CONDITION

Gout

Gout is a form of inflammatory arthritis caused by urate crystals collecting in and around joints.

WHAT IT IS
Inflammatory arthritis caused by urate crystals

BODY SYSTEM
Joints and urinary system

MAIN SYMPTOMS
Sudden joint pain, swelling, redness, warmth

WHAT CAUSES IT
Urate crystal buildup from high blood urate

HOW IT IS DIAGNOSED
Joint fluid crystal analysis; imaging when needed

MAIN TREATMENT
Anti-inflammatory medicines and long-term urate-lowering treatment

CAN IT BE CURED?
No - crystal buildup can be controlled

IS IT AN EMERGENCY?
Sometimes - fever with a hot, swollen joint

LONG-TERM OUTLOOK
Usually manageable with sustained urate control

Overview

Gout is a type of inflammatory arthritis caused by needle-shaped monosodium urate crystals collecting in a joint or nearby tissue. These crystals can trigger sudden episodes of pain and swelling called gout flares.

Urate forms when the body breaks down purines, which occur naturally in cells and in some foods and drinks. Urate normally dissolves in blood and leaves the body mainly through the kidneys. If blood urate stays high, crystals may gradually form, although many people with high urate never develop gout.

Gout commonly affects the joint at the base of the big toe, but it can also affect the ankles, knees, feet, wrists, fingers or elbows. A flare may settle completely while crystals remain between attacks. Without effective control, gout can cause frequent flares, firm deposits

called tophi and lasting joint damage.

Short-term treatment reduces inflammation during a flare. Long-term urate-lowering treatment can prevent attacks and gradually dissolve crystals.

Symptoms

A gout flare often begins suddenly, sometimes overnight, and may become severe within hours.

Typical symptoms include:

The skin may look shiny and may itch or peel as swelling settles. Early gout usually affects one joint, while later attacks may involve several. Symptoms often improve over days, although an untreated flare can last longer.

Symptom-free periods are called intercritical gout. Urate crystals may remain during these periods.

Long-standing gout can cause tophi: firm crystal deposits around the fingers, toes, elbows, ears or Achilles tendon. They are often painless but may restrict movement, irritate the skin or release chalk-like material.

A hot, swollen joint is not always gout. Joint infection can cause similar symptoms and requires urgent treatment.

- Intense pain in one joint
- Swelling, warmth and red or darker skin
- Extreme tenderness, including pain from light pressure
- Stiffness and difficulty moving the joint

Causes and risk factors

Gout develops when blood urate stays high enough for crystals to form. Usually, the kidneys do not remove enough urate. Less often, the body produces unusually large amounts.

Factors that increase the likelihood of gout include:

High blood pressure, type 2 diabetes, high cholesterol and cardiovascular conditions commonly occur alongside gout and should be assessed as part of general health care.

Flares may be triggered by illness, dehydration, surgery, injury, heavy alcohol intake or a sudden change in urate. Gout is not simply caused by eating the "wrong" foods; genetics,

kidney function, medicines and other conditions often have a larger role.

- Inherited differences in urate handling
- Reduced kidney function
- Older age and being male, although risk rises after menopause
- Higher body weight or metabolic conditions
- Medicines that raise urate, including some diuretics like furosemide or hydrochlorothiazide
- Organ transplantation and certain transplant medicines
- Regular alcohol intake, particularly beer or spirits
- Frequent sugary drinks or foods high in fructose
- Large amounts of red meat, organ meat or some seafood

Diagnosis

A clinician will ask how quickly the pain began, which joints are affected and whether you have had similar attacks. They will examine the joint and review your medicines, kidney health and other conditions.

The most reliable test is joint aspiration. A needle removes fluid from the swollen joint so it can be examined for urate crystals and tested for infection. Aspiration is particularly useful for a first attack, an unusual pattern or possible joint infection. It may not be needed when symptoms are typical and infection is unlikely.

A blood test can measure serum urate. A high result supports the diagnosis but does not confirm it by itself. Urate may temporarily fall during a flare, so a normal result does not rule out gout. Testing may be repeated after the flare settles.

Ultrasound or dual-energy CT can sometimes show crystal deposits when the diagnosis is uncertain. X-rays may identify damage in established gout but can be normal early on. Blood and urine tests may also assess kidney function and related health concerns.

Treatment and management

Treatment aims to settle active flares and reduce urate over the long term.

Anti-inflammatory treatment for a flare may include a non-steroidal anti-inflammatory drug (NSAID), colchicine or a corticosteroid like prednisone or hydrocortisone . The safest option

depends on kidney function, stomach ulcers, cardiovascular conditions, pregnancy and other medicines. In selected cases, a corticosteroid may be injected into the affected joint.

Resting and elevating the joint may help. A wrapped cold pack can reduce discomfort, but do not put ice directly on your skin.

Long-term urate-lowering medicines reduce blood urate. Allopurinol is commonly used first. Febuxostat or medicines that increase urate removal may be considered in some circumstances. Treatment usually starts at a low dose and is adjusted using blood-test results.

A treat-to-target approach aims to keep blood urate below an agreed level, commonly 360 micromoles per litre, or 6 milligrams per decilitre. A lower target may be considered for people with tophi, joint damage or frequent flares.[1][2]

Starting urate-lowering treatment can temporarily cause more flares as crystals shift and dissolve. Preventive anti-inflammatory treatment may be offered during the early months. Because crystal removal takes time, urate-lowering treatment usually continues even when you feel well.

If you already take urate-lowering medicine, generally continue it during a flare unless a clinician advises otherwise. Stopping and restarting may contribute to further attacks.

Complications

Repeated inflammation can damage cartilage and bone, causing persistent pain, stiffness and reduced movement. Tophi may grow, press on nearby structures, interfere with footwear or hand movement, and occasionally break through the skin. They often shrink when urate remains below target.

Urate can also form kidney stones, causing severe side or back pain, nausea, blood in the urine or difficulty passing urine.

Because gout commonly occurs with kidney disease and cardiovascular risk factors, routine checks of blood pressure, kidney function, cholesterol and blood sugar are important.

Prevention

Gout cannot always be prevented because inherited traits, kidney function and necessary medicines may raise urate despite a balanced diet.

For people with gout, keeping blood urate below target is the most reliable way to prevent flares and crystal-related damage. This may require regular urate-lowering medicine and

follow-up blood tests.

Lifestyle measures can support treatment:

Crash dieting and fasting can alter urate and trigger a flare. You do not usually need to avoid every purine-containing food; purine-rich vegetables are not generally treated like organ meat or large amounts of certain seafood.

Do not stop a prescribed diuretic or other medicine without medical advice. A clinician can review its benefits and possible alternatives.

- Drink enough non-alcoholic fluid unless you have a fluid restriction
- Limit beer, spirits and episodes of heavy drinking
- Reduce sugar-sweetened drinks and foods high in added fructose
- Eat moderate portions of red meat, organ meat and high-purine seafood
- Aim for gradual, sustainable weight loss if appropriate
- Manage blood pressure, diabetes and cholesterol

Living with it and what to expect

Gout often causes sudden flares separated by symptom-free periods. Attacks may become more frequent or last longer if urate remains high.

After long-term treatment begins, flares can continue for a while or briefly become more frequent. This does not necessarily mean treatment is failing. When urate remains below target, crystals gradually dissolve, although this may take months or years, especially with large tophi.[3][4]

As the crystal burden falls, flares usually become less frequent and may stop. Tophi can shrink and further damage may be prevented, but existing joint damage may not fully reverse.

Follow-up checks monitor urate, kidney function, side effects and whether treatment has reached its target. Checks are usually less frequent once treatment is stable, but long-term monitoring remains useful.

Many people live normally with well-controlled gout. Taking prescribed medicine consistently, including when you have no symptoms, is often more important than following a highly restrictive diet.

When to get medical help

Arrange prompt medical assessment for a first episode of sudden, severe joint pain and swelling. Injury, joint infection and other forms of arthritis can resemble gout.

Seek urgent same-day help if:

These features may indicate a joint infection, which requires urgent testing and treatment.

Seek emergency help for trouble breathing, swelling of the face or throat, faintness, or a widespread blistering or peeling rash after taking medicine.

Arrange follow-up if flares become more frequent, tophi grow, treatment causes possible side effects or urate remains above target. Severe side or back pain, blood in the urine, or difficulty passing urine also needs assessment because it may indicate a kidney stone.

- A joint is hot and swollen and you also have a fever
- You feel generally very unwell during a suspected flare
- Redness or swelling is spreading quickly
- Symptoms began after joint surgery, an injection or a wound
- You have a weakened immune system and develop an acutely swollen joint

Common questions

Is gout caused by eating too much rich food?

Diet can affect urate, but it is rarely the only cause. Genes, kidney function, body weight, medicines and other conditions are often more important.

How long does a gout flare last?

Pain often peaks within the first day and may improve over several days with treatment. An untreated flare can last a week or longer. A hot, swollen joint that is not improving should be reassessed.

Can my urate test be normal when I have gout?

Yes. Blood urate can fall during a flare, so testing may be repeated after symptoms settle. Finding urate crystals in joint fluid provides stronger confirmation.

Should I stop allopurinol during a flare?

People already taking allopurinol are generally advised to continue it unless told otherwise. The flare is treated separately with an appropriate anti-inflammatory medicine.

Can gout go away permanently?

The tendency to build up urate often remains, but keeping urate below target can dissolve

crystals and prevent symptoms for long periods.

Do I have to avoid all meat and seafood?

Usually not. Moderate portions and a balanced diet are more practical than banning food groups. Organ meat, large amounts of red meat and certain seafood have a greater effect on urate than most vegetables.

Sources

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