NUHS
National University Health System

# Patient and Family Information Leaflet

# Gout

## What is Gout?

Gout is a chronic disease with intermittent painful arthritis affecting the toes, feet, ankles or knees. Gout attacks are episodes of sudden pain in the joint, which rapidly becomes red, hot, swollen and painful, with severe limitation in joint function (e.g. walking).

Initially gout attacks may affect one joint (usually in the feet) with complete resolution of symptoms in between attacks. At later stages, gout attacks can involve multiple joints, including those in the upper limbs. Over time, this can lead to severe joint deformities and disability.

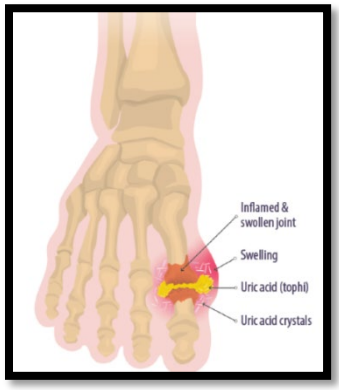
## Why does Gout happen?

Uric acid is produced in the body during the breakdown of purines (a component of DNA).

Gout is caused by an excess of uric acid in the blood (hyperuricemia). Uric acid may form crystals that build up in joints and tissues, resulting in inflammation and intense pain during gout attacks. Chronic deposition of uric acid crystals leads to visible lumps called tophi.

## Who does Gout affect?

Gout affects mostly men, starting in their 30s and increases with age. It is less common in women until they reach menopause. Gout is often associated with various other medical conditions such as chronic kidney disease, high blood pressure, obesity and heart disease. Often, patients have family members affected by gout.





Other risk factors for gout include:

- Consuming alcohol and fizzy drinks (containing high amounts of fructose)
- High purine diet – red meat, offal, seafood (including shellfish and certain fish e.g. sardine, anchovies and mackerel)
- Dehydration
- Acute illness such as infection
- Other medical conditions with increased cell breakdown (e.g. psoriasis, a scaly skin condition and certain blood disorders)
- Certain medications increase risks of gout
  -Diuretics used to treat patients with excessive fluid in the body (e.g. furosemide)
  -Medications used to treat tuberculosis, a chronic infection (such as ethambutol and pyrazinamide)
  -Certain immune suppression medications which may be used in patients with other autoimmune conditions are after a transplant (calcineurin inhibitors such as cyclosporin and tacrolimus)

## How is Gout diagnosed?

Gout can be diagnosed based on clinical history of recurrent episodic acute joint inflammation. The joints in the feet are commonly affected, especially the big toe (also known as podagra). There may be associated triggers preceding the attack or other risk factors for gout. Blood test showing raised uric acid levels is supportive of the diagnosis when combined with clinical history and examination.

**However, a high serum uric acid in the absence of any joint inflammation does not mean you have gout.**

X-rays may be performed to look for joint destruction. Other imaging tests such as CT scans (dual energy CT) or ultrasound scans may be performed for select patients.

The confirmatory test for gout involves joint aspiration where a needle is inserted into a swollen joint to remove joint fluid, and visualising gout crystals under the microscope.

## Why should we treat Gout?

Gout is a chronic disease that can be easily managed with medications and lifestyle modifications. From the patient's perspective, gout attacks cause excruciating pain, limit daily activities such as walking, and tremendously affect people's work and social life as well as their mood. Recurrent attacks of gout may cause permanent damage to the joints and tendons leading to deformity and disability. In addition, high uric acid levels can lead to urinary stones and kidney problems, increase the risk of heart disease, and increased cardiovascular mortality.

## How do we treat Gout?

1) Management of acute gout attacks

   Acute gout attacks can be treated by applying ice packs to the affected joint(s) and taking medications, such as:

   - Colchicine
   - Nonsteroidal anti-inflammatory drugs (NSAIDs) – E.g. naproxen, diclofenac, indomethacin, etoricoxib, celecoxib
   - Corticosteroids – Oral prednisolone, intramuscular steroid injection or steroid injection into affected joints (intra-articular steroids)

It is important to note that the medications above are not suitable for every patient. Factors such as drug allergies and kidney disease may mean that certain medications need to be avoided.

2) Prevention of gout flares

Reduction of uric acid is the mainstay of treatment of gout and will prevent attacks. Urate lowering therapy (ULT) is recommended for patients who have recurrent gout attacks (≥2 in a year) or complications from gout such as joint destruction, tophi, urinary stones due to uric acid, and chronic kidney disease. ULT is given long-term to prevent gout flares and maintain uric acid at target. A good target uric acid level is less than 360µmol/L – or 300µmol/L in patients who have tophi.

ULT include medications such as allopurinol, febuxostat or probenecid. Allopurinol is the most commonly used medication as it is effective, economical and safely used for many years. There is a small risk of allergic reaction with allopurinol use. Hence it is often started at a low dose and increased gradually to ensure any side effects are picked up early. If there are new rashes or oral ulcers that develop while on allopurinol, the medication should be stopped, and a doctor should be consulted. There is a common

misconception that medications like allopurinol damage kidney function, when in fact they do not.

A low dose of colchicine is often started together with ULT to prevent gout flares when ULT is initiated. It is important to continue ULT during acute gout attacks.

3) Management of associated conditions

Gout is closely associated with high blood pressure, diabetes, high cholesterol, fatty liver, obesity and chronic kidney disease. These conditions should be treated as well to reduce risks of cardiovascular disease.

There are drugs used to treat gout flares and prevent future attacks. Gout medications are available in two types that focuses on two different problems. The first—helps reduce the inflammation and pain associated with gout attacks. The second—works to prevent gout complications by lowering the amount of urine acid in your blood.

## What should I do if I have been diagnosed with Gout?

Lifestyle changes are an important aspect of managing gout and its associated conditions.

Some recommended lifestyle changes include:

• Quit smoking
• Reducing alcohol consumption, sugary foods, and carbonated drinks
• Maintaining a balanced diet, limiting high-purine foods, especially those high in animal protein such as meats (pork, beef, lamb, chicken, duck, etc.) and organ meats; seafood such as shellfish and fish (anchovies, sardines, herring, mackerel, scallops, mussels, tuna, cod, trout, etc.)
• Avoiding gout triggers
• Staying active and engaging in moderate exercise
• Staying hydrated by drinking plenty of water, at least 2 liters a day.
• If you are overweight, please lose weight.

## Will surgery help to cure Gout?

Patients with gout may develop lumps (tophi) of uric acid deposits. Surgery may be required in patients with complications from tophi such as infection or functional limitation. Surgery alone does not treat underlying gout as tophi may recur without ULT.

Image source: National Arthritis Foundation

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