AMERICAN COLLEGE OF RHEUMATOLOGY
EDUCATION • TREATMENT • RESEARCH

Specialists in Arthritis Care & Research

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Gout

Gout is sometimes referred to as the “disease of kings.” This is because people long have incorrectly linked it to the kind of overindulgence in food and wine only the rich and powerful could afford. In fact, gout can affect anyone, and its risk factors vary.

Fortunately, it is possible to treat gout and reduce its very painful attacks by avoiding food and medication triggers and by taking medicines that can help.

Fast facts

- Intensely painful joint swelling, most often in the big toe or other part of the foot, may indicate gout.
- Treatments exist, but therapy should be tailored for each person.
- By avoiding alcohol and certain fish and meats, you may help prevent further gout attacks.
- Patients may need medications to lower their elevated blood uric acid levels that predispose to gout. The goal is a uric acid level less than 6 milligrams per deciliter (mg/dL).

The base of the big toe and ankle are red, swollen, and extremely painful due to an acute attack of gout. As the attack subsides, the superficial skin may peel.

What is gout?

Gout is a painful and potentially disabling form of arthritis that has been around since ancient times. The first symptoms usually are intense episodes of painful swelling in single joints, most often in the feet, especially the big toe. The swollen site may be red and warm.

Treatments are available to control most cases of gout. However, diagnosing gout can be hard, and treatment plans often must be tailored for each person.

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What causes gout?

Gout occurs when excess uric acid (a normal waste product) collects in the body, and needle-like urate crystals deposit in the joints. This may happen because either uric acid production increases or, more often, the kidneys cannot remove uric acid from the body well enough. Certain foods and drugs may raise uric acid levels and lead to gout attacks. These include the following:

- Foods such as shellfish and red meats
- Alcohol in excess
- Sugary drinks and foods that are high in fructose
- Some medications
    - low-dose aspirin (but because it can help protect against heart attacks and strokes, we do not recommend that people with gout stop taking low-dose aspirin)
    - certain diuretics ("water pills") such as hydrochlorothiazide (Esidrix, Hydro-D)
    - immunosuppressants used in organ transplants such as cyclosporine (Neoral, Sandimmune) and tacrolimus (Prograf)

Over time, increased uric acid levels in the blood may lead to deposits of urate crystals in and around the joints. These crystals can attract white blood cells, leading to severe, painful gout attacks and chronic arthritis. Uric acid also can deposit in the urinary tract, causing kidney stones.

Who gets gout?

Gout affects more than 3 million Americans. This condition and its complications occur more often in men, women after menopause, and people with kidney disease. Gout is strongly linked to obesity, hypertension (high blood pressure), hyperlipidemia (high cholesterol and triglycerides) and diabetes. Because of genetic factors, gout tends to run in some families. Gout rarely affects children.

In patients with chronic undertreated gout crystals can be found in deposits (called tophi) that can damage joints & can appear under the skin.

How is gout diagnosed?

Some other kinds of arthritis can mimic gout, so proper diagnosis (detection) is key. Health care providers suspect gout when a patient has joint swelling and intense pain in one or two joints at first, followed by pain-free times between attacks. Early gout attacks often start at night.

Diagnosis depends on finding the distinguishing crystals. The physician may use a needle to extract fluid from an affected joint and will study that fluid under a microscope to find whether urate crystals are present. Crystals also can be found in deposits (called tophi) that can appear under the skin. These tophi occur in advanced gout.
Uric acid levels in the blood are important to measure but can sometimes be misleading, especially if measured at the time of an acute attack. Levels may be normal for a short time or even low during attacks. Even people who do not have gout can have increased uric acid levels.

X-rays may show joint damage in gout of long duration. Ultrasound and dual energy computed tomography (commonly called dual energy CT) can show early features of gouty joint involvement. These imaging techniques also can help suggest the diagnosis.

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How is gout treated?

Treatment of acute attacks. One treatment for active flares of gout is colchicine. This medicine can be effective if given early in the attack. However, colchicine can cause nausea, vomiting, diarrhea and other side effects. Side effects may be less frequent with low doses. Patients with kidney or liver disease, or who take drugs that interact (interfere) with colchicine, must take lower doses or use other medicines. Colchicine also has an important role in preventing gout attacks (see below).

Nonsteroidal anti-inflammatory drugs—commonly called NSAIDs—are aspirin-like medications that can decrease inflammation and pain in joints and other tissues. NSAIDs, such as indomethacin (Indocin) and naproxen (Naprosyn), have become the treatment choice for most acute attacks of gout. (The fact sheet on NSAIDs lists the types of patients who cannot take NSAIDs.) There is no proof that any one NSAID is better than others. High doses of short-acting NSAIDs give the fastest relief of symptoms. These medicines may cause stomach upset, ulcers or diarrhea but, if used for the short term, are well tolerated by most people.

Some people cannot take NSAIDs because of health conditions such as ulcer disease or impaired kidney function or the use of blood thinners. Corticosteroids such as prednisone and triamcinolone are useful options for patients who cannot take NSAIDs. Given orally (by mouth) or by injection (shot) into the muscle, these medicines can be very effective in treating gout attacks. If only one or two joints are involved, your doctor can inject a corticosteroid directly into your joint.

Health care providers may prescribe anakinra (Kineret), an "interleukin 1 beta antagonist," for very severe attacks of gout. Though this rheumatoid arthritis drug is not approved by the Food and Drug Administration (commonly referred to as the FDA), for gout treatment, it can quickly relieve gout symptoms for some patients.

Some home remedies may help ease gout pain. Rest the affected joint and apply ice packs or cold compresses (cloths soaked in ice water and wrung out) to that spot.

Treatment to remove excess uric acid. Patients who have repeated gout attacks, abnormally high levels of blood uric acid, or tophi or kidney stones should strongly consider medicines to lower blood uric acid levels. These medications do not help the painful flares of acute gout, so most patients should start taking them after acute attacks subside. The drug most often used to return blood levels of uric acid to normal is allopurinol (Lopurin, Zyloprim). It blocks production of uric acid. A recent option, febuxostat (Uloric), also acts by blocking uric acid production.

Probenecid (Benemid) helps the kidneys remove uric acid. Only patients with good kidney function who do not overproduce uric acid should take probenecid.

Pegloticase (Krystexxa) is given by injection and breaks down uric acid. This drug is for patients who do not respond to other treatments or cannot tolerate them. New drugs to lower uric acid levels and to treat gouty inflammation are under development.

Flares of gout often can occur when you first start to use medications that lower blood uric acid levels. Patients can help prevent flares when starting these medications by also using low-dose colchicine or NSAIDs. Often, doctors advise patients to keep taking colchicine in a low, preventive dose together with the uric acid-lowering medicine for at least six months.

If you are taking a uric acid-lowering drug, your doctor should slowly raise the dose and keep checking your blood uric acid levels. Once your uric acid levels drop below 6 mg/dL (normal), crystals tend to dissolve and new deposits of crystals can be prevented. You probably will have to stay on this medicine long term to prevent gout attacks.

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What works well for one person may not work as well for another. Therefore, decisions about when to start treatment and what drugs to use should be tailored for each patient. Treatment choices depend on kidney function, other health problems, personal preferences and other factors.

What you eat can increase uric acid levels. Limit the amount of high-fructose drinks, such as nondiet soda. Also, do not drink alcohol, especially beer. Restrict eating foods that are rich in purines, compounds that break down into uric acid. These compounds are high in meat and certain types of seafood. Purines in vegetables appear to be safe, new research has found. Low-fat dairy products may help lower uric acid levels.

In almost all cases, it is possible to successfully treat gout and bring a gradual end to attacks. Treatment also can decrease the number and size of tophi.

Lifestyle changes can help control gout. Limit consumption of alcohol, meats and fish rich in purines, and fructose-containing drinks.

Broader health impacts of gout

Gout often is associated with high blood pressure, heart and kidney disease, or the use of medications that increase uric acid levels. Therefore, health care providers should test for these related health problems. Researchers are studying whether lowering blood uric acid levels can help heart disease and kidney disease.

Living with gout

Gout affects quality of life by both the intermittent attacks and the potential for chronic (lasting) arthritis. Compliance with your treatment plan is critical.

Lifestyle changes may make it easier to manage this lifelong disease. Suggestions include gradual weight loss, avoidance of alcohol and reduced consumption of fructose-containing drinks and foods high in purines.

The rheumatologist's role in the treatment of gout

Treatment of gout can be difficult because of coexisting illnesses and other medications. As experts in the treatment of arthritis, rheumatologists examine patients to learn whether gout is the cause of their arthritis and to educate them about the role and proper use of medications and other treatments for gout. They also act as a resource to primary care doctors.

Points to remember

- Bouts of arthritis that come and go are a sign of gout.
- Finding the characteristic crystals in the fluid of joints allows health care providers to correctly diagnose gout.
- There are two types of medicine for gout. First, for control of acute attacks of joint pain, there are NSAIDs, colchicine and corticosteroids. Second, after attacks have resolved, there are medications that can lower the level of uric acid over time, to prevent or cause the attacks to occur less often.
- People with chronic gout usually require lifetime treatment with drugs to lower uric acid levels.
- Lifestyle changes such as controlling weight, limiting alcohol intake and limiting meals with meats and fish rich in purines also can help control gout.

To find a rheumatologist

For a list of rheumatologists in your area, click here.

Learn more about rheumatologists and rheumatology health professionals.

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For more information

The American College of Rheumatology has compiled this list to give you a starting point for your own additional research. The ACR does not endorse or maintain these Web sites, and is not responsible for any information or claims provided on them. It is always best to talk with your rheumatologist for more information and before making any decisions about your care.

The Arthritis Foundation
www.arthritis.org

National Institute of Arthritis and Musculoskeletal and Skin Diseases Information Clearinghouse
www.niams.nih.gov/Health_Info/Gout/default.asp

MayoClinic.com Gout Information
www.mayoclinic.com/health/gout-diet/MY01137/rss=1

UpToDate Patient Information: Gout
www.uptodate.com/contents/gout-beyond-the-basics?source=search_result&search=gout&selectedTitle=1%7E10

American College of Rheumatology Research and Education Foundation
Learn how the ACR Research and Education Foundation advances research and training to improve the health of people with rheumatic diseases.
www.rheumatology.org/REF

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