

**Arthritis Ireland**

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**Gout**

# Introduction

Gout has been known for more than 2000 years. It can affect men of any age. It is less common in women and then only occurs after the menopause. Luckily, gout is probably the rheumatic disease for which there is the most satisfactory treatment.

## What is gout and what causes it?

The old adage that simply eating and drinking too much causes gout has now been proved wrong, although it is true that if you over-indulge in alcohol – especially beer and wine – or food, attacks of gout are more likely.

People get gout because there is something wrong with the chemical processes of their body. Urate (which we all have in our blood) can build up and form crystals in the joints and cause them to feel intensely painful. This defect is usually inherited from a parent or grandparent. Gout runs in families.

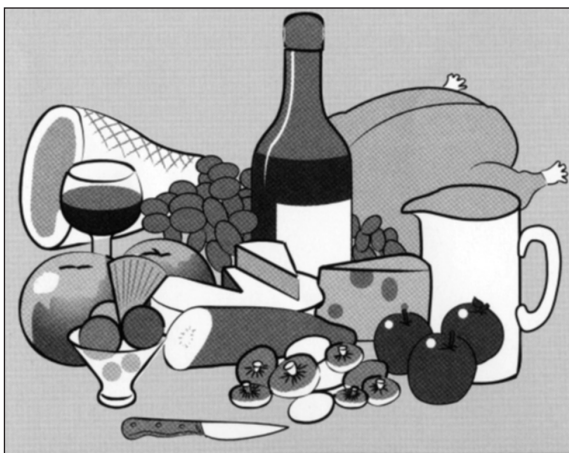


Figure 1. Too much eating and drinking can bring on attacks of gout.

The joints are not the only part of the body to be affected. Crystals may appear under the skin, including sometimes on the ear. They look like little white pimples and are called ‘tophi’.

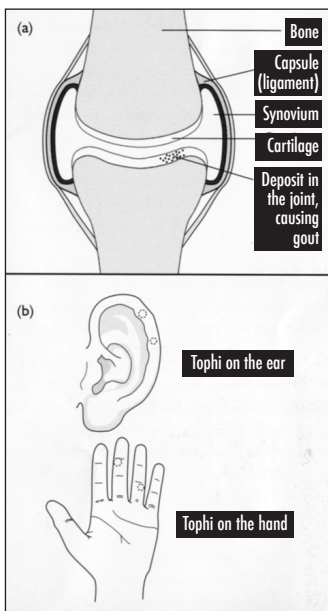


Figure 2. Urate is produced in the body. If there is too much circulating in the blood it may be deposited (a) in joints (particularly the cartilage), causing gout, or (b) under the skin, as tophi.

## What is the role of urate?

Urate forms in the blood of healthy people as a breakdown product of various chemical processes. Normally the body rids itself of any excess urate through the kidneys into the urine. However, in people who are prone to gout this does not happen fast enough, so the level of urate builds up. An inherited tendency to gout is the most common cause of the condition. Other causes include kidney disease, in which there tends to be a higher level of urate in the blood because the

kidneys do not get rid of it (excrete it) properly. Or, certain other diseases produce too many cells (for example, white blood cells in some blood disorders). These cells release urate when they are broken down after the body has finished with them and this causes an increase in the urate level.

Urate in the bloodstream travels in the clear part of the blood (the plasma) in the form of a salt. The plasma urate level normally tends to be higher in men than women.

However, even if the level is high, it will not necessarily lead to gout. Close relatives of people who have gout may have too much urate in their bodies yet never have a single attack of gout in their lives. Certain tablets – such as diuretics, which drain water from the body, and are used to treat heart disease or high blood pressure – increase urate levels and may cause gout.

## Remember

- Gout is inherited (though by no means every member of a family gets attacks), but environmental factors can play a part (see below).
- It is due to too much urate in the body.

## What is an acute attack like?

This is the most painful of all forms of arthritis or rheumatism. Attacks usually start during the night, often with pain in the big toe. The toe becomes very red, swollen and extremely tender. Even someone bumping into the bed can cause pain. It sometimes resembles a boil near the joint and it can be difficult even for a doctor to tell whether the trouble is gout or inflammation in a bunion. The inflammation is caused by urate crystals being shed into the joints. Other joints – the knee, the elbow or the wrist, for example – may be attacked.

If you are a person who has had gout before and you injure or bruise a joint which then becomes more painful, or takes longer than expected to get better, always see your doctor. You may have triggered an attack of gout.

Apart from injury, other things such as fatigue, worry or illness can start an attack. Sometimes an operation (even a minor one like having a tooth out) can bring on an attack a few days later. Excessive eating and drinking can be another cause of attacks.

## Remember

- Always suspect an acute attack of gout if a joint is unusually painful after a minor injury.
- Anything which upsets your system may bring on an attack.
- Always be on the look-out for the early signs of an acute attack, because the earlier you start the treatment the better.

## What are the long-term risks?

The first few attacks of gout do no permanent damage to the joints and you can expect a complete recovery, leaving you with a normal joint. It is only when a joint is repeatedly attacked by gout – a rare thing nowadays – that

the urate crystals damage the joint and so start off long-term (chronic) arthritis. In mild cases the attacks are often so infrequent – with intervals of many years between them – that permanent damage is unlikely ever to occur.

Gout is occasionally associated with high blood pressure and too much fat in the blood (hyperlipidaemia). Also, stones may form in the kidney if gout is untreated.

## How is gout diagnosed?

Your doctor may suggest the following investigations:

**A blood test** This measures the amount of urate in the blood (as plasma urate). A raised level strongly supports the diagnosis of gout; but unfortunately the level may also be high in the other conditions already mentioned, and

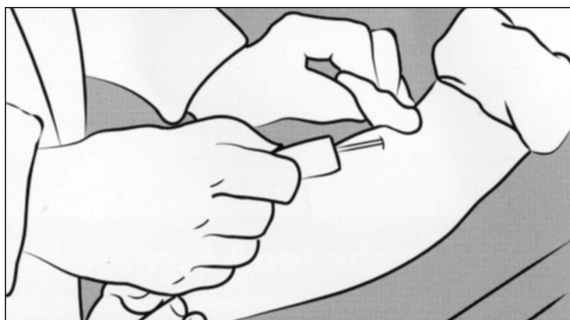


Figure 3. A blood test will usually be needed.

also in healthy people who do not have gout – especially if they are overweight. Alternatively, sometimes the level of urate can be normal even during an acute attack of gout.

**Examination of joint fluid** Synovial fluid can be taken from a joint through a needle. It is then examined under a microscope, where any crystals of urate will be quickly spotted. If crystals are present, the diagnosis of gout is proved. This test, which usually causes no more discomfort than a blood test, is particularly useful when gout starts in an unusual way. For example, gout can occasionally mimic another type of rheumatic disease such as rheumatoid arthritis.

**X-rays of joints** X-rays might be taken but, as they often appear normal, they may not help in the diagnosis.

## Remember

- Repeated attacks of gout may damage a joint and cause arthritis.
- Modern treatment can prevent arthritis developing.

## What treatments are there for an acute attack?

### NSAIDs

Acute attacks of gout are usually treated by non-steroidal anti-inflammatory drugs (NSAIDs). These are tablets that relieve pain and help inflammation to go down. They are so called because they do not contain steroids.

Indomethacin was often the first drug doctors would choose, but there are now many other NSAIDs which can be used. Drugs containing the NSAID aspirin, however, should be avoided unless prescribed by your doctor.

Used for the short periods needed to treat an acute attack, NSAIDs are unlikely to cause side-effects. But occasionally you may notice indigestion, a rash, headache, dizziness, or even asthma. Anything more serious – such as damage to the blood cells – is very rare. Unfortunately, there is always a risk of indigestion in some people; anyone who has had a peptic ulcer should be especially careful and should make sure that their tablets are taken either with a meal or straight after eating.

### Steroids

If an acute attack of gout does not respond to treatment, your doctor may have to prescribe a cortisone-type drug (a steroid).

### Colchicine

Colchicine is another medicine that has long been used to treat acute attacks. This is an old-fashioned remedy obtained from the meadow saffron – the autumn crocus – and it is safe and works well. A doctor usually prescribes colchicine tablets to be taken every 2 hours until the pain is relieved or until diarrhoea occurs.

If possible, colchicine tablets should be taken at the very beginning of an attack, and sometimes – if attacks are repeated – the doctor may give you tablets to keep by you

so you do not have to wait until s/he arrives, or the chemist opens. By following your doctor's instructions carefully and promptly, you can usually control an attack of gout quickly and satisfactorily.

## Protecting the joint

A painful joint such as the big toe may have to be protected. For example, a 'cage' over it taking the weight of your bedclothes can help offer relief.

## What preventive treatment is there?

The drugs given to relieve an acute attack have little effect on urate levels in the blood. They can do little to prevent further attacks, or stop urate being laid down in the joints. Should your attacks become more frequent, or if blood tests show you are accumulating too much urate, your doctor may decide to prescribe one of the drugs that reduce the quantity of urate in the blood. **These have to be taken every day, whether you have an attack or not, as a preventive measure.**

The aim of preventive treatment is to keep urate levels controlled. Reducing urate levels means that attacks of gout are avoided because urate crystals are no longer deposited in the joints and other parts of the body, where they may do damage.

There are now several drugs which will do this satisfactorily, but it must be appreciated that you may have to persist with the daily treatment for the rest of your life. Should you stop, urate will begin to accumulate again. The tablets are therefore prescribed to be taken regularly. Taken consistently over a period, the treatment ensures that the level of urate in your blood stays normal. However, don't expect to notice anything happen immediately.

The most common of these tablets is allopurinol. This reduces the amount of urate made by the body. It is remarkably safe even when taken for years – the only side-effect that occurs at all frequently is a rash, which disappears when the tablets are stopped.

There are other types of drug used to control urate levels. These flush out urate through the kidneys.

Sometimes acute attacks of gout may actually become more common when these drugs are started, so it may be necessary to take colchicine or an NSAID as well. Whichever drug proves right for you, drinking plenty of water will help to get rid of urate through the kidneys. Depending on the amount of urate you have it can take a long time (perhaps 2 years) to fully clear your body of urate crystals.

## Remember

- Preventive treatment is a life-long treatment.
- Drink plenty of fluids.
- Treat any acute attacks in the usual way.

## What about diet?

### Weight

The most effective dietary treatment for gout is losing weight if you are overweight. This can significantly reduce urate levels in your body, but it must be done gradually because extreme weight loss or starvation diets (fasting) can actually raise urate levels (because they increase cell breakdown in the body).

### Alcohol

The second most useful dietary change if you have gout is to cut down on alcohol. Excessive alcohol consumption has been associated with gout for centuries. If you have gout it is advisable to keep your alcohol intake below the safe maximum levels recommended by the government. Currently this is 3–4 units a day for men and 2–3 units a day for women. A unit is 1/2 pint (0.3 litre) of ordinary strength beer, lager or cider (3.5% abv), a single pub measure of 25 ml of spirits (40% abv), or a very small glass of wine (12% abv) – no more than 85 ml, which is much smaller than the standard wine glass used!

### Fluids

To reduce the risk of urate crystallising in the joints (the cause of the severe pain in attacks of gout) it is important to drink plenty of water – if possible as much as 3.5 litres (6 pints) a day. You can include some other fluids in this

total (but not beer or other alcoholic drinks), but if you are trying to lose weight bear in mind that many soft drinks contain large amounts of sugar and should be avoided.

## Food

Urate is produced from purines, which are chemicals which result from the breakdown of cells. Cutting down on foods which are high in purines can be helpful if you have gout. These foods are shown in Table 1. Note that urate levels are not affected by so-called 'acidic foods' like oranges or grapefruit, so you can eat these safely.

Please note: the fact that oily fish such as herring, mackerel and sardines are high in purines means that they are not recommended if you have gout. However they are rich in special oils which may be beneficial if you have other types of arthritis. (See booklet 'Diet and Arthritis'.)

Table 1. Foods which are high in purines

| <b>Meat</b> | <b>Fish</b> | <b>Other</b>   |
|-------------|-------------|----------------|
| Liver       | Anchovies   | Beer           |
| Offal       | Fish roes   | Yeast extracts |
|             | Herring     | (e.g. Marmite) |
|             | Mackerel    |                |
|             | Sardines    |                |

## Some more questions answered

### Do women get gout?

Rarely. The disease is very occasionally found in older women, particularly if they are taking diuretics (water tablets which are used in the treatment of high blood pressure or heart disease). This is because these drugs can cause the body to retain urate. Gout in young women is extremely rare and needs special investigation.

### Can gout cause serious joint disease?

Occasionally. This can happen if the condition is left untreated. At first the attacks are acute, and the joint returns to its normal state afterwards, but eventually the deposits of urate can cause severe deformity and disability. Fortunately this is preventable with proper treatment, as described earlier.

## Is urate deposited at places other than in joints?

Yes. As mentioned, it can be deposited under the skin – for example, on the ears, fingers and toes. It can also be deposited in internal organs, particularly the kidneys. For this reason it is usual for doctors investigating someone with gout to do a test to check how well the kidneys are working. A specimen of urine may be needed for this.

## Can it be harmful to take the drugs that lower urate over a long period?

The drugs in question are remarkably safe. They sometimes have to be discontinued because of an adverse effect such as a rash or dyspepsia (indigestion), but otherwise they can be taken indefinitely without side-effects.

## What is ‘secondary’ gout?

This is gout that is predominantly due to a well-defined underlying cause. Diuretics (water tablets) have already been mentioned; other causes include certain rare blood diseases that raise the level of urate. Low-grade lead poisoning – seen in plumbers and painters during the nineteenth century – was once a cause of secondary gout. Usually, however, it is impossible to identify such causes, and the condition is then referred to as ‘primary’ gout.

## Are there any other types of crystal – apart from urate – that can cause joint disease?

The only other common kind of ‘crystal arthritis’ is caused by a certain type of calcium crystal, which is deposited in the joints in a similar way to urate. It may cause acute attacks rather like gout, but the knee is more often involved than the big toe.

The information in this leaflet has been kindly supplied by



## Research

Arthritis Ireland is continuing to fund research into arthritis in Ireland. The long term aim is to find a cure for the disease, but along the way research projects funded increase our understanding of the disease and so improve treatment given. Arthritis Ireland has invested over €850,000 in arthritis research projects and has plans to increase this as funding allows.

Research progress may appear to be slow to arthritis patients waiting for a cure, but because of well-designed scientific research remarkable advances have been made in our understanding of the basic disease mechanisms and of potential therapeutic approaches.

Research benefits people with arthritis in a number of different ways. By improving our understanding of the causes of arthritis, the diagnosis may be more clearly established and newer and more specific treatment programmes can be developed. Research may also improve the quality of life for people with arthritis by helping to develop better physical aids and improved surgical treatments.

An active research agenda fosters interest in arthritis among health care workers and so helps to keep the brightest and the best of our medical and science graduates in Ireland.

