

# MAYO CLINIC HEALTH LETTER

Tools for Healthier Lives

VOLUME 29 NUMBER 2 FEBRUARY 2011

## Inside this issue

- HEALTH TIPS** . . . . . 3  
Great oils.
- NEWS AND OUR VIEWS** . . . . 4  
**Mouth-to-mouth breathing** isn't always needed in CPR. Study finds **U.S. should step it up.**
- KNEE ARTHRITIS** . . . . . 4  
Staying fit and active.
- DISRUPTED BLOOD CELLS** . . . . . 6  
Cure is elusive for myelodysplastic syndrome.
- JUICING FRUITS AND VEGETABLES** . . . . . 7  
A better way to eat?
- SECOND OPINION** . . . . . 8

## Coming in March

- PEPTIC ULCERS**  
Stopping them for good.
- MULTIPLE MYELOMA**  
Treatment progress being made.
- PSORIASIS**  
Managing the heartbreak.
- TELOMERES AND HEALTH**  
Keeping your DNA happy.



## Exercise for your heart

### More powerful than you may think

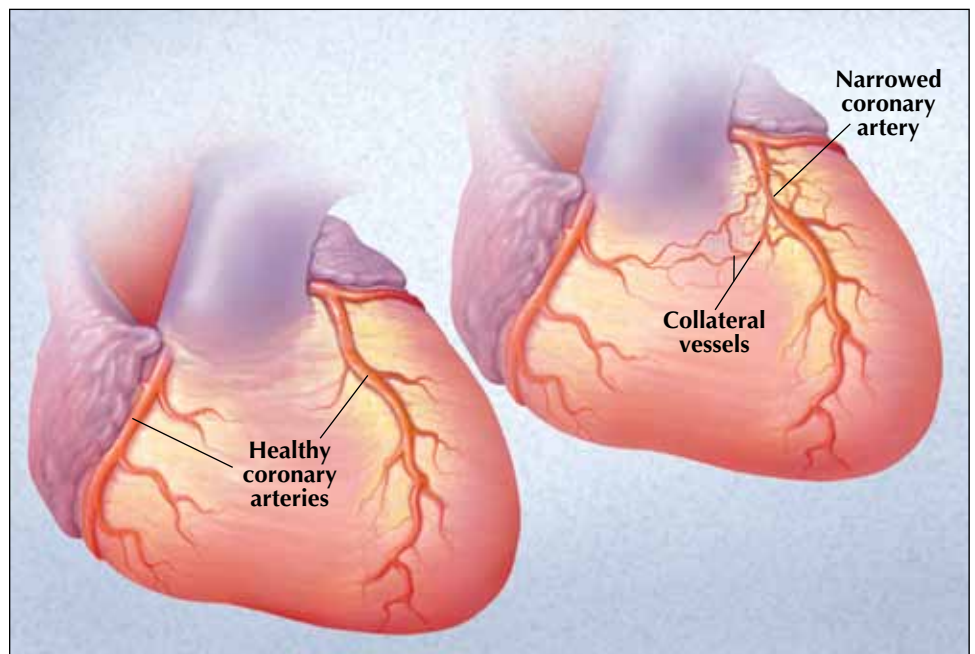
You're a brisk walker by nature. Most days, you venture out for a 45-minute walk to get your blood flowing. That's why having a heart attack took you completely off guard.

But your cardiologist assured you that it was a minor heart attack, even though one of the vital coronary arteries serving your heart was fully blocked.

Minor? A complete blockage of a coronary artery sounded more major than minor.

It was minor because as the blockage developed over time, your regular exercise put a demand on your heart. That demand encouraged new blood vessels — called collateral vessels — to develop so that needed blood could reach the area of the heart downstream from most of the blockage.

It's almost never too late to reap the health benefits of increased physical activity. For a whole host of reasons, your heart and the miles of blood vessels that make up your cardiovascular system are direct beneficiaries. ▶



Exercise puts a demand on your heart that encourages development of new blood vessels — called collateral vessels. These may allow blood to reach the area of your heart downstream from a narrowed coronary artery.

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## Changes with time

With age, the heart's capabilities typically diminish. Aging impacts the nerves that help regulate how fast your heart beats. As a result, maximum heart rate slows. However, people who exercise regularly experience less noticeable changes than do those who are sedentary. The heart's ability

to relax and fill with blood may also decrease with age, especially in people who have high blood pressure (hypertension). Again, though, the overall decrease in how much blood the heart can pump with age can be affected by physical activity.

Over time, the natural elasticity of major blood vessels decreases.

They become stiffer, causing a rise in blood pressure. The body's ability to take in and use oxygen also diminishes. However, both of these changes can in part be prevented with regular physical exercise.

## Time for a change

Although aging is inevitable, how you age can be influenced by how you live. Choosing to live a mostly sedentary life carries big risks in terms of your heart and blood vessel health. But making healthy lifestyle choices — such as maintaining a healthy weight, including physical activity in your daily routine, eating a healthy diet and avoiding tobacco — can go a long way toward slowing the effects of aging.

The American Heart Association identifies inactivity as one of the five leading risk factors for developing

## Move for a change

If you're not sure how much activity your cardiovascular system needs, consider the following recommendations from the Department of Health and Human Services. In general, for adults up to age 64:

■ *Some activity is better than none* — If you've been inactive, gradually increase your activity level. As little as 10 minutes a day of moderately intense physical activity will net some health benefits. As a rule of thumb, when your activity level is moderately intense, you're able to talk but not sing during the activity.

■ *More benefits are associated with increased activity* — Significant health benefits are associated with doing at least 150 minutes of moderately intense physical activity a week. Or, cut that time in half if you opt for physical activity that's vigorously intense or a combination of moderately to vigorously intense. An activity is considered to be of vigorous intensity if you can't say more than a few words without pausing for a breath.

While any physical activity can produce health benefits, higher amounts of activity — about six to seven hours a week — probably results in the ideal health benefit level for most people.

■ *Include muscle-strengthening activities in the mix* — Include activities that challenge your muscles — such as lifting weights, using resistance bands, or doing yoga or heavy gardening — on two or more days each week. The goal is to work all the major muscle groups in your legs, hips, back, chest, abdomen, shoulders and arms.

Talk with your doctor about how much physical activity is safe if you have a chronic condition — such as heart disease, lung disease or diabetes — or if you've experienced chest pain, shortness of breath, excessive fatigue, dizziness or fainting, or palpitations when you've tried to exercise or been more physically active than usual. In these instances, a stress test may be helpful in determining if it's safe for you to exercise and how much exercise is appropriate for your condition.

Otherwise, for adults age 65 and older:

■ *Avoid inactivity* — There are health benefits to be gained with any amount of physical activity. If you're inactive, start slowly and gradually increase your activity level.

■ *Don't give up due to chronic conditions* — If you can't meet the general guidelines for adults, be as active as your abilities allow.

■ *Reduce your risk of falling* — Include balance exercises in your activities. Try walking sideways, standing on one leg or standing from a sitting position several times in a row. You may find it helpful to do these exercises in a corner using something to steady yourself.

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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.

cardiovascular disease. On the flip side, taking steps to increase physical activity is associated with:

■ *Improved circulation* — Increased physical activity creates a demand in the body's tissues for more oxygen and nutrients. This demand can help improve artery health and even encourage new capillary growth in the muscles being exercised. These collateral blood vessels enhance overall circulation, which helps improve strength, energy, healing and other functions in essentially all of your body's systems. For example, if you have peripheral artery disease, collateral blood vessels in your leg muscles may reduce symptoms, so you're able to walk farther without pain. Toned leg muscles promote blood return to the heart by maintaining increased force on the veins.

■ *Improved heart function* — Unlike skeletal muscles, the heart is always working. However, exercise helps improve the heart's efficiency. Regular physical activity slows your heart rate and increases the amount of blood pumped with each beat. It also helps your lungs deliver oxygen more efficiently to your blood. With the heart able to pump more blood, more oxygen is delivered to your muscles and the rest of your body during exercise. All of these changes make it easier for your heart to do its job.

■ *Reduced blood pressure* — Regular physical activity is associated with better long-term control of blood pressure. If you're overweight or have hypertension, the effect of regular exercise on your blood pressure may be even more dramatic.

■ *Improved blood fat (lipid) levels* — If you're concerned about your cholesterol numbers or elevated triglycerides, then exercise is for you. Exercise causes a reduction in triglycerides, which are small fatty particles in blood. It also can elevate high-density lipoprotein (HDL), or "good" cholesterol, and may reduce

the number of low-density lipoprotein (LDL), or "bad" cholesterol, particles.

■ *Improved blood vessel health* — Improved blood-fat levels reduce the buildup of plaques inside blood vessels (atherosclerosis) and decrease the risk of cardiovascular disease. Reduced blood pressure means less stress on the inner lining of blood vessels — a thin layer of cells called the endothelium — and less wear and tear that may otherwise promote buildup of plaques. The endothelium secretes chemicals that cause blood vessels to relax or contract. Exercise is known to improve endothelial function.

Another factor in blood vessel health is inflammation, which can be measured by the level of high sensitivity C-reactive protein (hs-CRP) in the blood. There's increasing evidence that inflammation plays an important role in atherosclerosis and that elevated hs-CRP is a sign of inflammation. Physical activity may reduce hs-CRP.

■ *Improved use of oxygen (maximal oxygen uptake)* — Regular physical activity helps your cells more easily access oxygen from your blood, decreasing the workload on your heart and improving your ability to exercise.

■ *Improved management of blood sugar and insulin levels* — This lowers your risk of type 2 diabetes, which is closely linked with problems related to cardiovascular disease.

In addition, exercise may offer other potential benefits, such as a reduced tendency for blood clots, improved immune system function and a reduced risk of depression.

### The true payback

Few lifestyle choices can impact health as significantly as regular physical activity. Indeed, as little as seven hours of physical activity a week can lower your risk of dying early by 40 percent as compared with someone whose weekly activity level is less than 30 minutes. □

## Health tips

### Great oils

When using oil, select one that's low in cholesterol-worsening saturated fat and high in healthy monounsaturated and polyunsaturated fats. Oils that fit these criteria include:

■ *Virgin and extra-virgin olive oil* — These unrefined, antioxidant-rich oils work great in salad dressings and marinades. Instead of using butter, dip bread in one of these flavorful oils.

■ *Canola oil* — This works well in salad dressings, plus it can withstand higher cooking temperatures before it begins to smoke. Canola oil has a more neutral taste than does olive oil and also includes a moderate amount of alpha-linolenic acid (ALA), which is the plant version of omega-3 fatty acid.

■ *Safflower oil* — Nearly flavorless and colorless, this oil makes an appealing salad dressing ingredient because it doesn't solidify when chilled. It also has a high smoke point and can be used when cooking at high temperatures. Look for safflower that specifies it's high in oleic acid, which indicates it is higher in monounsaturated, heart-healthy fat.

■ *Sesame oil* — This is a great stir-fry oil, as it has a high smoke point and it gives your stir-fry a nutty flavor.

■ *Walnut and flaxseed oil* — Both are high in ALA omega-3 fatty acids, but they don't heat well. They're best used for dipping or salad dressings.

Remember, even healthy oils contain lots of calories, so use them sparingly. □



## News and our views

### Study finds U.S. should step it up

How many steps do you take in a day? Chances are not nearly as many as someone living in Australia or Switzerland.

A study published in the October 2010 issue of *Medicine & Science in Sports & Exercise* found that the average adult in the United States takes just 5,117 steps a day. Western Australians take 9,695 steps, the Swiss 9,650 steps, and the Japanese 7,168 steps. This means on average, the Japanese walk about a mile — or about 2,000 steps — more a day than do Americans.

A sedentary lifestyle is a risk factor for heart disease and many other diseases, including some cancers. Mayo Clinic doctors encourage increased activity to decrease risk of these problems. Some suggest that 10,000 steps a day is the ideal activity number, but any increase in activity is helpful. They note that a pedometer may be a helpful and inexpensive tool to help track and increase your activity level. Importantly, adding 2,000 steps to daily activity can typically be done with as little as 20 minutes of brisk walking a day. □

### Mouth-to-mouth breathing isn't always needed in CPR

New guidelines from the American Heart Association make it easier to take action if you see an adult suddenly collapse from what seems to be the sudden, unexpected loss of heart function, breathing and consciousness (cardiac arrest).

The new guidelines recommend chest compressions alone — known as hands-only cardiopulmonary resuscitation (CPR) — for bystanders who aren't trained in conventional CPR or who feel uncomfortable with mouth-to-mouth contact.

Several recent large studies found no survival difference in adults who experienced cardiac arrest who were initially resuscitated by bystanders giving them hands-only CPR, compared with those who received conventional CPR, which combines chest compressions with rescue breathing. The important message is that for cardiac arrest occurring outside of the hospital setting, a person's chance of surviving can more than double if a bystander starts conventional or hands-only CPR before emergency medical services arrive.

If you see an adult suddenly collapse and you aren't trained in conventional CPR or aren't sure of your ability to do it, the American Heart Association advises that you take these steps:

- Immediately call 911 or a local emergency medical provider.
- Start chest compressions by pushing hard and fast (at least 100 compressions a minute) in the middle of the person's chest, with minimal interruptions.

Hands-only CPR isn't recommended for infants and children, for adults whose cardiac arrest stems from respiratory causes, such as a drug overdose or near drowning, or for someone whose collapse you didn't witness. In these cases, the person would likely benefit more from conventional CPR. □

## Knee arthritis

### Staying fit and active

You enjoy your morning walk, but you find yourself wincing from knee pain. If this gets any worse, you fear that you may need to drastically reduce your activity level.

Knee arthritis is common in older adults. It can be painful and may cause you to stop your exercise routine or avoid activities that you once enjoyed.

You may not be able to do everything you once did, but a well-planned exercise routine along with other pain-relieving techniques can greatly improve your ability to be active with less pain and limitation.

### Knee geography

In older adults, a common source of knee pain is osteoarthritis, often referred to as wear-and-tear arthritis. Osteoarthritis involves damage or gradual wearing away of the smooth, slippery cartilage that lines a joint.

Osteoarthritis pain can be felt as pain deep inside the joint or on the side of the knee. Arthritis can also occur under the kneecap (patella). This usually causes pain around or under the kneecap.

Pain from knee arthritis is often worse when you first start moving in the morning or briefly after a period of inactivity. It may also be worse when going up or down a step — or may increase with overuse. Additional signs and symptoms may include stiffness of the joint, a feeling that the joint is unstable, swelling, or a feeling of clicking, grinding or locking within the joint.

Talk to your doctor if you have severe knee pain or persistent knee pain that's bothering you or interfering with your day-to-day life. There are many potential causes of knee pain other than osteoarthritis. Diagnosis often requires a physical

examination and possible X-rays or other imaging tests and blood tests.

## Back in the groove

Addressing osteoarthritis of the knee often starts with:

■ **Strengthening** — This is the cornerstone of knee joint therapy. Strengthening the muscles around your knee and hip helps support the joint. This can help make the joint more stable and give the muscles a greater role in absorbing stresses exerted on the joint.

Strengthening of the front thigh (quadriceps) muscles appears to be of particular importance. A recent Mayo Clinic-led study found that greater quadriceps strength resulted in less pain and better function for people with knee arthritis. In addition, it appeared to prevent the loss of cartilage in those with arthritis of the patella.

■ **Weight loss** — Being overweight puts extra strain on knee joints. Losing weight can make it easier to walk and climb stairs.

■ **Low-impact exercise routine** — Physical fitness is an important part of managing knee arthritis. Regular aerobic exercise can improve pain and function and help you gain strength and maintain a healthy weight. Your doctor may recommend low-impact activities such as swimming, cycling or tai chi, which put less strain on your knees than do higher impact activities. Walking may be OK for some, as long as you're aware of your limits.

■ **Relieving pain flare-ups** — If your knee arthritis flares up, try periodically icing your knee with a cloth-wrapped cold pack. Total knee rest may be fine for up to a day, but it's usually best to keep the joint — and your body — moving in the least aggravating way you can.

■ **Oral medications** — Nonprescription pain medications, such as acetaminophen (Tylenol, others), ibuprofen (Advil, Motrin, others) or naproxen (Aleve, Naprosyn), can help ease ar-



**To do a squat, start with feet slightly greater than shoulder-width apart and toes pointing ahead or slightly outward. Slowly descend, bending through the hips, knees and ankles. Maintain a normal back arch. Descend to comfort and steady yourself with something stable, if needed. Don't bend your knees more than 90 degrees. Return to starting position.**

thritis pain. Talk to your doctor if you feel the need to take pain medication often. Regular or daily use can cause serious side effects for some.

■ **Topical medications** — The prescription gel diclofenac (Voltaren, Solaraze) is a topical anti-inflammatory drug that can be rubbed directly on the skin around the knee. Topical anti-inflammatory drugs appear to cause fewer side effects than do oral drugs of a similar class, such as ibuprofen or naproxen.

■ **Glucosamine sulfate and chondroitin** — These supplements may provide at least some pain relief in moderately advanced knee arthritis in some people. Studies are conflicting about the effectiveness of these drugs and whether chondroitin adds additional benefit when taken with glucosamine sulfate.

If you decide to take these supplements, consider trying them for

a 12-week trial period. If it seems to be helping by then, you may want to keep taking it. If it's not, you can stop taking the supplements.

■ **Knee bracing** — Various types of knee braces can help compress the joint and reduce swelling or realign the joint to lighten pressure in certain areas. Bracing can be fairly effective at reducing pain, providing a feeling of "support," and for some people, improving walking ability.

■ **Shoe selection or inserts** — A shoe with a soft, cushioned heel can help absorb some of the impact of walking. Your doctor may recommend placing a wedge in your shoe heel to take pressure off the areas of your knee that are involved with arthritis.

## When that's not enough

When pain isn't well controlled with conservative measures, additional options may include:

■ **Knee injections** — One type of injection uses an anti-inflammatory corticosteroid. This may provide pain relief for up to a few months. Typically, injections are limited to no more than three a year.

A second type involves injecting into the joint a thick, natural fluid (hyaluronic acid) that may help lubricate the joint and possibly reduce inflammation. Called viscosupplementation, this can involve from one to five injections over several weeks. It doesn't offer immediate pain relief, but improvement in pain and function that may last up to a year.

■ **Joint replacement surgery** — This is an important option of last resort for advanced osteoarthritis. Extensive joint damage typically requires a total knee replacement. However, you may be a candidate for a partial knee joint replacement if only certain parts of the joint are damaged. This is usually a less extensive procedure than is total knee replacement and often results in a quicker recovery. □

# Disrupted blood cells

## Cure is elusive for myelodysplastic syndrome

Being tired is one thing, but lately you feel exhausted after doing basic things, such as getting dressed in the morning. Could it be fatigue due to anemia?

Tests reveal the problem isn't simply iron deficiency. Your doctor says you have a condition known as myelodysplastic (mi-uh-lo-dis-PLAS-tik) syndrome.

Myelodysplastic syndromes are a group of disorders caused by poorly formed or dysfunctional blood cells. Because a cure remains elusive for the majority of people with these progressive blood disorders, treatment focuses on controlling symptoms, improving quality of life and delaying worsening of the disease.

### Out of control

Normally, blood cells are produced in an orderly, controlled fashion within bone marrow. The main types of blood cells produced are:

- Red blood cells that carry oxygen throughout the body
- White blood cells that help protect you from infection
- Platelets that help your blood to clot normally

Myelodysplastic syndromes occur when the controlled production of blood cells is disrupted. The result is immature blood cells that don't function normally and either die in bone marrow or just after entering your blood. Myelodysplastic syndromes differ from one another depending on which type or types of healthy blood cells are lacking in bone marrow or blood.

Myelodysplastic syndromes often don't cause symptoms early on. Sometimes, routine blood tests detect the problem. Over time and with fewer

and fewer healthy blood cells, myelodysplastic syndromes may cause:

- Fatigue or tiredness
- Shortness of breath
- Unusually pale skin
- Easy or unusual bruising or bleeding
- Pinpoint red spots just beneath your skin from bleeding
- Fever or frequent infections

Risk of myelodysplastic syndrome is higher for men. Most people who have it are 60 or older, but it can occur in younger people. For the majority of people, the cause isn't clear.

### Diagnosis and treatment

Diagnosis of myelodysplastic syndrome usually involves blood tests and a bone marrow biopsy.

How myelodysplastic syndrome progresses depends on several factors, such as additional molecular and chromosome markers. Some people do well for many years. Others who develop more-aggressive forms of the disorders may require intensive treatment, including chemotherapy. In a small fraction of people, myelodysplastic syndromes may develop into acute leukemias.

There are treatments for myelodysplastic syndromes, but it's difficult to achieve a cure. Generally, treatment ranges from supportive care that helps relieve symptoms to more aggressive treatments that possibly slow or prevent disease progression. Some options include:

■ *Blood transfusions* — These may help replace red blood cells or platelets that are lacking.

■ *Growth factor injection therapy* — Hematopoietic growth factors, such as erythropoietin or darbepoetin, are proteins that promote production of red blood cells. Growth factors that specifically stimulate white blood cells — such as filgrastim (Neupogen) or sargramostim (Leukine) — can be given as well.

■ *New drug therapies that modify gene function* — The medications

azacitidine (Vidaza) and decitabine (Dacogen) may improve quality of life and survival time. These drugs help modify gene function and can be successful treatment options. Lenalidomide (Revlimid) is another effective new drug, especially for anemia and in myelodysplastic syndromes that have a particular chromosome marker missing.

■ *Immunosuppressive drugs* — In rare forms of myelodysplastic syndromes, an immune dysfunction can cause and contribute to slow production of blood cells. In these instances, medications that suppress the immune system may be used.

■ *Chemotherapy* — This is often used for younger people and those with aggressive disease. For some, intensive chemotherapy can make the disease go into remission. Others may encounter a return of the disease and the need for more therapy.

■ *Bone marrow transplant* — This is the only treatment with potential long-term remission or possible cure. However, for most, the risks outweigh the benefits. The procedure requires a matched donor and high doses of chemotherapy to prepare for a transplant. Bone marrow transplant can be done at any age, but risks go up with age.

### Hope for the future

New advances are contributing to the development of therapies for myelodysplastic syndromes. Advances with drug therapies — notably, azacitidine, decitabine and lenalidomide, which may reduce the need for blood transfusions — have improved outcomes and quality of life.

Ongoing clinical trials continue to explore the latest treatment options for myelodysplastic syndromes. Resources with clinical trial information include the Leukemia & Lymphoma Society, American Cancer Society and large, academic medical centers. Mayo Clinic has several clinical trials under way for people in various stages of myelodysplastic syndrome. □



# Juicing fruits and vegetables

## A better way to eat?

If you've spent your life munching fruits and vegetables because they're good for you — but have never really liked them — the thought of quickly swigging produce from a cup may pique your interest.

That's one essential appeal of juicing, which involves using an appliance that can turn most raw fruits and vegetables into liquid.

Juicing has its advantages and can add zest to your diet. However, claims made by juicing proponents are often far-fetched. Take time to separate the truth from the pulp before you decide if juicing is for you.

## What is juicing?

The idea of juicing has many variations, including trendy juice bars, juicers sold on television infomercials, and a simple glass of freshly squeezed juice. Home juicing appliances may cost anywhere from \$30 to more than \$300. They include a fairly simple citrus juicer, designed to ream out only the juicy insides of, for example, an orange to make orange juice.

Juice extractors are generally what you see advertised on television. These involve whirling blades that chop the food into tiny pieces, which are then spun or pressed to separate the juice from the dietary fiber of the plant. When the juicing process is over, you're left with a glass of liquid and varying amounts of pulp, which is dietary fiber. Some juice extractors can be adjusted so that you can filter out more or less pulp. With high amounts of pulp, the juice will have a more pudding-like consistency. With less pulp, the juice will be more watery.

## Carrot orange juice

Juice and enjoy:

3 medium carrots  
2 medium celery stalks  
1 large orange, peeled  
1 inch of ginger root  
(about 1 1/2 tablespoons)

### Analysis:

Calories	165
Carbohydrates	37 grams
Protein	4 grams
Fat	trace
Cholesterol	0 milligrams
Sodium	190 milligrams
Potassium	1,068 milligrams
Calcium	146 milligrams
Fiber	10 grams

Contains 625% of recommendations for vitamin A, 139% for vitamin C, and 25% or less for most other vitamins and minerals

## The claims

Many people enjoy juice and the flavor combinations that can be made with a home juice machine. Juicing can be a way to add to your diet all or part of fruits or vegetables that you normally wouldn't eat.

For people who don't like to eat fruits and vegetables — and don't eat very many in a day — juicing can be a great way to supplement fruit and vegetable intake. Fruit and vegetable juices contain many of the vitamins, minerals and plant chemicals (phytonutrients) found in whole fruits and vegetables.

However, there's no convincing evidence that juicing is healthier than eating whole fruits and vegetables. In some respects, it may be less healthy. Fiber is one of several healthy components of fruits and vegetables, and juicing removes at least some — and often most — of the fiber from a fruit or vegetable.

In addition, claims made by juicing proponents often don't stand up to scrutiny, including claims that:

■ *Your body adsorbs more nutrients from juice* — The theory

here is that fiber is too taxing on your digestive system and that it impairs digestion of fruit and vegetable nutrients. Your digestive tract is designed to handle fiber and to extract nutrients from a wide variety of foods. Your digestive tract also needs fiber in order for it to function and to remain healthy.

■ *Juices can help cleanse toxins from the body* — There's no convincing evidence to support this. The kidneys and liver are efficient processors and eliminators of toxins.

■ *Juicing helps with weight loss* — Weight gain or loss hinges on the number of calories you consume, and the number of calories you burn.

Juicing may contribute to greater calorie intake. Some homemade vegetable juices can contain significant amounts of natural sugars and may contain more calories than you think. In addition, it's easier to drink a lot of liquid calories without realizing how much you've taken in. If you eat whole fruit and vegetables in place of their equivalent in juice, you may feel fuller longer.

■ *Juicing is economical* — If you already drink a lot of juice, the cost of buying a juicing machine and juicing at home may be lower over time than is regularly buying bottles of 100 percent fruit or vegetable juice.

But the money you spend may actually increase, because you need a lot of produce to make juice. It's possible that you may save money and have better health benefits by purchasing the usual amounts of fruits and vegetables and eating them whole.

## A few tips

If you make your own juice, try to include as much plant fiber in the juice as you can. In addition, make only as much as you can consume at one time. Juice that isn't consumed right away can harbor bacteria. □



# Second opinion

**Q: It's not too often that I get a good night's sleep. Can this be bad for my health?**

**A:** Yes, it can. Most people associate a lack of sleep with feeling tired or irritable, having difficulty focusing on a task, and slowed reaction times. But ongoing lack of sleep or insomnia may lead to other, less obvious health consequences.

One recent study found that people who regularly slept less than seven hours a night were almost three times more likely to catch a cold than were study participants who slept eight or more hours a night. In addition, people who tossed and turned at night or had trouble falling asleep were 5 1/2 times more likely to catch a cold than were those who slept most soundly.

It's also thought that regularly sleeping less than six hours a night may increase risk of worsening or developing high blood pressure. This may increase the risk of cardiovascular diseases such as stroke and heart problems. It's believed that poor sleep can prevent a nightly decline in blood pressure that typically occurs in those who sleep well. Lack of sleep may also hurt your body's ability to manage stress hormones, over time contributing to increased blood pressure.

Frequent migraines or tension headaches are common among those who don't sleep well. But the relationship may be tricky to sort out. For example, headaches may prevent you from sleeping well or sleep apnea may be a cause of

headaches. Sleeping either fewer than six hours or more than eight also can be bad for headaches.

If you don't sleep well, talk to your doctor. Seven to eight hours of reasonably sound sleep a night is considered ideal for most adults. Strategies to improve sleep may include adjustments in sleep hygiene, behavior changes, pain management, judicious use of sleeping pills or treatment of a sleeping disorder. □

**Q: A friend recently spent a week in the hospital with what she called broken heart syndrome. What is it?**

**A:** Broken heart syndrome is a temporary heart condition that may occur in the wake of a highly stressful emotional situation, such as the unexpected death of a loved one, or receiving bad news. Sometimes, it occurs after physical stress, such as a car accident. The syndrome is much more likely to affect women, primarily postmenopausal women. It also is referred to as takotsubo cardiomyopathy, stress cardiomyopathy, stress-induced cardiomyopathy or apical ballooning syndrome.

For many, broken heart syndrome mimics a heart attack, causing sudden chest pain and shortness of breath. But unlike a heart attack, blockages in the heart's coronary arteries aren't the source of the chest pain. Instead, part of the heart — typically the left ventricle, or the heart's main pumping chamber — is temporarily weakened.

What causes the condition is unclear. It's thought that a surge in stress hormones may be responsible for transient changes in the heart's function. A recent Mayo Clinic study found that in women diagnosed with broken heart syndrome, blood vessels react abnormally during mental stress.

Recovery usually includes a hospital stay of less than a week. Although there's no specific therapy for broken heart syndrome, standard heart failure medications — such as angiotensin-converting enzyme (ACE) inhibitors, beta blockers or diuretics — are typically prescribed to reduce the heart's workload during recovery. Typically, the left ventricle fully recovers within one to four weeks.

Because recurrence of broken heart syndrome is possible, long-term treatment with beta blockers may be recommended to block the effects of some stress hormones. □

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## Have a question or comment?

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MC2019-0211  
100211

Printed in the USA