Gout

Gout causes attacks of pain and swelling in one or more joints. An anti-inflammatory painkiller usually eases an attack quickly. Lifestyle factors may reduce the risk of having gout attacks. These include losing weight (if overweight), eating a healthy diet, and not drinking much alcohol or sugar-sweetened soft drinks. If gout attacks recur, then taking vitamin C supplements and/or allopurinol each day can prevent them.

What is gout and what causes it?

Gout causes attacks of painful inflammation in one or more joints. It is a type of arthritis (although it is very different to the more common rheumatoid arthritis and osteoarthritis). The pain of a gout attack can be severe.

Gout is caused by a chemical in the blood called uric acid (urate). Uric acid is usually harmless and is made in the body. Most is passed out with the urine and some from the gut with the stools (faeces). In people with gout the amount of uric acid in the blood builds up. From time to time the level may become too high and tiny grit-like crystals of uric acid may form. The crystals typically collect in a joint. The crystals irritate the tissues in the joint to cause inflammation, swelling and pain - a gout attack.

Note: some people have a high level of uric acid but do not form crystals or have gout. Also, rarely, some people with a normal level of uric acid have gout attacks. However, as a rule, the higher the level of uric acid, the greater the chance of developing gout.

Why does uric acid build up?

Normally, there is a fine balance between the amount of uric acid (urate) that you make and the amount that you pass out in the urine and faeces. This keeps the level of uric acid in the blood in check. However, in most people with gout, their kidneys do not pass out enough uric acid and the blood level may rise. They are said to be under-excreters of uric acid. Their kidneys usually work otherwise normally.

In some people, the build-up of uric acid may due to other factors. For example:

- Drinking too much alcohol can cause uric acid to build up.
- If you do not have enough vitamin C in your diet.
- If you drink sugar-sweetened soft drinks high in fructose it can cause uric acid to build up. A recent research study found that having two drinks a day of a sugar-sweetened soft drink increased the risk of developing gout by 85%. (Drinks labelled as 'diet' or drinks containing artificial sweeteners were not found to increase the risk.) Fructose-rich fruits and fruit juices may also increase the risk.
- Certain foods may 'tip the balance' to raise your uric acid higher than normal. In particular, eating a lot of heart, herring, sardines, yeast extracts, or mussels may increase the level of uric acid. However, eating a normal balanced diet should not have much effect on the uric acid level.
- Some medicines may raise the level of uric acid. For example, 'water' tablets (diuretics) such as bendroflumethiazide, aspirin (at full painkiller dose - not low-dose aspirin used to prevent blood clots), and some chemotherapy medicines.
- More uric acid is made than usual in illnesses where the cells of the body have a rapid turnover. For example, severe psoriasis and some blood disorders.
- People with certain other conditions have an increased risk of developing gout. These include:
  - Obesity.
  - High blood pressure.
  - Kidney damage.
  - Diabetes mellitus.
  - Bone marrow disorders.
  - Lipid disorders (especially hypertriglyceridaemia).
  - Vascular disease.

- Enzyme defects such as hypoxanthine guanine phosphoribosyltransferase (HGPRT) deficiency and glucose-6-phosphate dehydrogenase (G6PD) deficiency.

How common is gout and who gets it?

Gout affects about 1 in 200 adults. Men are more commonly affected than women. A first attack of gout typically develops in middle age but it sometimes occurs in younger people. It tends to run in some families, as there is a family history of gout in about 1 in 5 cases. It may be that the genetic make-up that you inherit from your family may be a factor in becoming an under-excreter of uric acid (urate).

What are the symptoms of gout?

Gout usually occurs in attacks. An attack typically develops quickly over a few hours. It usually causes severe pain in one joint. The base of the big toe is the most commonly affected joint. Walking can be very painful and even the weight of bedclothes can hurt.

However, any joint can be affected. Sometimes two or more joints are affected. Affected joints usually swell and the nearby skin may look red and inflamed. If left untreated, a gout attack may last several days but usually goes completely within 7-10 days. Less severe attacks can occur which may be mistaken at first for other forms of arthritis. Weeks, months or even years may go by between attacks. Some people only ever have one attack.

Is gout serious?

A gout attack can be very painful. However, other effects from gout are uncommon. Joint damage may occur if you have recurring attacks. In a few people, uric acid crystals form kidney stones or may cause some kidney damage. Sometimes the crystals form bumps (tophi) under the skin. These are usually harmless and painless but sometimes form in awkward places such as at the end of fingers. Tophi occasionally become infected.

How is gout diagnosed?

Gout is usually diagnosed if you have the typical gout symptoms and a raised blood level of uric acid. If there is doubt as to the cause of the pain and swelling, your doctor may take some fluid out of a swollen joint. This is done with a needle and syringe. The fluid is looked at under the microscope. Crystals of uric acid (urate) can be seen in the fluid to confirm the diagnosis of gout.

What is the treatment for a gout attack?

General measures

If you are able to, raise the affected limb (usually a leg) to help reduce the swelling. The easiest way to raise your leg is to recline on a sofa with your leg up on a cushion. An ice pack (or pack of frozen peas) held against the inflamed joint may ease the pain until the gout treatment medicines (below) start to work:

- Wrap the ice pack (or peas) in a towel to avoid direct skin contact and ice burn.
- Apply for about 20 minutes, and then stop. (It should not be applied for long periods.)
- Repeat as often as required BUT make sure the temperature of the affected part has returned to normal before applying again.

Anti-inflammatory painkillers

A short course of an anti-inflammatory painkiller will quickly ease most gout attacks (within 12-24 hours). There are several types and brands, such as diclofenac, indometacin and naproxen. Your doctor will prescribe one. Many people with gout like to have a supply of tablets on standby in the home just in case an attack occurs. They are usually needed only for a few days until the inflammation and pain go.

Most people can take short courses of anti-inflammatory painkillers without any problem, although side-effects occur in some people:

- Bleeding from the stomach is the most serious possible side-effect. This is more of a risk if you are aged over 65, or have had a duodenal or stomach ulcer. Stop the tablets and see a doctor if you develop indigestion, have upper tummy (abdominal) pain, pass black stools (black faeces), or if you are sick (vomit) or pass blood. Read the leaflet that comes with the tablets for a list of other possible side-effects.
- Some people with asthma, high blood pressure, certain kidney problems and heart failure may not be able to take anti-inflammatory painkillers.
- Some people taking certain other medicines should not take anti-inflammatory painkillers. This is because of a possible risk of the two medicines interacting. Therefore, check with your doctor or pharmacist if you are taking other medication, before taking anti-inflammatory painkillers.

Also, don't take more than one anti-inflammatory painkiller at a time unless specified by a doctor. For example, some people take low-dose aspirin every day (which is classed as an anti-inflammatory medicine) to prevent blood clots. Aspirin plus another anti-inflammatory medicine increases the risk of bleeding from the stomach.

Therefore, if you are already taking aspirin and develop gout, you need to discuss the options with your doctor. For example, your doctor may advise that you take another medicine to 'protect the stomach' if you need to take aspirin and another anti-inflammatory medicine. Remember - some painkillers that you can buy from pharmacies contain aspirin.

Other treatments

Colchicine is an alternative medicine that eases gout attacks. It is usually only used if you have problems or side-effects with anti-inflammatory painkillers. Steroid tablets or injections can also reduce the pain and inflammation. They are another alternative if there are problems or side-effects with anti-inflammatory painkillers and colchicine.

Canakinumab is another option that has recently been introduced.

Can further gout attacks be prevented?

Lifestyle measures and medicines can help to prevent gout attacks.

Lifestyle suggestions

- If you are overweight, try to lose some weight. This can help to lower the uric acid (urate) level. However, do not use diets that increase uric acid levels, such as high-protein diets or starvation diets.
- Eat sensibly. A high uric acid level may be lowered a bit by avoiding a high protein intake and foods rich in purines, such as liver, kidneys and seafood. Also avoid eating foods high in yeast extracts, such as Marmite®. See separate Gout Diet Sheet for more details.
- If you drink a lot of alcohol then it may help if you reduced the amount that you drink. You do not need to stop drinking alcohol altogether but cutting down may help if you drink a lot. In particular, avoid binge drinking. Keep to within the recommended levels of alcohol - these are 21 units per week for men and 14 units per week for women.
- If you drink a lot of sugar-sweetened soft drinks, especially those containing fructose, it may help to reduce the number or cut them out all together.
- If you are taking any medicines, check whether they are a cause of gout (see above). An alternative medicine may be available. Your doctor will advise.
- Avoid lack of fluid in the body (dehydration) by drinking plenty of water (up to two litres per day unless there is a medical reason why not to).
- Have your blood pressure checked at least once a year. High blood pressure is more common in people with gout.

With the help of lifestyle changes, many people only have an attack of gout every now and then. All you may need is to have some anti-inflammatory painkillers on standby to treat each attack.

For some people, attacks occur more often. In this situation, you can take a medicine to prevent attacks.

Allopurinol is used to prevent gout attacks

Allopurinol is a commonly used medicine to prevent gout attacks. Allopurinol does not have any effect during a gout attack and it is not a painkiller. It works by lowering the level of uric acid in the blood. It takes 2-3 months to become fully effective. You need to take it every day to keep the uric acid level normal to prevent gout attacks.

As a general rule, regular allopurinol may be advised by your doctor if you:

- Have had two or more attacks of gout within a year.
- Have one or more tophi (described above).
- Have any joint or kidney damage due to gout.
- Have one or more kidney stones made from uric acid.
- Have had a gout attack and are taking long-term medication that can cause gout.

When you first take allopurinol, it can sometimes cause a gout attack. This is because it may cause the level of uric acid to rise slightly before it falls. For this reason it is not normally started during a gout attack. It is best to start it about 3-4 weeks after an attack has settled. Also, an anti-inflammatory painkiller is often prescribed for the first 2-3 months after you start allopurinol, just in case the allopurinol causes a gout attack. Once the level of uric acid has been brought down, taking allopurinol each day usually works well to prevent gout attacks.

The dose of allopurinol needed varies from person to person. Treatment is usually started with a low dose. A blood test is often done after a month or so to check that the level of uric acid has come down. If not, the dose may need to be increased. Most people end up taking about 100-300 mg each day to stop gout attacks.

If a gout attack occurs while you are taking allopurinol, you can still take an anti-inflammatory painkiller to relieve the pain. However, this may indicate that you need an increased dose of allopurinol. Side-effects are uncommon with allopurinol. Read the information that comes with the packet of tablets for details about possible side-effects. If side-effects do occur, other medicines with a similar action are sometimes prescribed. For example, a medicine called febuxostat may be an option if you cannot take allopurinol for medical reasons or due to side-effects.

Other medicines used to prevent gout attacks

Febuxostat is effective in preventing gout attacks by keeping uric acid levels low but it has side-effects and is reserved for people who have problems with allopurinol. Other options include probenecid, sulfinpyrazone, benzbromarone, low-dose steroids, colchicine and anti-inflammatory medicines.

Vitamin C supplements

A study published in 2009 showed that vitamin C can reduce the risk of developing gout. In the study, 46,994 men were followed up over several years. Compared with men with a vitamin C intake of less than 250 mg a day:

- Those whose intake was 1,000-1,499 mg per day had a 34% lower risk of gout.
- Those whose intake was 1,500 mg per day had a 45% lower risk of gout.

This study concluded that supplemental vitamin C intake may help to prevent gout. However, recent studies have not supported these findings and vitamin C is not routinely used in gout prevention.

Further help & information

Arthritis Research UK

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Further reading & references

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Last Checked: 18/10/2013	Document ID: 4258 Version: 44	© EMIS
