



Understanding **GOUT**

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experience. Gout is often called a man's disease, because the vast majority of sufferers are men in the prime of life. It affects up to one to two percent of men in Western countries and approximately 3.4 million American men. Postmenopausal women can also be affected, but to a lesser degree, and they make up only about five percent of the total cases in the United States. Although the prevalence is greater in men, the rate of incidence in women comes close to reaching that of men by the time they reach age seventy-five to eighty.

It appears that people can have a genetic predisposition to developing gout. As John Hardin, chairman of the Department of Medicine at Albert Einstein College of Medicine describes it, "gout is 90 percent a disease of genetics and 10 percent a disease of lifestyle, and until we can target the genes responsible, gout will remain an incurable disease."

Gout is characterized by spontaneous episodes of inflammation and intense pain to one or more joints. It's also a crystal arthritis disease (joint inflammation caused by crystal deposits) and considered a rheumatic disease. (In the medical literature, the terms arthritis and rheumatism are used interchangeably.) Additionally, it's a metabolic disorder because it disrupts chemical processes that occur within the body.

Gout is associated with a metabolic condition called hyperuricemia, in which there is a supersaturation of uric acid (a natural by-product of metabolism) in a person's blood plasma. In some people, hyperuricemia can lead to the deposit of monosodium urate crystals in joints and soft tissue. When crystal buildup reaches a critical point, the crystals can shed or be released into the synovial fluid in the joint. This causes a sudden gout flare with inflammation, swelling, and intense pain. In a large majority of cases, the initial location is the first joint of the big toe, and the flare-up usually occurs in the middle of the night or early morning.

You normally generate between 250 and 750 milligrams of uric acid a day from body cell turnover and the foods you eat. Normally uric acid is dissolved in the blood and most is passed through the kidneys into the urine and eliminated. A small percentage is processed through the digestive tract.

However, if there's an increase in the production of uric acid or the kidneys don't eliminate enough uric acid (or both), urate builds up in the blood, joint fluids, and tissue, causing hyperuricemia. In 10 to 15 percent of gout sufferers, hyperuricemia is the result of overproduction of uric acid; in 85 to 90 percent, it's the result of renal impairment or underexcretion by the kidneys (or a combination of the two). The normal blood level of urate is from 4 to 6.8 mg/dL. A level greater than 7 mg/dL is considered hyperuricemia.

In people with a predisposition for gout, persistent hyperuricemia leads to the depositing of monosodium urate (MSU) crystals in joints and surrounding tissue. MSU crystals can also form in the kidneys (as kidney stones) and other organs. If gout is left untreated, this crystal deposition will cause chronic, acute inflammation, leading over time to joint destruction, deformity, and other complications.

Stages of Gout

The progression of gout follows four stages:

1. Asymptomatic hyperuricemia
2. Acute gout (acute gouty arthritis)
3. Interval or intercritical gout
4. Chronic tophaceous gout

Asymptomatic Hyperuricemia

Currently there's no reliable way to predict that a particular person with asymptomatic hyperuricemia (without symptoms) will develop gout. In fact, less than 20 percent of people who are asymptomatic end up with gout. As a result, asymptomatic hyperuricemia is currently not considered a disease. Treatment at this stage is generally not recommended unless a person has a strong family history of gout, is about to receive chemotherapy, has a history of kidney stones, has moderate renal impairment, is a binge alcohol drinker, or has a uric level of at least 12 or 13 mg/dL in men and 10 mg/dL in women.

Advanced Imaging Technology

Dopple ultrasonography and magnetic resonance imaging (MRI) can detect inflammation (synovitis) and bone erosions. Dual energy–computed tomography (DECT) can show early signs of the effects of gout on joints, identify tophi, and actually measure the amount of crystal deposits in the affected joint or joints.

Complications from Gout

Untreated gout attacks can become more frequent and last longer, and can cause these serious complications or conditions.

Joint Damage

Hyperuricemia can lead to persistent low-level inflammation between gout attacks, resulting in synovitis, cartilage loss, and bone erosion.

Kidney Stones

Uric acid crystals can develop in the urinary tract and lead to kidney stones (renal calculi) and kidney damage. Kidney stones can cause an infection in the urinary system. People with gout die of kidney disease at four times the rate of people without gout.

Tophi

The formation of tophi is the result of persistent, long-term hyperuricemia in people with gout. See “Chronic Tophaceous Gout,” page 14, for more on chronic tophaceous gout.

Other Risks

Because people with gout are at increased risk for metabolic syndrome, they’re liable to suffer from the contributing factors of coronary artery disease, hypertension, insulin resistance, and stroke. A study in 2001

showed an association between gout and unhealthy cholesterol and lipid levels. Another study published in the journal *Arthritis & Rheumatism* found that men with gout had an increased risk of heart attacks, even if they had no previous history of heart disease. Other rare complications can occur if gout is left untreated, such as cataracts, dry eye syndrome, and problems with crystal deposits in the lungs.

Treating Your Gout

If you've been diagnosed with gout, your doctor will focus on:

- treating any acute attacks,
- reducing the level of uric acid concentration in your blood to stop the formation of MSU crystals in the joints,
- eliminating already deposited crystals in joints and tophi,
- and treating the disease to prevent future gout flares.

Managing an Acute Attack

The most common procedure used to alleviate the pain of a gout flare-up is a combination of medications and lifestyle recommendations. Anti-inflammatories are used to reduce pain, and a variety of medicines are employed to remove urates or to lower urate levels. Be sure to tell your doctor about all the medicines and vitamins you take, as some of them may elevate your urate levels.

Other things you can do to get relief is elevate the affected joint, avoid bumping or touching it, and apply an ice pack to it for about twenty minutes (but no longer). Be sure to get plenty of bed rest. Your doctor may also decide to remove some fluid from the gouty joint to relieve pain and pressure.

Look over the list of foods that should be avoided, as well as those that are either protective or acceptable (see "A Recommended Diet for Chronic Gout," page 30). Get regular exercise and lose weight if you're overweight.

Alcohol

Beer and spirits should be avoided. Wine in moderation is permissible. (See page 18). Drink plenty of water to help flush uric acid from the body.

Foods That Reduce Gout Flares

In a study published in the *New England Journal of Medicine* in 2004, scientists found that consumption of low-fat dairy products reduces the risk of gout in men by half. The reason for this protective effect is not yet known. The consumption of dairy products, even low-fat dairy products, has also been associated with adverse health risks, such as prostate cancer and breast cancer, so their benefits need to be weighed against these risks.

Vegetable protein too seems to have a protective effect, but to a lesser degree. A study cited by the National Institute of Health examining the effects of vitamin C on uric acid suggests that it may be beneficial in the prevention and management of gout. Both regular and decaf coffee also have been reported to have a protective effect in preventing gout flares.

By following the diet and lifestyle guidelines presented here and by your rheumatologist, you'll be able to control how much uric acid your body produces, as well as your ability to eliminate it. These guidelines will also help decrease the number and severity of gout attacks you suffer. But diet alone will not completely control gout. Long-term therapy with urate-lowering medication will be necessary.

Foods to avoid:

- beer
- white bread
- fruit juice and foods containing fructose/sugar
- organ meats
- red meat
- seafood
- yeast-containing foods (breads, yeast spreads)

Foods to eat:

- beans and lentils
- cherries and cherry juice
- coffee
- complex carbohydrates (whole grains, vegetables)
- foods high in vitamin C
- nuts and peanuts
- plant-based omega-3 fatty acids (walnuts, flax seed, hemp seed)
- vegetables, all kinds

Foods that can be consumed in moderation:

- low-fat dairy products
- fruits
- wine

Research for the Future

We're fortunate to live in an age where so much is known about what causes gout and which medications can reduce gout attacks. Out of all the forms of arthritis, gout is perhaps the easiest to control.

The goals now are to make treatments even more effective and possibly preventative. The National Institute of Health has outlined what researchers are focusing on:

1. Doctors are trying to determine which of the current treatments are most effective and at which dosages.
2. A number of new therapies have shown promise in recent studies, including biologic agents that block a chemical called tumor necrosis factor. This chemical is believed to play a role in the inflammation of gout.

Effective Gout Management is Attainable!

Gout—a chronic, painful, degenerative disease of the joints—is one of the most common inflammatory arthritic conditions. But relief is at hand!

Understanding Gout examines the causes, symptoms, and treatments of this debilitating disease and identifies who might be at risk. Here is the essential information about testing, diagnosis, and complications that can arise from untreated attacks.

Along with a review of the medications used for managing gout and treating acute flare-ups, you'll find the latest recommendations for diet, lifestyle, and other beneficial measures you can use to effectively control this condition. Reclaim your health and enjoy a productive life free of gout's crippling effects!

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