



## Gout

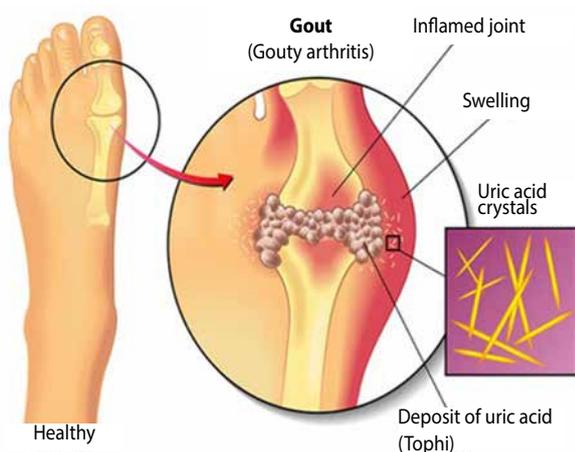
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### Introduction

When we consume food and drinks, the body must extract what it needs and send the rest away as waste. When the body breaks down purines, which are found in some foods, it forms uric acid. Most of the uric acid dissolves in the blood, passes through the kidneys and leaves the body in urine. When there is too much uric acid in the blood, a condition called hyperuricaemia occurs.

This can happen when the body either makes too much uric acid or is unable to excrete enough of it. It usually happens because the kidneys are not eliminating it quickly enough. The excess uric acid can then lead to the formation of crystals anywhere in the body, but they tend to mostly form in and around joints and in the kidneys.

Hyperuricaemia does not always cause gout, and hyperuricaemia without gout symptoms does not need to be treated. Although hyperuricaemia is not a disease, over time, if uric acid levels remain high, it can lead to several diseases such as gout, tophaceous gout and kidney stones.



### Signs and symptoms of gout

Symptoms of gout include severe pain, redness and swelling in joints, often the big toe, but can occur in any joint. Other commonly affected joints include the fingers, wrists, elbows, ankles, and knees. Pain and inflammation occur when uric acid crystallises, forming sharp, needle-like urate crystals and deposits in the joints and surrounding tissues. Attacks of gout present as severe pain, redness and swelling in the affected joints. Attacks can come on suddenly, often at night and the pain is likely to be the most severe within the first 4 to 12 hours. Thereafter, some joint discomfort may last from a few days to a few weeks. Red, shiny skin and limited range of motion in the affected joint is also usual.

### What causes these symptoms?

When the kidneys do not eliminate uric acid efficiently, the uric acid levels rise.

Factors that may cause high uric acid levels include:

- Being male
- Obesity
- Having certain health conditions, including
  - Diabetes
  - High blood pressure
  - Poor kidney function
  - High cholesterol
  - Congestive heart failure
  - Hypothyroidism (underactive thyroid)
  - Psoriasis
- Using diuretics
- Genetics – gout often runs in families
- Drinking alcohol – risk of gout increases as alcohol intake increases
- Having a diet high in purines

### Foods with high purine content

- All organ meats such as liver, kidneys, sweetbreads, and brain
- Game meats such as pheasant and venison

- Fish such as herring, trout, mackerel, tuna, sardines, anchovies, and haddock
- Other seafood such as scallops, crab, and shrimp
- Sugary beverages, especially fruit juices and sugary sodas
- Yeast supplements like brewer's yeast
- High-fat foods such as bacon and dairy products

## How alcohol affects gout

Drinking any alcohol affects the risk of gout in two ways.

1. Some alcohol, particularly beer, is high in purines, which are then broken down into uric acid and, in that way, increase uric acid levels.
2. Alcohol decreases the excretion of uric acid by the kidneys, which increases the uric acid levels in the blood.

## How often do gout attacks happen?

Some people have gout attacks frequently, while others go years between episodes. If gout is not treated, attacks may become more frequent and last longer. Gout attacks can happen repeatedly in the same joint or affect different joints each time.

## How to treat gout

### Non-pharmaceutical treatments

- Drink plenty of water – increasing fluid consumption, with mainly, water but also other clear fluids, such as herbal teas, will get the kidneys to release excess fluid. It is best to avoid alcohol and sugary sodas as they can increase the uric acid levels.
- Apply ice to and elevate the affected joints – this can help reduce inflammation and swelling.
- Limit purine-rich foods – eat more fruits, vegetables, whole grains, lean protein, and low-fat dairy products.
- Drink coffee – some research suggests that drinking coffee in moderation, especially regular caffeinated coffee, may be associated with a reduced risk of gout. Studies suggest that uric acid levels may decrease with increasing coffee intake.
- Maintain a healthy body weight – losing weight lowers the risk of gout and lessens the overall stress on joints.
- Vitamin C supplements – moderate amounts of vitamin C have been linked to lower uric acid levels. Large doses, however, can raise uric acid levels.
- Eat cherries – studies have shown that cherries may have the ability to reduce both acute and chronic inflammation that plays a role in recurrent gout attacks.

### Over-the-counter treatments

- Nonsteroidal anti-inflammatory drugs (NSAIDs) – There are several NSAIDs that are effective in relieving pain and inflammation and are available OTC (Table I). Care should be taken to make sure the patient knows how to take the NSAID in relation to food intake.
- Colchicine – An anti-inflammatory drug that effectively reduces the inflammation and pain associated with gout. It does not affect the elimination of uric acid by the kidneys but can lessen

the build-up of uric acid crystals in the affected joints. It may be used in combination with NSAIDs. Taking more than the recommended dose may not increase the effectiveness but may increase the risk for side effects.

**Table I:** Nonsteroidal anti-inflammatory drugs

Active ingredient	Adult dosage for gout
<b>Diclofenac</b> e.g. Diclo-Flam, Panamor Voltaren, Cataflam, K-Fenak	50 mg 3 times daily for a max of 5 days Max total dose 150 mg per day
<b>Indometacin</b> e.g. Arthrexin	Initially 50–100 mg, then 50 mg 3 or 4 times daily
<b>Ibuprofen</b> e.g. Nurofen, Lenafen, Brufen	600–1 200 mg/day in divided doses for a max of 5 days Max total dose 2 400 mg per day
<b>Naproxen</b> e.g. Aleve, Adco-Naproxen, Napflam	Initially 750 mg, then 250 mg every 8 hours
<b>Colchicine</b>	<ul style="list-style-type: none"> <li>• <b>For acute gout:</b> 0.5–1 mg followed by 0.5 mg 6 hourly until the pain is relieved or GI distress develops</li> <li>• Max 2.5 mg in the first 24 hours</li> <li>• Max total dose 6 mg over 4 days</li> <li>• <b>For the elderly:</b> lower doses to be used with max 3 mg over 4 days</li> <li>• <b>For prophylaxis:</b> 0.5 mg once daily</li> </ul>

## In summary

Gout is a painful medical condition that often occurs alongside other serious conditions. While a healthy lifestyle may lower the risk of subsequent attacks, it may not be enough to prevent symptoms or manage the disease.

Medication can help reduce pain and may prevent the risk of future gout attacks. For those with frequent gout attacks, it is advised to talk to a doctor about starting prescription medication to lower uric acid levels and prevent future attacks.

## Bibliography

- Gaffo MD, MsPH A. UpToDate [Internet]. Uptodate.com; c2021. Available from: [https://www.uptodate.com/contents/treatment-of-gout-flares?search=gout%20treatment&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/treatment-of-gout-flares?search=gout%20treatment&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1). Accessed 16 Jul 2021.
- Gout - Symptoms and causes [Internet]. Mayo Clinic; c2021. Available from: <https://www.mayoclinic.org/diseases-conditions/gout/symptoms-causes/syc-20372897>. Accessed 16 Jul 2021.
- Iftikhar N. Natural ways to reduce uric acid in the body [Internet]. Healthline; c2019. Available from: <https://healthline.com/health/how-to-reduce-uric-acid>. Accessed 16 Jul 2021.
- Rhodes MDL. Gout in foot: how it happens & how to treat it. University Health News [Internet]. University Health News; c2020. Available from: <https://universityhealthnews.com/daily/bones-joints/gout-in-foot/>. Accessed 16 Jul 2021.
- Roubenoff R. [Internet]. Arthritis.org; c2021. Available from: <https://www.arthritis.org/health-wellness/healthy-living/nutrition/healthy-eating/which-foods-are-safe-for-gout>. Accessed 16 Jul 2021.
- South African Medicines Formulary. 13th ed. Cape Town: South African Medical Association; 2020.
- Villines Z. 8 natural ways to lower uric acid [Internet]. Medicalnewstoday.com; c2019. Available from: <https://www.medicalnewstoday.com/articles/325317#limit-purine-rich-foods>.
- White A. Gout remedies: natural treatments you can try at home [Internet]. Healthline; c2019. Available from: <https://www.healthline.com/health/gout/home-remedies#home-treatments>. Accessed 16 Jul 2021.