Gout

A painful form of arthritis

Gout is a form of arthritis that causes sudden, severe attacks of pain, tenderness, redness, warmth and swelling in joints. It usually affects one joint at a time — typically the large joint of the big toe — and often at night. You may go to bed feeling fine, but then wake up in the middle of the night feeling like your big toe is on fire. The pain is so bad that you can’t even have a bed sheet covering it. Gout can also affect your ankles, knees, hands and wrists.

Some people have just one attack of gout and never have another. Others have recurring attacks and may be at risk of additional problems. Medications and lifestyle changes can usually reduce or eliminate the attacks.

Diet is only one factor

Gout is caused by excess uric acid in the blood and tissues. Uric acid is a waste product that results from the breakdown of purines. The main source of uric acid is the breakdown of your body’s naturally occurring purines. But purines may also come from your diet.

Gout was once known as the disease of kings because of its association with a diet rich in meat, seafood and alcohol — foods high in purines. However, anyone can get gout, and diet is only one factor. Why some people develop gout and others don’t is unclear, but its prevalence has been increasing over the last few decades, affecting more than 8 million Americans. The rise of conditions that often accompany gout — such as high blood pressure, obesity, diabetes, metabolic syndrome and
kidney disease — and some of the medications used to treat these conditions, such as diuretics, likely play a role.

**Tiny crystals**

Normally, uric acid dissolves in blood, is filtered through the kidneys and is excreted with urine. But sometimes your body produces too much uric acid or, more commonly, your kidneys don’t filter it adequately. When uric acid builds up in your blood, it can form microscopic urate crystals in a joint or surrounding tissue. These crystals look like shards of glass under a microscope and feel like shards of glass in your joints. This sets off an intense inflammatory reaction.

The pain of gout typically lasts five to 10 days, then gradually disappears. You may have a period of several weeks, months or even years with no symptoms at all followed by an unexpected painful episode. An attack of gout can be triggered by excessive alcohol intake, overconsumption of certain foods, surgery, severe illness or joint injury.

If gout isn’t treated, it may lead to persistent swelling, stiffness and pain in one or more joints after a number of years. The uric acid crystals may build up into large deposits called tophi (TOE-fie), which look like lumps beneath the skin around the joints. People with gout also have an increased risk of developing kidney stones.

To confirm a diagnosis of gout and rule out an infection — another cause of warm, red, painful joints — your doctor may withdraw fluid from the affected joint to look for crystals of uric acid within the white blood cells.

**Pain control**

Nonsteroidal anti-inflammatory drugs (NSAIDs) can relieve pain during a gout attack and reduce inflammation. They’re most effective when started as early as possible. Colchicine (Colcrys, Mitigare) also may be used to relieve pain and swelling during an acute episode, but it’s more likely to cause gastrointestinal upset than are NSAIDs. Corticosteroids, either injected directly into the affected joint or taken as a pill, can be helpful when NSAIDs or colchicine isn’t an option or when pain isn’t relieved despite adequate dosing.

Once an acute attack is under control, your doctor may prescribe a drug to reduce the risk of future episodes, but usually only if you have more than two attacks a year, tophi or chronic kidney disease.

Daily low-dose colchicine or NSAIDs help reduce the frequency of attacks.
and can be a useful bridge to more long-term preventive treatment such as allopurinol (Zyloprim) and febuxostat (Uloric). These drugs help keep the level of uric acid within a normal range. Other medications also are available and may be given as a supplement to those just mentioned, if needed.

Can diet help?

Although doctors no longer consider food and drink the main cause of gout, lifestyle changes can help. The biggest benefit may come from losing excess weight. Research shows weight loss through reduction of calories lowers uric acid levels and reduces the number of gout attacks. Losing weight also lessens the overall stress on joints.

It may help to avoid or minimize certain foods that have high purine levels, as they may contribute to high blood levels of uric acid. These include organ meats such as liver, kidney and sweetbreads; and seafood such as sardines and shellfish. Alcohol is thought to increase uric acid production — beer and liquor more so than wine. Drinking regular soda has been associated with increased gout risk, as well. Other foods high in fructose — such as processed and packaged foods — can increase production of uric acid, and also reduce the kidneys’ ability to get rid of uric acid.

In general, eat more fruits, vegetables and whole grains, which provide complex carbohydrates. Drink plenty of water. Cut back on saturated fats from red meats, fatty poultry and high-fat dairy products. For protein, choose low-fat or fat-free dairy products, such as low-fat yogurt or skim milk. Avoid simple carbohydrates, especially those with high-fructose corn syrup and other added sugars. In some reports, cherries and citrus fruits have been associated with a reduction in uric acid.

Although following such a diet isn’t likely to lower the uric acid concentration in your blood enough to treat your gout without medication, it may help decrease the number of attacks and limit their severity.

What’s pseudogout?

Pseudogout (SOO-doe-gout) is a type of arthritis sometimes confused with gout because it can cause the same sudden, painful swelling in one or more of your joints. As with gout, episodes can last for days or weeks. However, in pseudogout the crystals that irritate the joint — typically the knee — are calcium phosphate crystals, not uric acid. A more technical term for pseudogout is calcium pyrophosphate deposition (CPPD) disease.

Although the crystals causing the irritation are different, diagnosis and treatment are similar to what’s done for gout. A sample of joint fluid, aspirated through a needle and examined under a microscope, will tell your doctor what kind of crystal is causing the inflammation. Removing some of the fluid can also help reduce pain and pressure on the affected joint. In addition, X-rays may show signs of calcium crystal deposits in joints. Blood tests may reveal an underlying problem, such as a thyroid or blood disorder.

To relieve the pain, your doctor may recommend a prescription-strength nonsteroidal anti-inflammatory drug (NSAID) for several days until the flare subsides. Cold packs also can help reduce inflammation. Colchicine (Colcrys, Mitigare), a treatment for gout, also is effective at low doses for pseudogout in people who don’t have kidney or liver problems. If you can’t take these medications, corticosteroids are another option.

Health tips

Reducing foot odor

Everyone’s feet sweat. Wearing shoes creates a warm, dark, moisture-trapping environment that’s ideal for bacterial and fungal growth and as a result, foot odor. To keep foot odor in check:

- **Wash daily with soap** — This reduces the bacteria and fungi on your feet. Dry your feet thoroughly, especially between the toes, before you put on socks and shoes. A hair dryer on the cool setting can help.
- **Powder your feet** — With clean, dry feet, apply a light dusting of cornstarch or an antifungal powder to help keep the feet dry.
- **Choose the right socks** — Sports socks help keep moisture away from the skin and tend not to retain moisture. Wool or cotton socks also absorb moisture, although moisture can build up and cause odor. Change socks if they become damp.
- **Keep shoes fresh** — Buy shoes made of breathable material, such as sports shoes or shoes made of natural materials. Try not to wear the same shoes two days in a row unless they have thoroughly dried out. Remove shoe inserts when possible to help them dry faster. Shoes that have developed an odor may need to be thrown out if washing with soap doesn’t help.
- **Air them out** — If those around you don’t mind, kick off your shoes now and again to let your feet air out.
- **Seek help if needed** — If you have a foot wound or skin problem — or if your feet sweat excessively — talk to your doctor about therapies that may help.
News and our views

Dramatic rise of deadly skin cancer in older adults

Skin cancer risk might seem like a concern for young sunbathers on the beach or in tanning booths. However, older adults are one of the most likely age groups to develop — and die of — skin cancer. This includes melanoma, which can be a deadly type of skin cancer, especially if not caught early. Melanoma is the fifth most common cancer in men, and the sixth most common in women.

A recent study by Mayo Clinic researchers indicates that melanoma rates in older adults have risen dramatically in the past 40 years. In men age 61 and older, melanoma rates were 11 times as high in 2009 as in 1970. In women age 61 and older, rates were four times as high over that same time period. Most people in this study were white residents of a single county in Minnesota. Results may not apply to nonwhites, as fair skin is a risk factor for skin cancer — and more new cases of skin cancer occur among white people in the general population than any other racial or ethnic group.

Important steps you can take to prevent skin cancer development or to reduce your risk of becoming seriously ill or dying of skin cancer include:

- **Minimizing sun exposure** — Sun exposure throughout life — even as an older adult — can lead to damage of skin cell DNA, which can lead to mutation of genes that can turn a normal cell into a cancerous one. Take steps to reduce sun exposure. Avoid the midday sun, wear protective clothing — such as shirts, hats and sunglasses — apply sunscreen when going outdoors and avoid tanning beds. If you’re concerned about not getting enough vitamin D from sunlight, oral supplements are an equally effective, inexpensive and widely available alternative.

- **Checking skin** — Examine your skin often for new skin growths or changes in existing moles, freckles, bumps and birthmarks. Ask your doctor to perform a skin check, and ask how often you should have your skin checked by a doctor. Catching skin cancer early increases the odds of successful treatment. One piece of good news from the study mentioned above is that melanoma survival is better than in the past. In the 1970s, the melanoma survival rate at five years after diagnosis was 73 percent. In the 2000s, the melanoma survival rate at five years was 95 percent.

Diverticular disease

Preventing painful attacks

If you’re age 60 or older, there’s a 60 percent or greater chance that you have diverticular disease (diverticulosis). This means that small pouches (diverticula) have developed along the walls of your large intestine (colon).

For most people, diverticula never cause a problem. You may only learn of the disease as a result of a colon exam done for another reason. However, up to about 15 percent of those with diverticula experience a painful attack caused by inflammation or infection of a diverticular pouch (diverticulitis). A similar percentage of people may experience nonpainful rectal bleeding.

Diverticula and diverticulitis

Diverticula develop at weak points along the colon wall. Aging is a primary risk factor, but diverticula can develop at any age. They most commonly form in the last portion of the colon on the left side of the abdomen. In Asians, they often develop in the first part of the colon on the right side of the abdomen. Rectal bleeding is associated with diverticula, but not with diverticulitis.

Typically, diverticula become a problem when inflammation or infection causes diverticulitis. The most common signs and 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, sometimes it may be less severe, fluctuating and gradually building over days. Signs and symptoms may include fever, nausea, constipation or diarrhea, and occasionally urinary problems.

In diagnosing diverticulitis, your doctor will want to rule out other causes of abdominal pain, and determine whether hospitalization is necessary. Most people won’t need hospitalization,

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Use the examples above to determine if an unusual or suspicious spot on your skin may be melanoma. Also, look for any evolution or change in mole size, shape, color, elevation or symptoms such as itching or tenderness.
but it may be appropriate for more-severe cases or for diverticulitis with complications.

**Mild diverticulitis**

For about 75 percent of those with an attack of diverticulitis, the condition is considered mild, meaning there are no complications. However, mild attacks can still be quite painful. Typically, people with mild diverticulitis can follow up with home care. In addition to taking nonprescription pain medication as needed, treatment of mild diverticulitis may involve:

- **Antibiotics** — A course of antibiotics is usually prescribed to treat any infection that may have developed.
- **Liquid diet** — For people who have trouble tolerating their normal diet, switching to a clear liquid diet for a few days gives the colon a chance to rest and may help healing. Afterward, they can gradually return to normal eating — and eventually a high-fiber diet to help prevent recurrence.

Mild diverticulitis usually goes away with appropriate treatment. However, complications may still emerge. If symptoms worsen, don’t improve, or improve and relapse within two to three days, or if it becomes difficult to take fluids by mouth, seek a prompt reassessment.

**When surgery is needed**

Complications of diverticulitis may require intravenous antibiotics and surgery — sometimes emergency surgery. Nonemergency surgery is typically done laparoscopically and is scheduled after diverticulitis inflammation has settled down. It often involves removing the affected portion of the colon and reconnecting the healthy colon ends.

Emergency or urgent surgery is sometimes needed. This may involve one procedure that temporarily creates an opening for stool to exit (colostomy). This may be a bridge to a second surgery several months later for a full repair, removal of the colostomy and restored bowel function.

**Recurrent attacks**

It’s estimated that about one-third of those who have recovered from uncomplicated diverticulitis will have one or more attacks in the future. Additional attacks are generally similar in severity and aren’t associated with an increased risk of complications.

Recurrent mild diverticulitis is treated the same way as an initial attack. With multiple recurrences — or with smoldering diverticulitis that never really goes away — your doctor may reassess your situation and recommend surgery to remove diseased colon segments if the benefits outweigh the risks.

**Preventing attacks**

It’s generally felt that lifestyle improvements can reduce the risk of a first or a recurrent diverticulitis attack. Steps include:

- **Gradually adopting a high-fiber diet** — In one study, a high-fiber diet resulted in about a 40 percent decreased risk of diverticulitis attacks compared with a low-fiber diet. It’s recommended that men older than 50 get 30 grams of fiber daily and women older than 50 get 21 grams of fiber daily. This can be done by eating plenty of fruits, vegetables, whole grain products, beans and legumes. Seeds, nuts or popcorn can also add fiber — and importantly, there’s no evidence that these increase diverticulitis risk, as was once commonly believed. A fiber supplement such as methylcellulose (Citrucel, others) or psyllium (Metamucil) may also be used to boost your fiber intake.

- **Exercising regularly** — Vigorous exercise such as jogging or running appears to reduce the risk of diverticulitis.

- **Maintaining a healthy weight** — In one study, obesity was associated with about a 50 percent increased risk of diverticulitis attacks, particularly in those who carry more of that extra weight in the abdominal area.
Blood in urine

Not always serious, but worth checking

Seeing blood in your urine is alarming. But blood in the urine also can show up in microscopic amounts found during a urine test for another reason.

Either way, blood in the urine (hematuria) warrants a doctor’s evaluation. Some causes of hematuria — such as cancer — can be serious and are more common in older adults. Other causes are fairly harmless, and may clear up with little or no treatment.

Clues to cause

Blood in the urine that’s clearly visible is called gross hematuria. Blood in the urine that isn’t clearly visible is called microscopic hematuria.

With gross hematuria, urine may be red or pink or similar in color to cola, tea or rust. Gross hematuria often occurs without other symptoms. It takes very little blood to discolor urine, so you’re probably not losing as much blood as it may appear. However, heavier bleeding may be occurring if you’re passing blood clots. This is an urgent issue that can be painful and puts you at risk of having a blocked bladder outlet and inability to pass urine (urinary retention).

The first step is to determine if any discoloration is actually blood. Urine can become discolored in other ways, such as by blood proteins (hemoglobin or myoglobin), from eating beets or by select medications, including some used to treat urinary tract infections. Occasionally, vaginal bleeding can be mistaken for hematuria and vice versa.

With both gross and microscopic hematuria, the initial finding is tested with a urinalysis to confirm the results and test for a urinary tract infection.

Confirmed gross or microscopic hematuria in older adults nearly always indicates the need for an evaluation to determine the cause of bleeding. The risk of hematuria being an indicator of cancer somewhere in the urinary tract increases substantially after age 40, and in most cases it’s the first symptom.

There can be numerous steps in the diagnostic process, but important goals are determining if bleeding is:

- Caused by a urinary tract or kidney infection — Symptoms of an infection may include a frequent urge to urinate, burning with urination, and abdominal pain or pressure. More-severe symptoms such as a fever, chills, and back or side pain may indicate a kidney infection. Even if you don’t have symptoms, urine tests are almost always performed to check for an infection.
- Caused by cancer — If suspected, testing for cancer may include looking for kidney, bladder, prostate or other potential cancers. A history of smoking, working with chemicals or dyes, radiation to the pelvic area, and other factors heighten the risk of urinary tract cancer.

The possibilities

There’s no direct treatment for hematuria. Rather, treatment is directed at the underlying cause.

In addition to infection, kidney disease and cancer as possible causes of hematuria, there’s a long list of other possibilities, with some being more common than others. Possible causes that are temporary and generally not worrisome or are easily addressed include strenuous exercise — particularly running — a blow to the kidney area or various medications such as the cancer drug cyclophosphamide or anticoagulating drugs such as warfarin.

Other possible causes may include:
- An enlarged prostate — Benign prostatic hyperplasia (BPH) is a common condition that causes an increase in the size of the prostate gland, which surrounds the urethra. New blood vessel growth that occurs with this condition can create fragile blood vessels near the urethra that are delicate and susceptible to rupture.
- Inherited disorders — A number of inherited kidney diseases, such as polycystic kidney disease or Alport syndrome, can cause hematuria. For those of African descent, sickle cell anemia can be a cause.
- Kidney or bladder stones — Minerals in urine can form crystals that can become small, hard stones. You may not know you have them unless they begin to pass through the urinary tract, causing often-excruciating pain.

It’s fairly common for no cause of hematuria to be found. For older adults with hematuria of undetermined cause, follow-up testing is usually recommended. One goal is to determine if the hematuria was temporary, persistent or intermittent. Another goal may be to remain watchful — or take an additional diagnostic look — for cancer or another disease that wasn’t previously detected.
Metformin

Potential new benefits from an old drug

If you have type 2 diabetes, chances are you take a drug called metformin (Glucophage, Fortamet, others). Metformin does a good job of keeping blood sugar in check, has few side effects and is low cost. But it may have other benefits as well.

In various studies, metformin has emerged as a drug that may work not just against diabetes but also against cardiovascular disease, obesity, cancer and aging. The research is still in the early stages, but the hope is that this common, inexpensive drug may one day have far-reaching benefits.

What is metformin?

Metformin belongs to a class of drugs called biguanides (bi-GWAH-nides). Between meals, your liver normally releases stored glucose into your bloodstream. Often, in people with type 2 diabetes, too much glucose is released. One of the mechanisms of metformin is to activate an enzyme known as 5'-adenosine monophosphate kinase (AMPK), which reduces the amount of glucose your liver releases, lowering blood sugar. AMPK activation also increases the activity of insulin receptors so that your body uses insulin more effectively.

The most common side effects of metformin are gastrointestinal, such as nausea, vomiting and diarrhea. These side effects often go away over time, but for some people it’s reason enough to switch to a different drug.

Bonus benefits

In addition to being an effective component of type 2 diabetes treatment, metformin appears to have other properties as well, including effects on:

- **The cardiovascular system** — Evidence suggests that metformin may improve blood cholesterol levels, including a reduction in triglycerides and low-density lipoprotein (LDL), or “bad,” cholesterol. Some studies of people with diabetes and metabolic syndrome — a cluster of conditions including increased blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol or triglyceride levels — who were treated with metformin showed a decrease in total cholesterol and LDL cholesterol.

- **Obesity** — Metformin is often recommended for people with diabetes who are overweight because metformin doesn’t promote weight gain — as can some other diabetes medications — and may even promote weight loss. People with obesity often develop insulin resistance. It may be that metformin lessens hunger by increasing insulin sensitivity and helps normalize blood sugar levels. In addition, metformin may enhance energy metabolism through AMPK activation, reduce the amount of fat deposited in the liver and muscles, and make you more sensitive to hunger and fullness. Studies of metformin in people who were obese but not diabetic have shown that the drug can lead to modest weight loss comparable to weight-loss drugs.

- **Cancer** — A number of observational studies support the use of metformin as a potential anti-cancer drug. One theory is that by reducing blood insulin levels, metformin may have a protective effect against certain cancers, especially those associated with high insulin levels, such as colon and breast cancers. The drug also appears to reduce tumor growth directly in various other ways.

However, it’s unclear how and when metformin may be most useful against cancer. A recent review of studies assessing metformin use in people with type 2 diabetes showed a slight reduction — about 10 percent — in the risk of colorectal cancer in those taking the drug. On the other hand, a large study involving people who had been treated for colorectal cancer didn’t find any effect for metformin on survival or recurrence of cancer.

Additional studies are investigating the use of metformin as therapy for cancers of the breast, prostate, endometrium, pancreas and other types.

- **Aging** — Animal studies have shown a number of ways — including decreased insulin levels, AMPK activation, anti-inflammatory action, reduced DNA damage and various other mechanisms — that metformin might extend the length of time that an organism remains healthy.

Scientists hope that metformin may do the same for humans. If the drug can help delay the amount of time spent coping with an illness or disease, it can extend healthy, active aging. Observational studies of people with diabetes have shown that those who take metformin often have a longer life than those who don’t. They also tend to have a reduced risk of various diseases and conditions. Such results have encouraged the pursuit of further human trials, several of which are underway, to test metformin’s anti-aging possibilities.

Looking ahead

Much of the research that’s been done on metformin is preliminary. It’s still too early to recommend metformin as a preventive treatment for cancer or as a supplement to healthy aging. But for those already taking metformin for type 2 diabetes, the potential benefits may provide an additional reason to adhere to their medication.
Second opinion

Q Based on his snoring, I think my husband may have sleep apnea. However, he doesn’t want to get tested because he doesn’t want to spend a night hooked up to a bunch of equipment. Is there an easier way to know?

A There are simpler ways to initially rule out sleep apnea. However, this may not negate the need for eventually having a sleep study to make a definitive diagnosis.

Obstructive sleep apnea is a potentially serious condition in which tissues in your throat temporarily block your airway while you sleep. You may unknowingly stop breathing for several brief periods throughout the night, causing disruption in your sleep cycle. Not surprisingly, this can lead to daytime sleepiness and fatigue that can be severe enough to cause embarrassment — or even car accidents. Obstructive sleep apnea can also lead to other problems such as heart disease or reflux.

An evaluation by your doctor is a fairly quick and easy way to assess for obstructive sleep apnea. Your doctor may simply ask a few questions, such as if you’re tired during the day or if you have morning headaches. You may be asked if you or a partner has noticed loud snoring with intermittent pauses of breathing during sleep and gasping or choking noises.

Obesity and a large neck circumference — greater than 17 inches in men or 16 inches in women — also are hallmark risks of obstructive sleep apnea. Your doctor can take a quick look at your airway to see if throat tissues are crowding the area. If you have three or more of the factors mentioned above — or other telltale signs — you’re at high probability of having obstructive sleep apnea. A sleep study is the next step for a definitive diagnosis.

If you have only a couple of the factors mentioned, your doctor may order an overnight oximetry test. This simple, at-home test involves wearing a plastic clip device on a finger while you sleep. The device detects and records the amount of oxygen in your blood over time. Obstructive sleep apnea can be ruled out if oxygen levels remain normal throughout the night on the overnight oximetry test.

Q What’s involved in genome testing, and are there any risks?

A Genomic testing is done to identify patterns of inheritance and genetic disorders for which you might be at risk. Whole genome screening analyzes all of your DNA to identify such genetic variants. Another type of DNA sequencing — whole-exome sequencing — examines only the exome. This is only about 1 percent of the human genome, but it contains the majority of disease-causing mutations and makes proteins in the body.

Anyone can have genome testing. Institutions such as Mayo Clinic offer a variety of genomic tests to determine your health risks, ranging from looking for a specific genetic condition to screening your whole genome. Costs can range from a couple hundred to several thousand dollars.

Genome analysis can be particularly useful for people who have unexplained diseases or conditions that are suspected to be genetic, those with a family history of a known genetic mutation, those who are adopted and unaware of family histories, or for couples who are planning a family.

Test results can increase awareness of risks and lead to early diagnoses and preventive strategies. Some medical treatments may be personalized based on your results. You may also learn information that could be helpful to other family members.

But knowing potential risks can also lead to more tests and increased anxiety about a disease that may never develop. Some experts argue that the results are still too vague and complex to be of practical use. Generally, the help of a genetic counselor or a physician-geneticist who’s trained in interpreting DNA sequencing is essential to guiding you through testing and results.

Have a question or comment? We appreciate every letter sent to Second Opinion but cannot publish an answer to each question or respond to requests for consultation on individual medical conditions. Editorial comments can be directed to:

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