your arteries. Having a high number of small LDL particles floating through your bloodstream means that a greater bombardment of apolipoprotein B can pepper the inner lining of your arteries.

■ *Being smaller* — Smaller LDL cholesterol particles are more likely to fit through gaps between endothelial cells.

## Measuring up

Measuring the size or number of LDL cholesterol particles isn't necessary for an initial assessment of your cholesterol. The standard cholesterol test — which measures your LDL cholesterol, triglycerides, total cholesterol and high-density lipoprotein (HDL, or "good") cholesterol — is a great initial indicator of undesirable cholesterol levels.

If a standard cholesterol test indicates that you have high LDL cholesterol, your doctor will likely recommend an LDL-lowering strategy, lifestyle measures or other therapies to address the factors listed above. In many cases, an LDL cholesterol-lowering statin medication also may be recommended.

Although lifestyle changes — such as improvements in diet and exercise — can be an incredibly effective form of therapy, the reality is that many people have difficulty implementing them. In contrast, taking a statin is easy and may reduce your LDL cholesterol level to a desirable range. That may be below 100 milligrams per deciliter (mg/dL) or below 70 mg/dL, depending on your risk of heart disease and stroke.

This is a great first step in reducing your risk of heart problems or stroke. However, once this goal has been reached, the number of LDL particles in your bloodstream — which indirectly indicates size, because having a high number of particles means they're small — becomes an important consideration. This is true even if you've taken a statin, since statin drugs may reduce levels of small, numerous LDL particles by only about 30 to 40 percent.

Counting the LDL particles in your blood can most reliably be done with a test called nuclear magnetic resonance (NMR) spectroscopy. However, using this test as a follow-up to initial LDL-low-

ering therapy is done routinely at only a limited number of medical centers in the United States, including Mayo Clinic.

In the absence of NMR testing, there are several strong indicators that you may still be at heightened risk of heart disease or stroke, even if your LDL cholesterol level is within an optimal range, including:

■ *Having a high triglyceride level and a low "good" HDL cholesterol level* — Triglyceride levels of 150 mg/dL or higher and HDL cholesterol levels of 40 mg/dL or lower for men or 50 mg/dL or lower for women are associated with risk of having lots of small LDL cholesterol particles.

■ *Having a high blood sugar level or diabetes* — If this aspect of your health hasn't been addressed or isn't being optimally managed,

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## MAYO CLINIC HEALTH LETTER

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you're likely still at risk of having lots of small LDL cholesterol particles.

■ *Being inactive, overweight or obese, or eating a diet high in saturated fat and cholesterol* — Even if your LDL cholesterol level has improved, you're likely still at risk of having lots of small LDL particles if you don't make lifestyle changes.

### Out with the small

The foundation of reducing the amount of small LDL cholesterol particles in your blood is improvements in diet and physical activity — and in maintaining a healthy weight. These are the root causes of undesirable cholesterol levels for most people.

Realizing that you still may be at risk of heart disease or stroke even if your LDL cholesterol is within a desirable range may help motivate you to redouble your efforts at lifestyle change.

A healthy diet includes:

- Portion moderation
- A strong emphasis on plant-based foods, such as fruits, vegetables, nuts, beans and whole grains
- Fish as a protein source
- Use of oils high in polyunsaturated and monounsaturated fat, such as olive oil
- Limits on the amount of animal-based foods you eat — espe-

cially those containing high levels of saturated fat and cholesterol, such as meat and high-fat dairy products.

As for exercise, try gradually working toward getting at least 150 minutes a week of moderately intense exercise — or 75 minutes a week of vigorous exercise. Talk to your doctor about appropriate activities for your age and health.

To make your exercise vigorous, try interval training. This involves alternating bursts of intense activity with less intense activity. For example, try walking normally for two to three minutes, then walking at a faster pace — or jogging — for one or two minutes.

In addition, you can also work with your doctor to reduce small LDL particles by:

■ *Managing high blood sugar* — Physical activity, a healthy diet and weight loss can help with this, but you may also need to work with your doctor to find a medication that helps keep your blood sugar level under control.

■ *Taking drugs that help reduce small-particle LDL* — In addition to statins, drugs that can do this include prescription niacin (Niaspan) and a class of drugs called fibrates. These include fenofibrate (Lofibra, Tricor, others) and gemfibrozil (Lopid). □

### A better cholesterol drug?

Two new cholesterol drugs in a class of drugs called cholesteryl ester transfer protein (CETP) inhibitors are showing promising early results in terms of cholesterol management.

In one recent study, the drug anacetrapib raised high-density lipoprotein (HDL, or “good”) cholesterol levels by 138 percent and lowered LDL cholesterol levels in those who were already taking statins by 40 percent. In addition, CETP inhibitors appear to effectively reduce small particles of LDL cholesterol.

Before either drug is approved by the Food and Drug Administration for use, large, phase-three studies remain to be completed over the next two to four years. Only then will researchers be able to assess whether the drugs are reasonably safe — and whether they're effective at reducing heart attacks and strokes.

## Health tips

### Grilling food safely

Prevent foodborne illnesses with these safe grilling tips:

■ *Thaw thoroughly* — Plan ahead so that frozen meats and poultry are completely thawed before grilling. Slow thawing in the refrigerator is recommended. Another option is to use cold water to thaw sealed packages. Microwave defrosting is acceptable, as long as the item is grilled immediately.

■ *Use marinades properly* — Marinate foods in the refrigerator, not on your countertop. If you plan to use the same marinade to baste while grilling or as a sauce on cooked food, set aside a portion of the marinade before putting raw meat, poultry or seafood in it. Never reuse marinade that has been used to marinate food.

■ *Don't skimp on cooking time* — Consider indirect cooking to prevent charring, as charred meats may contain carcinogens. Use a food thermometer to measure internal temperatures. Cook fish and medium-rare steaks to 145 F. Ground beef and all types of pork are cooked safely at 160 F. Cook chicken breasts and whole or ground poultry to 165 F. Avoid charring and flare-ups by removing visible fat.

■ *Beware of cross-contamination* — Always use clean utensils and platters to serve grilled food. Never reuse items that came in contact with raw meat, poultry or seafood.

Clean your grill before each use and make sure it's hot before you place food on it. □

## News and our views

### Mediterranean diet delivers a punch to LDL cholesterol

A study published in the *Archives of Internal Medicine* found that a Mediterranean diet that's low in saturated fat and cholesterol — and high in antioxidant-rich, plant-based foods — can do more than just help reduce low-density lipoprotein (LDL, or “bad”) cholesterol. It can also help reduce the levels of damaged, unstable (oxidized) LDL cholesterol in your blood.

That's important, because oxidized LDL cholesterol is more volatile than is nonoxidized LDL — and much more likely to cause the development of narrowing or clogging of arteries that can lead to heart attack or stroke. Small LDL particles (see cover article) are often oxidized.

The study involved 372 older adults who were randomly divided into three groups. Two groups were counseled on how to follow a Mediterranean diet. This included using virgin olive oil for cooking and in dressings, eating more vegetables, nuts, herbs and fish, substituting white meat for red or processed meat, and — for those who drank alcohol — drinking moderate amounts of red wine. The third group was instructed to reduce all types of fat as part of a low-fat diet.

The Mediterranean diet groups experienced a significant decline in levels of oxidized LDL cholesterol. The low-fat group had a much smaller decline.

Reducing oxidized LDL cholesterol might be one way a Mediterranean diet can help optimize cholesterol levels and reduce risk of heart attack and stroke. □

### Weight-loss surgery may help some with heart failure

Preliminary results of a small Mayo Clinic study indicate weight-loss surgery — also called bariatric surgery — for people who are extremely obese and have heart failure can produce long-lasting improvements in their disease symptoms.

The study included 19 people with heart failure. Of those, 13 were markedly obese and underwent bariatric surgery. The other six didn't have the surgery.

Participants were classified using a formula based on height and weight — their body mass index (BMI). Adults with a BMI of 30 or higher are considered obese. Extreme obesity, also called severe obesity or morbid obesity, is indicated by a BMI of 40 or higher.

During follow-up after four years, the average BMI dropped from 53 to 37 among those who had bariatric surgery. The nonsurgical group had an increase in average BMI from 42 to 45.

Signs and symptoms of heart failure — such as swollen legs and labored breathing during exercise — improved only in those who had bariatric surgery. Mayo Clinic cardiologists and surgeons say their findings imply some benefit for this subset of heart failure patients, but agree that more research is needed to confirm these results. The study results were presented at the 2010 Scientific Sessions of the American Heart Association in Chicago. □

## Improving your health

### 10 tips that can help

Do you ever wish you had some straightforward information that could make your life better?

With that in mind, here's a list of things you can do to take care of yourself and improve how you feel. Try these tips to see what a difference a few simple changes can make.



**1. Eat fruit daily** — Fruits offer some of the better sources of antioxidants, which may play a role in helping

to prevent diseases such as cancer, cardiovascular disease, Alzheimer's disease and macular degeneration.

Antioxidants are thought to be helpful because they can neutralize free radicals, which are toxic byproducts of natural cell metabolism. Free radicals in excess or in the wrong place can damage healthy cells.

Among the better fruit sources of antioxidants are berries — notably blueberries, blackberries, raspberries, strawberries and cranberries. Cherries, oranges and dried plums (prunes) also are high in antioxidants.

Drinking a glass of 100 percent juice from any of these fruits provides a natural health boost. If you're partial to orange juice, take heart. Limited research suggests that orange juice can improve the high-density lipoprotein (HDL, or “good”) cholesterol, that your body needs to help combat the buildup of plaques in arteries. However, this effect required large amounts — 24 ounces — of orange juice daily.



**2. Make high-fiber foods a diet staple** — It's best to get dietary fiber found naturally from foods such

as whole grains, beans, fruits and vegetables. But if you want to jumpstart your day, try eating a breakfast cereal that includes psyllium.

Psyllium may improve total cholesterol by reducing low-density lipoprotein (LDL, or “bad”) cholesterol. There’s also some evidence that it may positively affect blood sugar control if you have diabetes.

Psyllium is featured in supplement products such as Metamucil, as well as some high-fiber cereals. Just 1/2 cup of Kellogg’s All-Bran Bran Buds provides 20 grams (g) of dietary fiber, some of which is psyllium. High-fiber cereals can help you reach suggested daily fiber levels. The most recent dietary guidelines recommend that men get 38 g of fiber each day and women get 25 g.



**3. Take a brisk walk** — Doing this can help improve your mood as well as benefit your cardiovascular system and bones. Walk for at least 30 minutes a day, and walk at a moderately intense level — which means you’re moving briskly enough to talk but not sing. If you find it more workable to break up that daily 30-minute walk into three brisk 10-minute walks, do so. Significant health benefits are associated with doing at least 150 minutes of moderately intense physical activity a week.



**4. Treat your body to a regular program of stretches and strength building** — Regular stretching and strengthening can help enhance your mobility and prevent falls. If you find strength in numbers, join a local fitness group. Once you learn a few simple moves, practice them in the comfort of your home if you prefer.



**5. Pursue pathways to health with yoga and tai chi** — These gentle and adaptable mind-body practices combine five important kinds of exercise — aerobic, strength training, core stability, flexibility and balance. Research suggests that yoga and tai chi

offer many benefits, such as reduced blood pressure, reduced stress, improved mood and improved sleep. Classes are offered nearly everywhere, from trendy health clubs to community education classes.



**6. Approach life with a good measure of optimism** — Do you tend to look on the positive side of things? If so, research suggests you’re more likely to feel better and perhaps even live longer.

One study involving nearly 100,000 women age 50 and older found those with an optimistic outlook lived healthier, longer lives. Compared with pessimistic women, they were 30 percent less likely to die of heart disease and 14 percent less likely to die of another cause.



**7. Develop a deep sense of gratitude for life** — Some people describe gratitude as your moral memory — a combination of humility, grace, love and acceptance.

Each day, identify at least one thing that enriches your life. Living with an “attitude of gratitude” means being thankful for every experience — good or bad — and recognizing those experiences are an opportunity to learn and grow. Let gratitude be your last thought before you fall asleep at night and your first thought upon awakening in the morning.



**8. Try volunteering** — Hospitals, churches, museums, community centers and other organizations often need volunteer help. You can form strong connections by working with others who have a mutual goal. Research shows that participating in meaningful volunteer activities promotes emotional and mental well-being.

In addition, a study published earlier this year in the *Journal of Aging and Health* found that volunteers tended to have a lower risk of high blood pressure (hypertension) than do nonvolunteers.



**9. Enjoy the company of a pet** — True, a pet requires care and is an expense. However, a small but growing body of research shows that being a pet owner may benefit your health in a number of ways. Some of those benefits include improved cardiovascular health. One study found that among people who had had a heart attack, those who owned a dog were significantly more likely to be alive a year after the heart attack than were those who didn’t own a dog. Another study found that married couples that owned a pet had lower heart rates and lower blood pressure than did couples without pets. Research shows that dog owners who regularly walk their dogs are more physically active and less likely to be obese than are those who don’t have or walk a dog.



**10. Improve your relationships** — Take conscious steps to forgive yourself and those closest to you. Forgiveness doesn’t mean you justify, excuse, condone or deny a wrong done. Forgiveness is a choice that you make to nurture emotional maturity between yourself and those you love. Forgiveness is associated with improved mood and lower stress. A small study even linked forgiveness with overall reductions in blood pressure levels.

Another way to improve relationships is to turn any differences you may have with your partner or loved one into better connections. One technique that may help is mirroring — a conversation technique in which you learn to listen clearly to each other’s point of view. Taking turns, one of you talks while the other listens and then describes or mirrors back what was heard. The first speaker then clarifies and the other mirrors back those comments. No interruptions should occur when either of you is talking.

Mirroring creates clarity in your conversation and helps you see things from each other’s point of view. □

# Social anxiety

## Learning to enjoy others

Your spouse was always the life of the party and the one who was good at handling the social interactions the two of you had around town. And, given your shyness, you were glad that your spouse did most of the talking.

But since your spouse passed away, it's been a struggle to be around people. You worry so excessively about what people think of you that even a trip to the grocery store makes you almost sick with fear. You know it's irrational, but you doubt that anything can be done to help you get over your natural shyness.

What you're experiencing may be part of social anxiety disorder. Although social anxiety disorder tends to persist over a lifetime, expert medical or psychological help often can make it easier for you to learn to manage your anxiety and become more comfortable and relaxed in social settings.

## Sick with worry

It's natural to feel some nervousness in certain social situations, such as talking in front of others, confronting a problem with someone or being among strangers. But social anxiety disorder goes beyond this, causing an excessive anxiety or fear of activities and situations in which you believe that others are watching you or judging you. In addition, you may fear that you'll embarrass or humiliate yourself. This may lead to:

- Intense fears of being in situations in which you don't know people. This can make it hard to interact with strangers or initiate a conversation.

- Anxiety to the level that it interferes with day-to-day living. This can make it difficult to use a public

restroom, return an item to a store or order food in a restaurant.

- Avoiding speaking to people out of fear of embarrassment. This can make it difficult to be assertive or make eye contact.

- Avoiding situations where you might be the center of attention.

- Worry about reacting in ways that you know are out of proportion to the situation, or being afraid that others will notice that you look anxious.

The anxiety you feel may cause physical signs and symptoms of nervousness and fear. These may include blushing, sweating, trembling, nausea, stomach upset, confusion, heart palpitations, diarrhea and cold, clammy hands.

When interacting with other people affects you in this way, over time it may hurt your social skills, or lead to extreme sensitivity to criticism and low self-esteem.

## Seeking help

Symptoms of social anxiety disorder tend to persist over time, but they can change. Symptoms may flare up if you're facing a lot of stress or demands. They may cause fewer problems if you're able to avoid situations that would make you anxious.

Talk to your doctor if your symptoms disrupt your life, such as by causing you distress, affecting your daily functioning or causing you to avoid activities.

Diagnosis of social anxiety disorder typically involves having a detailed discussion with your doctor or mental health care provider and often filling out psychological questionnaires or self-assessments.

If a diagnosis of social anxiety disorder is reached, initial therapies — which are often used in combination — include:

- *Cognitive behavioral therapy* — This therapy improves symptoms in up to 75 percent of people with social anxiety disorder. It's based on

the idea that social situations generally won't change or go away. However, you can decrease your anxiety by changing your patterns of thinking and acting.

In therapy, you may learn to recognize and change negative thoughts about yourself. You may also practice exposure therapy, which involves gradually working up to facing situations that you fear. Social skills training, role-playing, relaxation training and stress management techniques may be part of your treatment plan.

- *Certain anti-depressant medications* — First line choices may include citalopram (Celexa), escitalopram (Lexapro), fluvoxamine (Luvox CR), fluoxetine (Prozac), paroxetine (Paxil), sertraline (Zoloft), and venlafaxine (Effexor). Be patient with these medications. It may take some trial and error to find the best medication for you, and it may take up to three months of therapy for symptoms to noticeably improve.

Additional short-term medications that may be recommended include anti-anxiety drugs and a class of drugs called beta blockers that can help calm your cardiovascular system.

## Re-engaging

Coping with social anxiety disorder can be challenging. In addition to appropriate treatment, consider coping methods, such as:

- Reaching out to people with whom you feel comfortable

- Working to maintain connections and build relationships

- Joining a support group

- Engaging in healthy, pleasurable activities when you feel anxious

- Getting adequate sleep, including physical activity in your daily routine and a healthy diet

- Avoiding inappropriate or excessive use of alcohol or other substances that may be used as a means of coping with intense anxiety □

# Chocolate wonders

## Healthy perks in small amounts

Chocolate's popularity is evident when you consider the number of product choices available. In recent years, chocolate's status has been changing due to research indicating compounds found in chocolate may offer some potential health benefits.

Raw cacao beans are a rich source of flavonoids, which are antioxidants found in plants. Flavonoid compounds appear to play a protective role in cardiovascular health. Of these compounds, flavanols are especially concentrated in raw cacao beans.

### Know your chocolate

But the chocolate products you're choosing to nibble on or to use in making a cup of hot cocoa are far from raw beans. If you're keeping your health in mind, it pays to know which type of chocolate might offer you more in the way of desirable flavanols.

By nature, raw cacao beans are bitter to the point of being virtually inedible. That bitterness is mostly due to the generous amount of flavanols in raw beans. So in order to make chocolate palatable, chocolate products are processed to varying degrees.

Depending on what the final product is to be, the raw beans are fermented, roasted, ground and separated into the components of pure chocolate — cocoa powder (fat-free cocoa solids) and cocoa butter. Some chocolate manufacturers have developed cocoa-processing techniques aimed at retaining a higher level of flavanol content.

As a general rule, flavanol content mirrors the level of fat-free cocoa solids in a chocolate product — unless the cocoa powder is "dutch." Many cocoa powders go through "dutching," which uses alkali to neutralize the bitter taste.

As a result, dutched cocoa is not only devoid of bitterness, but it also has fewer healthy flavanols — the antioxidant activity of heavily alkalinized cocoa may be less than half that of natural cocoa.

As for white chocolate, it contains no cocoa powder, only cocoa butter, sugar and flavorings.

Milk chocolate with its smooth, creamy texture and mild flavor also scores low on the flavanol scale. That's due to the added dairy ingredient, which basically takes the place of the fat-free cocoa solids. Milk chocolate beats out white chocolate, but not by much.

### Cool beans

As a general rule, the best chocolate options for flavanol content are dark chocolate that doesn't list sugar as its first ingredient and unsweetened 100 percent cocoa powder that hasn't been alkalinized (Dutch processed). If a chocolate or cocoa has been dutched, the ingredient list will say that it's been processed with alkali.

Researchers have linked cocoa powder and dark chocolate with a number of cardiovascular benefits. These include improvements in blood pressure, cholesterol levels, blood clotting, blood vessel function, insulin sensitivity, and inflammatory markers associated with the buildup of fats in and on artery walls (atherosclerosis).

If you enjoy a little chocolate now and then, beware of calories. Check serving sizes to determine what a square or two of your favorite dark chocolate — the darker the better — adds to your daily calorie count. □

## Percent of fat-free cocoa solids in chocolate products



Unsweetened cocoa powder	82%
Unsweetened baking chocolate	47%
Dark chocolate	23%
Semisweet chocolate chips	17%
Milk chocolate	6%
Chocolate syrup	6%

Source: *Journal of Agricultural and Food Chemistry*

With the exception of chocolate that has been dutched, the percent of fat-free cocoa solids in a chocolate product is a fair indicator of its flavanol content.

# Second opinion

**Q: Is it better to use a hard- or a soft-bristled toothbrush?**

**A:** The American Dental Association (ADA) recommends using a toothbrush with soft bristles. Brushing with hard bristles can actually wear away the hard outer coating (enamel) of teeth and damage gums.

Brush your teeth at least twice a day, concentrating on brushing just two teeth at a time. Using long strokes across several teeth can damage gums as you go around your mouth.

Every three or four months — or sooner if the bristles become frayed — replace your toothbrush or brush head with a soft-bristled product that features the ADA's Seal of Acceptance. □



**Q: My dentist always asks if I grind my teeth because some of my teeth are unusually worn down. I'm pretty sure that I don't, but could I be doing it in my sleep?**

**A:** Yes, it's possible. Grinding, gnashing or clenching of teeth while sleeping is called sleep-related bruxism.

Sleep bruxism may lead to tooth wear, cracking or chipping, and damage to the temporomandibular joint that connects your jaw to your skull. Other signs and symptoms may include jaw muscle discomfort or stiffness, sensitive teeth, dull morning headaches, and chewed tissue on the inside of your cheek. If you have sleep bruxism, someone sleeping nearby may be able to hear your teeth grinding.

There's no sure-fire remedy for sleep bruxism, but your dentist and doctor may be able to help you manage the problem. The causes of sleep bruxism aren't established, though it may be an uncommon side effect of certain medications, including selective serotonin reuptake inhibitor (SSRI) antidepressants such as citalopram (Celexa), fluoxetine (Prozac) and sertraline (Zoloft).

Managing sleep bruxism may include:

■ **Tooth protection** — A removable mouth guard or bite splint can help relieve the pressure of grinding.

■ **Short-term medication** — Drugs such as clonazepam (Klonopin) may help reduce sleep-related bruxism. Your doctor may recommend other drugs, such as amitriptyline or cyclobenzaprine (Flexeril). □

**Q: I've had heartburn problems. A recent endoscopy showed some inflammation in my esophagus. Now I'm taking a medication for it. How long will I have to take it?**

**A:** If you have reflux esophagitis, which is damage to the esophagus caused by gastroesophageal reflux disease (GERD), how long you'll need to take medication can vary.

Most people who have GERD are treated with a proton pump inhibitor (PPI), such as omeprazole (prescription or nonprescription Prilosec), pantoprazole (Protonix, others) or rabeprazole (Aciphex).

The goal is to prescribe the lowest possible dose of medication necessary to control symptoms and prevent complications

of GERD. Generally, PPIs for this purpose are taken for two to three months. If improvement occurs in that time, your doctor may try to decrease the dose. However, if symptoms worsen on a lower dose, you'll likely need to be on a higher PPI dose for a longer period of time before consideration is given to tapering back the dose.

There are potential side effects with long term use of PPIs, such as a slight decrease in bone density and a slight increase in risk of gastrointestinal infection. However, if you need to control symptoms of GERD, the risk of side effects is quite low. If you're concerned about taking your medication over the long-term, talk with your doctor.

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. □

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## Have a question or comment?

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