

MAYO CLINIC HEALTH LETTER

Reliable Information for a Healthier Life

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For many older adults, being told they have small pouches (diverticula) along the wall of their large intestine (colon) — diverticular disease — comes as a surprise. But it's a common surprise. It's estimated that 60 percent of Americans have diverticula by age 60, and that percentage keeps climbing with age.

Most people learn they have diverticular disease as a result of a colon exam done for another reason, such as screening for polyps and colorectal cancer. However, some people learn of their diverticular disease after a pain-

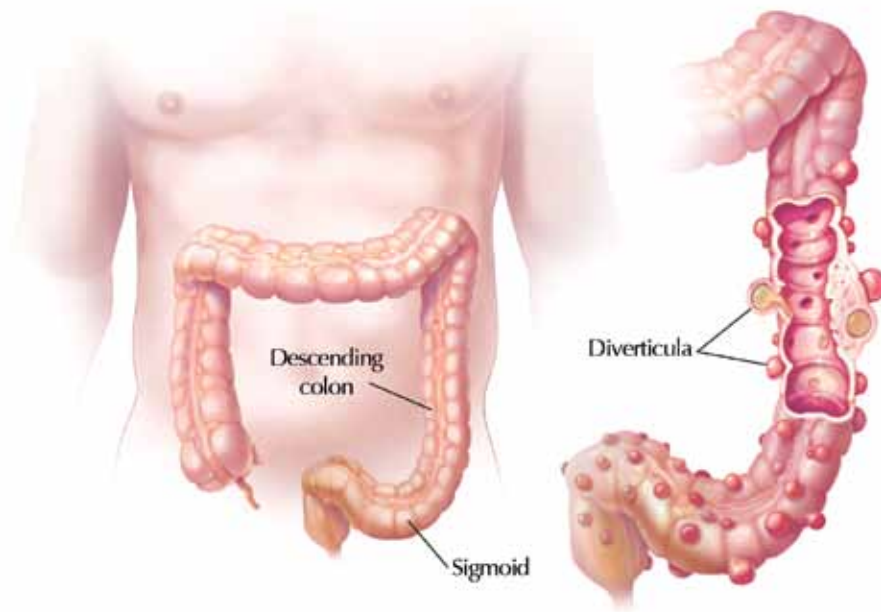
ful attack caused by the inflammation of a diverticular pouch (diverticulitis).

An attack of diverticulitis only occurs in a small percentage of people with diverticular disease. In most instances, it can be treated successfully, but complications sometimes develop that warrant hospitalization or surgery — and may even be life-threatening.

Weak spots

Diverticular pouches (diverticula) most commonly form in the last portion of the colon (sigmoid colon) before it turns into the rectum. However, among Asians, they often develop in the first part of the colon (ascending colon).

Diverticula develop at points where blood vessels run through the colon wall to supply the inner layers of colon tissue. The areas around these vessels are



Diverticular pouches (diverticula) most commonly form in the last portion of the colon (sigmoid colon) before it turns into the rectum.

thought to be weak points. It's suspected that something causes an abnormality in how colon muscles propel stool through the colon. This results in increased pressure in the sigmoid colon, possibly causing weak spots to balloon out.

It's not fully understood what causes the initial colon abnormality. However, it's known that diverticular disease is common in industrialized cultures. In addition, diverticular disease was uncommon before 1900. These observations, coupled with research, indicate that modern living may result in risk factors for diverticular disease, including:

- **Lack of dietary fiber** — This contributes to small, hard stools that take longer to pass, and are more difficult to pass. Although not proved, this appears to be one of the most likely contributors to sigmoid colon changes that set the stage for development of diverticular disease.

- **Lack of exercise** — Research has shown an association between vigorous exercise and a reduced risk of diverticular disease. The reduced risk resulting from exercise is enhanced by high-fiber intake.

- **Obesity** — One study found that obesity raised the risk of diverticular disease by about 50 percent more than not being obese. The risk of diverticular bleeding also was increased.

- **Aging** — It's not known why age increases risk, but it may be due to a decrease in the strength and elasticity of your bowel wall.

A flare up

Diverticular disease — meaning the mere presence of pouches — generally produces no symptoms. Typically, diverticula become a problem when inflammation or infection develops. When that happens, it's called diverticulitis.

The prominent symptoms of diverticulitis are pain and tenderness in the lower left side of the abdomen. The pain is often intense and comes on suddenly. However, it may sometimes be less severe, fluctuating and gradually building over days. In addition, signs and symptoms may include fever, nau-

sea, constipation or diarrhea, and occasionally urinary problems. Painless rectal bleeding is also associated with diverticulitis, and usually isn't associated with inflammation or pain.

Diagnosis usually includes a review of symptoms, a check for abdominal tenderness and blood tests, such as a white blood cell count, that looks for signs of infection. A computerized tomography (CT) scan is considered the optimal method for visualizing your colon and looking for signs of inflammation, infection or other complications.

Another consideration is whether hospitalization is necessary. Most people can follow up with treatment at home. However, hospitalization may be appropriate for more severe diverticulitis, diverticulitis with complications — or for those who are older, who have weakened immune systems or who have other significant diseases.

Milder bouts

For about 75 percent of those with an attack of diverticulitis, the condition is considered mild (uncomplicated).

It's thought that diverticulitis develops when pressure in the colon or irritation of colon tissue causes inflammation of one of the diverticular pouches. A microscopic perforation may develop at that site, possibly causing the pain of a diverticulitis attack and leading to inflammation of the colon wall. Protective mechanisms within the abdomen can typically seal off the perforation.

In addition to nonprescription pain medication, treatment of uncomplicated diverticulitis usually involves:

- **Antibiotics** — A course of antibiotics is usually prescribed to kill off any infection that may have developed. A recent study has suggested that antibiotics may not always be necessary with mild diverticulitis. However, Mayo Clinic doctors still recommend antibiotic therapy for those with mild diverticulitis and an elevated white blood cell count or fever. More research is needed to determine who, if anyone, may be able to avoid antibiotics.

- **Liquid diet** — Switching to a clear liquid diet for a few days gives your colon a rest and may help inflammation and infection to heal. A gradual return to more normal eating — and eventually a high-fiber diet — can proceed after symptoms improve.

Uncomplicated diverticulitis usually resolves with appropriate treatment. However, complications can still emerge. If symptoms worsen or don't improve within two to three days or if it becomes difficult to take fluids by mouth seek a prompt reassessment.

Surgery warranted?

Complications of diverticulitis are serious and can be life-threatening. They include development of an infected, pus-filled pocket (abscess), rupture of an inflamed diverticulum into the abdominal cavity causing peritoni-

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tis, bowel obstruction from scarring and narrowing, or an abnormal connection (fistula) between the colon and another organ.

Complications usually require intravenous antibiotics and often surgery to remove the affected portion of colon and reconnect the healthy colon ends. An operation may sometimes be done on an emergency basis, such as for peritonitis, or scheduled for when the acute inflammation has settled down.

An emergency operation may involve more than one procedure several months apart, and may include temporarily creating an opening for stool to exit (colostomy) as a bridge to full repair and function. Laparoscopic surgery using small incisions and thin instruments is commonly performed in less extreme circumstances. Recovery is generally quicker with laparoscopic surgery.

After recovery

It's estimated that about 30 to 40 percent of those who have recovered from uncomplicated diverticulitis will have one or more attacks in the future. Additional attacks are generally similar in severity to the first attack and aren't associated with increased risk of complications. Although some believe that subsequent attacks are more likely to result in peritonitis and complications, current studies don't support that belief.

If attacks remain uncomplicated, they're treated in the same way as the first attack. An anti-inflammatory drug mesalamine (Delzicol, Pentasa, others) may be helpful to prevent diverticulitis in those with mild but frequent attacks that don't quite meet the requirements for surgery, and who don't want to remain on antibiotics.

With recurrence, doctors may assess the severity of your attacks, their frequency and your risk of developing complications in the future. If the risk is high, surgery to remove diseased colon segments may be recommended. This typically cures the disease.

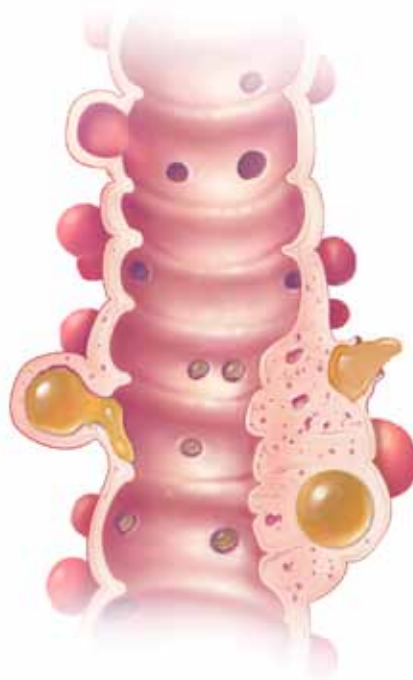
It's generally felt that improvements in lifestyle can prevent the progression

of diverticular disease, or help prevent recurrence of diverticulitis. Primarily, this involves gradually adopting a high-fiber diet by eating plenty of fruits, vegetables, whole grain products, beans and legumes.

It's recommended that men and women over age 51 get 30 grams and 21 grams of fiber daily, respectively. There's no evidence that foods such as seeds, nuts or popcorn increase the risk of diverticulitis.

A fiber supplement such as methylcellulose (Citrucel) or psyllium (Metamucil, others) may help boost your fiber intake. Aiming for a total of 30 to 60 minutes of moderate exercise most days may also be beneficial.

Although there doesn't appear to be a direct link between diverticular disease and colon or rectal cancer, occasionally what appears to be diverticulitis may turn out to be colon cancer. Because of this, your doctor may recommend a colonoscopy after you've recovered from a bout of diverticulitis. □



Life-threatening complications of diverticulitis include development or rupture of an infected, pus-filled pocket (abscess).

Health tips

Taking a breather

Deep-breathing exercises can help maximize oxygen exchange, facilitate relaxation and reduce stress. They can also act on the centers in your brain that lower blood pressure.

The following exercise can help get you started:

■ *Get comfortable* — Wear clothes that are loose at the waist, and either lie on your back or sit comfortably in a chair with your feet resting on the floor.

■ *Take position* — If lying down, rest one hand on your abdomen and one hand on your chest. If sitting, place your feet flat on the floor, relax your shoulders and put your hands in your lap.

■ *Basic breathing to start* — Inhale through your nose, as this filters and warms the air. Exhale through your mouth. Concentrate on your normal breathing for a few minutes.

■ *Inhale deeply* — Inhale while slowly counting to four or for about four seconds. Expand your abdomen slightly as you inhale. As you breathe in, imagine the air flowing to all parts of your body, supplying you with cleansing, energizing oxygen.

■ *Exhale slowly* — You may wish to hold the air in your lungs for a few seconds. Next, exhale to a count of four, as your abdomen contracts. Imagine tension flowing out of you along with the exhaled breath.

■ *Repeat* — Pause for a moment. Repeat this exercise for one to two minutes until you feel calm. If you experience lightheadedness, shorten the length and depth of your breathing. □

News and our views

Storing up brainpower for later years

Multiple studies have looked at the influence that brain-stimulating activities may have on brain health in later years, and most have found a positive association. Researchers are trying to understand what drives that association.



One recent study — published July 23, 2013, in *Neurology* — looked at whether mentally stimulating activity somehow helps delay the consequences of cognitive decline that might otherwise occur from brain changes associated with dementia.

For the study, 294 older adults were asked to rate their participation in brain-stimulating activities — such as reading books, writing and doing other mentally involved activities — from childhood to their current ages. In addition, tests to assess memory and thinking skills were given annually over about six years before their deaths. At autopsy, their brains were examined for any diagnostic signs of Alzheimer's disease and other brain diseases.

Even after accounting for those disease-related brain changes, researchers found that older adults who reported higher levels of mental stimulation from childhood, through middle age and into late years also had slower rates of cognitive decline. In short, the findings support the idea that more frequent mental stimulation across one's life span may create a sort of resilience — also known as cognitive reserve — in the brain.

Mayo Clinic experts say more research is underway to better understand this resilience and what factors contribute to it. Many questions remain, including whether resilience is something people are born with or something that's developed through lifelong mental stimulation and other lifestyle choices. □

Post-meal walking reduces blood glucose

When it comes to keeping blood sugar (blood glucose) in check, exercise is one of the best forms of medicine. Yet, some people aren't able to regularly squeeze in a 30- to 60-minute walk. It turns out they may not always have to.



A recent study indicates that 15-minute walks occurring 30 minutes after meals appear to be just as effective at 24-hour glucose control as going on a sustained, 45-minute walk once daily.

The research, published in *Diabetes Care*, involved 10 older adults who had fasting blood glucose readings that put them at risk of developing type 2 diabetes. On three separate occasions, each participant spent 24 hours living relatively normally, followed by 24 hours of normal living plus either treadmill walking for 45 minutes in the morning or in the evening, or walking for 15 minutes a half-hour after each of three daily meals.

All forms of exercise provided roughly equal glucose improvement. In addition, walking for 15 minutes after each meal lowered the post-meal spike of blood glucose when compared with taking a longer walk.

Mayo Clinic experts say the bottom line is that moderate exercise and physical activity are almost universally beneficial for health. This study helps prove that there are many ways to incorporate exercise into your life. A post-meal walk is a great time to walk the dog or perform an errand on foot. □

Pericarditis

Heart inflammation

There's a sharp pain by your heart, and the pain seems to be spreading along your arm and neck. Breathing deeply makes the pain worse, but you do get some relief from sitting up and leaning forward. You wonder, would this be a heart attack?

Anytime you experience new symptoms of chest pain, seek emergency medical care. Symptoms such as these may indicate inflammation of the lining of the heart (pericarditis). It's not life-threatening, but it shares symptoms of problems that are, such as heart attack and blood clots in the lungs.

A prompt medical evaluation of chest pain is the only way to know what's wrong. Fortunately, although symptoms of pericarditis are a justifiable cause for alarm, they can often be successfully treated with basic anti-inflammatory medications.

The rub

The pericardium is made up of two thin membrane layers that surround your heart like a sac. The pericardium helps limit heart expansion and helps the heart work efficiently.

Between the membrane layers is a lubricating fluid that smoothes the rubbing of the layers together as the heart expands and contracts with each heartbeat. Pericarditis occurs when those membrane layers become inflamed. The pain associated with pericarditis is thought to result from the inflamed pericardial layers rubbing against each other.

Most of the time, pericarditis occurs in an acute form, meaning it comes on quickly and lasts a few weeks or less. The most common symptom is sharp, stabbing chest pain behind the breastbone or in the left side of your chest that occurs even when you're at rest. However, acute pericarditis can also cause chest pain that's dull, achy or pressure-like.

The pain of acute pericarditis may travel into your left shoulder and neck. It often intensifies when you lie down or inhale deeply. Coughing, taking a deep breath or swallowing food also may make the pain worse. Sitting up and leaning forward can often ease the pain. Other than pain, signs and symptoms may include difficulty breathing, a dry cough, feeling sick with fever and chills, and an overall sense of feeling weak. Autoimmune diseases — such as rheumatoid arthritis — can trigger pericarditis, and when they do it's usually coupled with a flare of autoimmune symptoms.

Sorting it out

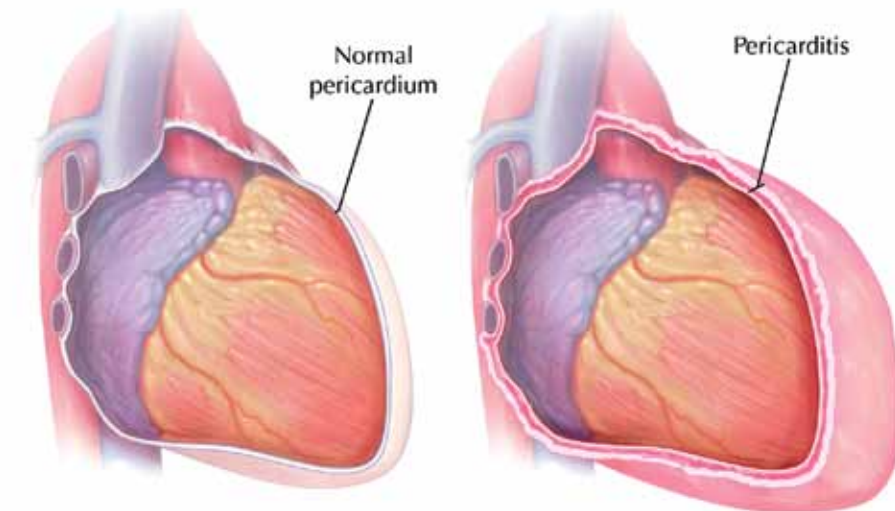
Acute pericarditis can usually be diagnosed based on symptoms and listening with a stethoscope for a characteristic sound made by inflamed pericardial membranes rubbing together. An electrocardiogram (ECG) to measure your heart's electrical impulses also may aid in diagnosis.

Additional testing is often performed to rule out a heart attack, which may cause up to 15 percent of acute pericarditis cases. A chest X-ray or echocardiogram is usually performed to look for potentially harmful complications of pericarditis — such as pericardial effusion, which is a buildup of fluid within the pericardial membranes.

About 70 to 80 percent of the time, acute pericarditis is attributed to a viral infection — or no underlying cause can be found. Since this low-risk situation is so common, your doctor may — based on your symptoms, test results and medical history — elect to forgo more extensive testing.

However, if doctors suspect a treatable — and possibly more worrisome — underlying cause, additional blood testing may be done. Additional evaluation may also be performed if your symptoms don't improve after one week with standard treatment. Less common underlying causes may include:

- Infections, including tuberculosis.
- Autoimmune or inflammatory diseases such as rheumatoid arthritis, sys-



temic lupus erythematosus (SLE) or inflammatory bowel disease.

- Prior chest radiation for lymphomas and lung or breast cancers.
- Other problems such as kidney failure, tumors or trauma such as an automobile accident. Pericarditis can also occur in the weeks after a heart attack or heart surgery.

Calming inflammation

If nonviral causes of acute pericarditis have been ruled out — and complications aren't a problem — treatment can usually occur at home. Initial therapy attempts to control pain, reduce inflammation and reduce the risk of recurrence. Therapy may include:

- Nonprescription naproxen sodium (Aleve, others), or possibly another nonsteroidal anti-inflammatory drug (NSAID), such as indomethacin (Indocin). Aspirin also may be an option. Your doctor may recommend that you also take a medication to reduce stomach acid while you are on NSAIDs, since they can increase your risk of gastrointestinal problems.
- Colchicine (Colcrys), an anti-inflammatory drug often used to treat gout. This may be added to the NSAID drug, particularly if pericarditis symptoms are severe or recur. It appears to reduce risk of recurrence.
- Temporary restriction of strenuous activity, as this may increase the risk of recurrence.

Most people with acute pericarditis respond well within one week to these treatment measures, but recurrence weeks, months or even years later isn't uncommon.

Evaluation and treatment may get more involved with recurrence — or if an underlying cause is discovered, complications develop or symptoms don't respond to standard treatment. Additional treatment options include:

- Oral corticosteroids. These were more commonly used in the past, but they're now only selectively used in situations such as when NSAIDs and colchicine fail to work or if an autoimmune or inflammatory disease is the underlying cause of pericarditis. Steroid use may actually increase the risk of recurrent pericarditis.
- Treatment of an underlying cause, such as antibiotics for a bacterial infection or therapy for an autoimmune or inflammatory disease.
- The draining of fluid from the pericardium. This addresses a complication called cardiac tamponade that occurs when too much fluid accumulates between pericardial membrane layers. The fluid puts pressure on the heart so that it can't pump properly, leading to drops in blood pressure that can be fatal.

Draining of the fluid is an imaging-guided procedure that involves carefully inserting a needle or catheter into the pericardium and draining out the excess fluid. □

Lowering blood pressure

Devices that help

Your blood pressure is elevated enough to require treatment. Your doctor is suggesting a medication to lower it. You've already made some improvement with lifestyle measures, but that hasn't done enough. Yet, you'd rather avoid taking a drug. Are there other options?

Maybe. New options for modest reductions in blood pressure are portable, at-home medical devices. Whether these devices are worth the investment in time and money is a personal question. Some people may find them helpful, while others may be able to achieve similar results without purchasing a device.

Pumped up

Blood pressure is the internal force that blood exerts against the walls of your blood vessels. Although a certain amount of force is needed to pump blood, too much force over time makes the heart work harder to pump blood and gradually causes damage to blood vessels and many internal organs such as the heart, brain and kidneys.

Hypertension is defined as being 140 millimeters of mercury (mm Hg) or higher for your top (systolic) number in a blood pressure reading, and 90 mm Hg for your bottom (diastolic) number.

Ideal blood pressure is a systolic reading of 119 mm Hg and below and

a diastolic reading of 79 mm Hg or below. Between ideal blood pressure and hypertension is prehypertension, a category that isn't quite hypertension, but increases cardiovascular risk.

Deep-breathing devices

Stress typically causes rapid, shallow breathing from the chest, which in turn reinforces the overall feeling of stress. Deep, slow breathing from your diaphragm is more relaxing and acts on centers in your brain that lower blood pressure.

A device approved by the Food and Drug Administration called Resperate is designed to train deep breathing. Resperate retails for around \$300.

The device includes a strap that goes around your abdomen to sense your breathing pattern, and an electronic interface with headphones. Resperate analyzes your breathing pattern and creates tones to guide your breathing pace. On average, you'll need to use Resperate for about 15 minutes, three to four days a week to sustain a significant lowering of your blood pressure.

Studies generally show that regular use of Resperate may provide an average systolic blood pressure reduction of about 4 mm Hg. Still, not every study on Resperate has shown benefit. To learn more about the product, go to www.resperate.com or call 800-220-1925 (toll-free).

■ *Doing it on your own* — There's no evidence that using the Resperate device is better than regularly practicing relaxed deep-breathing exercises on your own without the aid of a device. See "Health tips: Taking a breather" on page 3 to try a deep breathing exercise.

Handgrip devices

Gripping an object and holding the grip is a form of nonmoving (isometric) exercise that may affect a number of body functions related to blood pressure. This type of exercise appears to help calm the fight-or-flight responses of the nervous system and may help improve function of blood vessels,

thereby allowing blood to flow easier and with less pressure.

One device that takes advantage of this effect is the Zona Plus, which retails for around \$400. This hand-held device calibrates the strength of your grip, then guides you to a proper grip tension for two, two-minute bouts of continuous gripping on alternating hands. These sessions are performed five times a week.

Research on handgrip devices is somewhat limited, but the evidence so far indicates that regularly using them can result in around a 10 percent decline in systolic and diastolic blood pressure. If you have a systolic reading of 140 mm Hg, that's a decline of about 14 mm Hg. It's recommended that people with blood pressure at or above 180/110 mm Hg avoid isometric exercise until their blood pressure is better controlled. More information about the device is available at www.zona.com or by calling the company at 866-669-9662 (toll-free).

■ *Doing it on your own* — In lieu of a Zona Plus, a simple, spring-loaded grip device from a sporting goods store may suffice. Choose a grip device that feels like it takes about 30 percent of your grip strength to operate. Grip the device for two minutes in one hand. After that, give yourself a minute or two to rest, then grip the device for two minutes in the other hand. Repeat that sequence one more time. Perform this at least three times a week for eight to 12 weeks to test if this mode of exercise is effective at lowering your blood pressure.

Take-home message

The best role for these devices is always as an addition to making important lifestyle changes if you have mild elevations of blood pressure. Maintaining a healthy weight, reducing sodium intake, getting regular exercise, not smoking, reducing stress and consuming alcohol in moderation, if at all, can each lead to a similar or greater decrease in blood pressure than can be achieved by using a device. □



Zona Plus, left, and a simple, spring-loaded grip device are strengthening tools that may help lower blood pressure.

Acetaminophen

Generally a better choice

Acetaminophen is one of the most commonly used pain relievers. When used properly on its own, acetaminophen (Tylenol, others) is often the safest pain reliever choice. The maximum dose for adults in a 24-hour period is generally 4,000 milligrams (mg), but some manufacturers are voluntarily setting the maximum dose levels even lower.

Acetaminophen is found in a lot of combination medications, both nonprescription and prescription. So it's possible to unwittingly use more than one acetaminophen product, which increases your risk of getting too much of the pain reliever.

Fortunately, you can take simple steps to reduce that risk. Those steps along with recent lowering of acetaminophen amounts in some nonprescription products and in prescription combination drugs are important factors in the safe use of this pain reliever.

What sets acetaminophen apart

Many nonprescription products are nonsteroidal anti-inflammatory drugs (NSAIDs). These include ibuprofen (Advil, Motrin IB, others) and naproxen sodium (Aleve). While NSAIDs provide pain relief and help reduce inflammation, their use is associated with some risks, especially at higher doses or when taken for longer periods of time. Risks include the possibility for stomach ulcers and bleeding or kidney problems.

In addition, heart attack and stroke risk may increase with NSAID use, especially if you've had a heart attack or have established cardiovascular disease. Cardiovascular risk is lower with aspirin products because aspirin reduces risk of blood clotting. Even so, the risk of stomach bleeding can still be a concern when taking aspirin.

Unlike these other pain relievers, acetaminophen doesn't raise the risk of stomach bleeding or heart attack. How-

ever, staying within the daily dose parameters is critical to avoiding possible liver damage. Those parameters may be even lower if you have liver disease.

Players in a liver cascade

Your liver acts like a large filter, and one of its major functions is to neutralize toxic substances. Normally, the liver clears your blood of drugs, alcohol and potentially harmful substances before they can do damage. These trapped substances are then broken down and rendered inactive by liver cells.

When taken properly, acetaminophen is the safest pain reliever choice.

If too much acetaminophen is taken, the usual breakdown process changes and a small amount of a toxic compound is produced. This compound can be extremely harmful to liver cells if it's not detoxified by a liver compound called glutathione.

Typically, a healthy liver has an adequate store of glutathione to do the job — if acetaminophen amounts don't exceed 4,000 mg in a 24-hour period on a regular basis. If there's consistently more acetaminophen than that, the liver's stores of glutathione can become depleted, allowing the toxic compound to accumulate and destroy liver cells.

Serious liver damage — even liver failure — can result from excessive intake of acetaminophen. The dangers of liver damage can be even higher if you have liver disease or drink three or more alcoholic drinks a day while taking acetaminophen.

The problem with combos

Let's say you take acetaminophen for a late-day headache, thinking you're well below the 4,000 mg threshold. If you're also taking a cough and cold medicine that same day and a prescription painkiller for back pain, you may not realize you've crossed the threshold.

More than 600 medications — both nonprescription and prescription —

contain acetaminophen. In addition to pain relievers and fever reducers, acetaminophen is found in many nonprescription combination products that have more than one active ingredient to treat different symptoms. Examples include cough and cold medicines, flu remedies, some allergy medicines, and sleep aids.

Among combination prescription drugs, acetaminophen is often paired with opioids, such as codeine (Tylenol with Codeine, others), oxycodone (Percocet, Roxicet, others) and hydrocodone (Vicodin, Norco, others).

Final word

Concerns about acetaminophen come down to knowing how to use it safely. Basically, when taken as directed, it's the safest nonprescription pain reliever choice available.

Proper use of acetaminophen isn't associated with stomach bleeding and heart attack associated with other nonprescription pain relievers. □

Keep it safe

The Food and Drug Administration has asked prescription drug manufacturers to standardize and lower acetaminophen levels in combination drugs to no more than 325 milligrams of acetaminophen in a tablet or capsule.

To further reduce your risk of taking too much acetaminophen:

- **Read the label** — Prescription labels may list abbreviations for acetaminophen such as APAP. If in doubt, ask a pharmacist.

- **Keep track** — Don't take more than one product that contains acetaminophen at any given time. If it's necessary to take two or more products containing acetaminophen, use a log to keep track of how much and how often you take the medications.

Second opinion

Q My doctor is concerned about my resting heart rate, which is 89. For now, he wants me to try to get in more activity and lose a little extra weight to try to lower it. Why should heart rate be a concern?

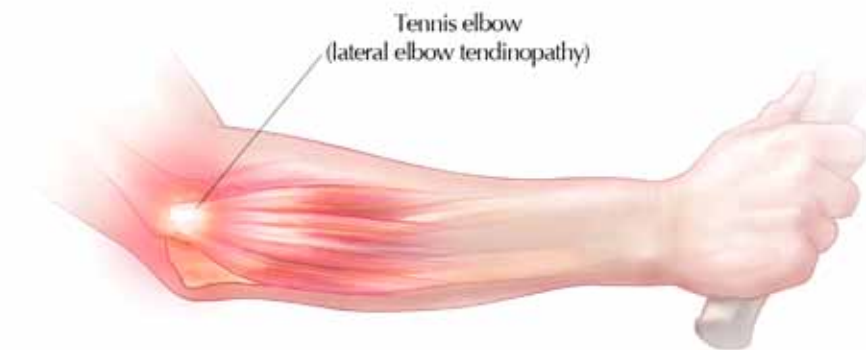
A There's some new data from a large, well-done study in the Netherlands that suggests a high resting heart rate may signal trouble ahead in the form of heart failure.

The study, which involved more than 1,800 otherwise healthy older men, found that those with a heart rate of 79 beats a minute or higher had about a 50 percent increased risk of developing heart failure compared with men who had lower resting heart rates. The same didn't hold true for the nearly 3,000 women who were also part of the study. The apparent link between resting heart rate and increased risk of heart failure occurred only in men.

Generally speaking, a lower heart rate is better overall, since a well-trained heart muscle is more efficient, pumps more blood per contraction and therefore doesn't have to pump as often. Lifestyle changes, such as losing excess weight and getting more physical activity, are reasonable approaches to help lower your heart rate. □

Q I developed tennis elbow from doing yardwork. It's better now, but I'm wondering how to avoid this in the future.

A Tennis elbow (lateral elbow tendinopathy) is an irritation of tendons as they attach to the outer part of the elbow. It's common among tennis



Tennis elbow is an irritation of tendons where they attach to the outer part of the elbow.

players because swinging a tennis racket improperly or excessively can involve many of the factors that put you at risk of the injury, including:

- Making a repeated motion with the wrist, either lifting it up or twisting it out when the palm is down
- Prolonged or tense gripping, such as carrying a suitcase or even gripping a toothbrush
- Full extension of the arm, coupled with force
- Holding the wrist firm while exerting certain forces on the arm such as playing tennis or lifting weights

Whether you're playing tennis, doing yardwork, or doing something that involves a lot of hand, wrist and arm movements — such as food preparation or carpentry — you can minimize your risk of tennis elbow by avoiding the risk factors listed above.

To avoid problems, consider:

- Switching tasks periodically — or taking frequent breaks — so that you don't end up overworking a specific group of muscles and tendons.
- Trying to avoid gripping a tool harder than is necessary and being gentle with twisting or up-and-down motions of the wrist.

■ Wearing gloves or extra padding on a handle to reduce grip tension and reduce the impact of using the tool.

■ Trying to lift items without gripping. For example, when doing strengthening exercises, use body bands that you can wrap around your hand rather than grip.

■ Using rollers on bags and suitcases.

■ Using the best tool for the task and using the tool appropriately so that the tool does more of the work and your wrists and forearms do less. □

Have a question or comment?

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