Gout

Causes, diagnosis and treatments
About Gout

What is Gout?
Gout is a type of inflammatory arthritis that may sometimes be called gouty arthritis. Gout develops in some people who have high levels of uric acid in their body and bloodstream (a condition called hyperuricemia). When uric acid builds up in the joints, it can form needle-like crystals. This can cause inflammation and sudden and severe pain, as well as stiffness, tenderness, redness, warmth and swelling. The pain may last hours or weeks and make it difficult to perform daily activities. The build-up of uric acid can look like lumps under the skin, called tophi. It can also collect in the kidneys and cause kidney stones (small, hard deposits).

The first gout attack usually occurs in the large joint of the big toe. But other joints and areas around the joints can be affected, such as insteps (arches of the foot), ankles, heels and knees. The wrists, fingers and elbows are less commonly affected.

Gout attacks usually occur at night and may last three to 10 days. Sometimes the next attack may not happen for months or even years. If untreated, gout may damage joints, limit mobility and cause chronic (long-lasting) pain.

What Causes Gout?
Uric acid is a substance that normally forms when the body breaks down purines, which are found in human cells and many foods. It is moved by the blood to the kidneys and removed from the body in the urine. Some people’s bodies make too much uric acid while others may have a diet that causes acid levels to build up. Some people produce a normal amount of this acid, but their kidneys can’t remove it properly and it builds up. Many, but not all, of these people develop gout over time.

About two-thirds of uric acid is produced naturally by the body, while the other one-third comes from some foods and drinks. Therefore, genes play a bigger role than diet in the level of uric acid, based on how much the body is prone to produce. But a diet that includes a lot of high-purines foods (see page 11) can contribute to the development of gout and worsen gout symptoms.

Who Gets Gout?
Gout affects about 8.3 million individuals age 20 or older, three-fourths of whom are men. This makes gout the most common type of inflammatory arthritis, and the number of people affected by it is growing. Men, especially those between the ages of 40 and 50, are more likely to develop gout than women. It tends to occur in women after menopause. People who have kidney disease or an organ transplant are more prone to
work properly, conditions that cause cells to turn over too fast, such as psoriasis or some cancers, are associated with an increased risk.

**Medications:** Water pills (diuretics), taken for high blood pressure and heart failure, can raise uric acid levels; so can some drugs that suppress the immune system taken by transplant recipients. Taking a vitamin that includes niacin and medicines with salicylates, such as aspirin, can also increase the risk.

**Gender and age:** Gout is more common in men than women until around age 60. Experts believe natural estrogen protects women up to that point.

**Diet:** Eating large amounts of organ meats and certain seafood increases your risk of developing gout.

**Alcohol:** For most people, more than two liquor drinks – especially two or more beers a day can increase the risk of gout. Alcohol hinders the removal of uric acid from the body.

**Sodas, energy drinks, fruit juices:** The fructose in sweetened sodas and energy drinks, and in fruit juices, increases the risk of developing gout.

**Obesity:** Obese people are at a higher risk for gout, and they tend to develop it at a younger age than people of normal weight.

**Lead exposure:** In some cases, exposure to lead can make you more likely to develop gout.

To learn more about gout symptoms, causes and treatments, visit arthritis.org/gout.
Diagnosing Gout
Gout has some of the same symptoms as other forms of arthritis, and signs of a gout attack may mimic a joint infection. Your doctor will use your medical history and family health history, a physical exam, and blood and other diagnostic tests to make an accurate gout diagnosis. Having high uric acid levels alone does not mean that someone will get gout.

Your doctor will measure the level of uric acid in your blood using a blood test. He may also remove fluid from your affected joint and examine it under a microscope for uric acid crystals. Finding uric acid crystals in the joint is the surest way to make a gout diagnosis. Diagnostic ultrasound and dual-energy CT scans are very useful to find uric acid crystals in joints, especially in the timeframe between flares.

When It’s Not Gout
Gout has symptoms similar to other forms of arthritis, so it can be confused with other conditions. One example is a condition called pseudogout, or calcium pyrophosphate deposition (CPPD). Symptoms such as pain, redness and swelling may come on suddenly and be severe. But with CPPD, the crystals that irritate the joint are calcium phosphate crystals, not uric acid. Therefore, pseudogout is treated differently.

Treating Gout
The main goal of gout treatment is lowering the amount of uric acid in the blood. This is done in two ways – by increasing the amount removed from the body and reducing how much the body produces. You will partner with your doctor to manage an acute gout attack and develop an ongoing plan to keep your uric acid levels at 6 mg/dL or lower.

Managing an Acute Gout Attack
Gout attacks usually come on suddenly. The first gout attack often strikes at night. You may go to bed feeling fine but wake up a few hours later with extreme joint pain.

Use the following steps to get the pain and swelling of a gout attack under control:

• Take an over-the-counter anti-inflammatory medication as soon as possible.
• Ice and elevate the joint.
• Drink plenty of fluids (no alcohol or sweet sodas).
• Call your health care provider and make an appointment.
• Ask friends and family to help you with daily tasks.

Despite the sudden onset and intense pain, gout attacks usually get better within a week to 10 days and then disappear completely. The first 36 hours are typically the worst. However, it’s important that once you have an attack, you begin working with your doctor to control uric acid levels and prevent future gout attacks.

Reducing Uric Acid Levels
Medications that lower uric acid help to prevent gout attacks and keep the condition from becoming chronic. Your doctor will wait until your most recent gout attack ends before starting these medications, because taking them during an attack can worsen or prolong it. When taking these medications, crystals in your joints may shift as uric acid levels drop, triggering another attack. However, sticking with your treatment plan is the best way to prevent future attacks. Your doctor may prescribe an anti-inflammatory medication such as a low, regular dose of colchicine or an NSAID, along with one of the medications below, for the first six weeks to 12 months to prevent attacks.

Allopurinol (Zyloprim) reduces the production of uric acid. Side effects may include skin rash and stomach upset. Stomach problems usually go away as your body adjusts to the drug. In rare cases, allopurinol can cause a severe allergic reaction in some populations. For example, Southeast Asians (Han Chinese, Thai and Korean) and African Americans are at higher risk of a reaction. This drug comes in pill form.

Febuxostat (Uloric) may be an option if you develop side effects from allopurinol or have kidney disease. Like allopurinol, febuxostat decreases the amount of uric acid made in the body. Side effects may include nausea and dizziness. This drug comes in pill form.

Here are the medications used to treat an acute gout attack.

**Nonsteroidal anti-inflammatory drugs (NSAIDs)** are frequently used to quickly relieve the pain and swelling and can shorten the attack, especially if taken in the first 24 hours.

**Corticosteroids** (such as prednisone) can be taken by mouth or injected into an inflamed joint to relieve the pain and swelling. Corticosteroids usually start working within 24 hours after you ingest them or they are injected.

**Colchicine** (Colcyris, Mitigare) helps to relieve the pain and swelling. Side effects may include diarrhea, nausea and stomach cramps, especially at high doses. Like all gout medications, colchicine is most effective if taken at the first signs of a gout attack. This oral medication has a generic version.

All medications may cause side effects, so talk to your doctor about taking these drugs safely.

Get detailed information about the medications used to treat gout at arthritis.org/drugguide.
Probenecid – and probenecid with colchicine – acts on the kidneys to help the body remove uric acid. The medication may be combined with febuxostat to boost effectiveness. Side effects may include kidney stones, nausea, skin rash, stomach upset and headaches. This drug comes in pill form.

Lesinurad (Zurampic) is taken in combination with allopurinol or febuxostat to help the kidneys remove uric acid. Side effects may include decreased kidney function, as well as stomach problems and headaches. This drug comes in pill form.

Pegloticase (Krystexxa) is used when other medications can’t lower the uric acid level, a condition known as refractory chronic gout. Side effects may include infusion reactions, gout flares, nausea, bruising, sore throat, constipation, chest pain and vomiting. The drug is administered every two weeks by intravenous (IV) infusion.

Making Lifestyle Changes
Adopting healthy lifestyle habits is a key part of an effective gout treatment plan. Eating a healthy diet, engaging in regular physical activity and losing weight if needed can lower your risk of repeated gout attacks, as well as the chances of developing heart disease, which is common in people with gout.

Diet
Developing a lifelong eating strategy that focuses on following a heart-healthy diet should be the goal for people with gout. This diet includes all the food groups, especially vegetables, whole grains, plant proteins such as nuts and legumes, lean protein and low-fat dairy. Refined carbohydrates and processed foods should be kept to a minimum. Drinking plenty of nonalcoholic drinks, especially water, helps to remove uric acid from the body and limit acute gout flares.

Foods to Avoid or Limit if You Have Gout
The following foods are high in purines or are known to trigger gout attacks:
- liver, kidney, sweetbreads and other organ meats
- red meats (beef, lamb, pork)
- select seafood (anchovies, sardines, mackerel, herring, mussels, scallops, trout, haddock and tuna)
- broths, consommés, gravies
- sugary beverages
- dried peas and beans
- heavy alcohol consumption, especially beer
Physical Activity and Weight Management
Reaching and maintaining a proper weight is an important part of managing gout. Not only does losing weight help reduce the uric acid in the blood, it can reduce the risk of heart disease or stroke, both common in people who have gout. But be careful about using a low-carbohydrate diet to lose weight. When you don’t eat enough healthy carbohydrates, your body can’t burn fat efficiently. So it releases substances called ketones into your bloodstream, causing a condition called ketosis. After a while, ketosis can increase the level of uric acid in your blood.

Being physically active is an important part of managing weight. But getting started on losing weight or being active isn’t always easy. A doctor can help patients set realistic goals and choose appropriate exercise.

Arthritis Foundation Resources Can Help
The Arthritis Foundation offers several tools to help you live better with arthritis. These resources include:

- **Your Exercise Solution (YES) Online Tool** – a unique online tool that helps you create a personalized activity plan to ease your pain based on your specific joint requirements. Check it out at YourExerciseSolution.org.

- **Arthritis Resource Finder** – a specialized online search tool that can help you find local health care providers, medical equipment suppliers and fitness programs, plus much more. Learn more at ArthritisResourceFinder.org.

- **The Better Living Toolkit** – a comprehensive kit that includes a health tracker and Arthritis Foundation publications to help you get a better understanding of your disease. Get yours at BetterLivingToolkit.org.

Learn how physical activity can improve your gout symptoms and how you can get started with an exercise program today at arthritis.org/exercise.
The Arthritis Foundation is the Champion of Yes.

We lead the fight for the arthritis community and help you conquer your everyday battles through life-changing information and resources, access to optimal care, advancements in science and community connections.

Go to www.arthritis.org or call 800-283-7800.

Our goal is to help you:

Learn, be inspired and connect. Subscribe to Arthritis Today magazine to get information on everyday life with arthritis, the latest health news, tools to help you chart a winning course and much more. Go to arthritistoday.org/subscribe.

Contact your local office about resources and events going on where you live. Go to arthritis.org, click the Local Offices tab at the top and enter your ZIP code.

Raise funds to conquer arthritis in our annual events, Walk to Cure Arthritis and Jingle Bell Run. Visit arthritis.org/events.

Talk about your condition. You’re not alone when you connect with our community. Visit arthritis.org/community.

Make your voice be heard. Go to arthritis.org/advocate and become an Arthritis Foundation Advocate for better access to health care.

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Personalized, One-On-One Support to Get the Help You Need

Call the toll-free Arthritis Foundation Helpline to speak with an arthritis information specialist. Arthritis information specialists can help you navigate your routine and complex situations with one-on-one guidance and counseling.

Get answers about:
- Access to care
- Medication and co-pay assistance
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Engage with the Arthritis Foundation community on Twitter, Facebook, Pinterest and YouTube.