CONDITION

Raynaud phenomenon

Raynaud phenomenon causes temporary colour, temperature, and sensation changes in fingers or toes when blood vessels narrow.

WHAT IT IS
Episodes of reduced blood flow to fingers or toes

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
White or blue digits, coldness, numbness, tingling

WHAT CAUSES IT
Blood-vessel overreaction, sometimes linked to another condition

HOW IT IS DIAGNOSED
Attack history, examination, nailfold microscopy, and blood tests

MAIN TREATMENT
Warming strategies and blood-vessel-widening medicines

CAN IT BE CURED?
Sometimes - removing triggers may stop attacks

IS IT AN EMERGENCY?
Sometimes - persistent painful discolouration or black tissue

LONG-TERM OUTLOOK
Usually manageable; secondary Raynaud follows its underlying condition

Overview

Raynaud phenomenon causes brief episodes of reduced blood flow, usually in the fingers or toes. Small blood vessels narrow more than they normally would in response to cold, emotional stress, or another trigger. This narrowing is called a vasospasm.

During an attack, affected skin may turn white as blood flow falls. It may then look blue as the tissues use available oxygen. When blood flow returns, the area may become red, warm, painful, or throbbing. Not everyone has all three colour changes.

There are two main forms:

Raynaud phenomenon is a condition rather than a disease. Most people can manage it by keeping warm and avoiding triggers. However, new, severe, or one-sided symptoms may need

assessment for an underlying cause.

- Primary Raynaud phenomenon occurs without another identified medical condition. It is often milder and does not usually damage tissue.
- Secondary Raynaud phenomenon is linked to another condition, medicine, injury, or workplace exposure. It may cause more severe blood-flow problems.

Symptoms

An attack most often affects one or more fingers or toes. The thumbs may be less affected than the other fingers. Symptoms can also occur in the nose, ears, lips, or nipples.

You may notice:

Colour changes can be harder to recognise in brown or black skin. An affected area may instead look pale, grey, bluish, or darker than usual. Comparing it with nearby skin and noticing temperature or sensation changes can help.

Attacks may last from several minutes to a few hours. They often improve after gentle warming or when the trigger passes.

Primary Raynaud usually affects both hands in a similar pattern. Secondary Raynaud may be more painful, affect one side more than the other, or cause sores at the fingertips. These patterns are not enough to identify the cause by themselves.

- Skin turning white, blue, red, or a mixture of these colours
- Coldness, numbness, or reduced sensation
- Tingling, burning, throbbing, or pain as circulation returns
- Temporary stiffness or difficulty using the affected fingers

Causes and risk factors

Raynaud attacks happen when small arteries narrow suddenly. This is part of the body's normal response to cold, but in Raynaud phenomenon the response is stronger than expected.

Primary Raynaud has no identified underlying disease. Family traits may contribute, and it often begins in adolescence or early adulthood.

Secondary Raynaud can be associated with conditions that affect blood vessels or connective tissue, which supports structures such as skin and joints. These include systemic sclerosis, lupus, rheumatoid arthritis, Sjögren disease, and some blood or thyroid conditions.

Other possible contributors include:

Medicines that may worsen symptoms include some beta blockers like metoprolol or propranolol , decongestants, migraine treatments, and medicines used for attention-deficit/hyperactivity disorder. Do not stop a prescribed medicine on your own. A clinician or pharmacist can review its possible effects and discuss alternatives when appropriate.

- Repeated use of vibrating tools
- Previous cold injury or damage to a hand or foot
- Smoking, vaping, or other nicotine exposure
- Some medicines that narrow blood vessels
- Certain chemotherapy medicines or stimulant drugs
- Pressure from repetitive hand activities in some people

Diagnosis

There is no single test that confirms every case of Raynaud phenomenon. Diagnosis is usually based on your description of attacks, colour changes, triggers, and how long symptoms last. Photographs taken during an attack can be useful because your hands or feet may look normal at an appointment.

An examination may check circulation, pulses, skin, nails, joints, and any sores. The pattern and severity help determine whether secondary Raynaud is possible.

A test called nailfold capillaroscopy may be used. This examines the tiny blood vessels at the base of a fingernail with a microscope or magnifying device. Abnormal vessel shapes can suggest certain connective-tissue diseases.

Blood tests may look for inflammation or antibodies linked to autoimmune disease. An autoimmune disease happens when the immune system mistakenly attacks the body's own tissues. Blood tests do not diagnose Raynaud by themselves, and an abnormal antibody result does not always mean that you have an autoimmune disease.

Further testing is guided by your symptoms and examination rather than being needed for everyone.

Treatment and management

Treatment aims to reduce attacks, relieve symptoms, and protect the skin. Secondary Raynaud also requires attention to its underlying cause.

Keeping your whole body warm is often more effective than warming only your hands. Layered clothing, warm socks, gloves, and hand warmers may help. Gloves can be useful when handling chilled or frozen food, not only when going outside.

Try to avoid rapid temperature changes. For example, put on warm clothing before entering cold surroundings rather than waiting until symptoms begin. Regular physical activity may support general circulation, although it does not remove the tendency to have attacks.

During an attack:

Avoid very hot water, radiators, or direct heat on numb skin because reduced sensation increases the risk of burns.

Nicotine narrows blood vessels and can make attacks worse. Support is available if you want to stop smoking or vaping. Managing stress may reduce attacks when emotional stress is a trigger, although stress is not the cause of every episode.

If these measures are not enough, a clinician may offer medicine that relaxes and widens blood vessels. Calcium-channel blockers are commonly used. Possible side effects include headache, flushing, dizziness, ankle swelling, or low blood pressure.

More severe secondary Raynaud may require other blood-vessel-widening medicines or specialist treatment. Procedures that interrupt nerve signals to affected blood vessels are considered only in selected severe cases. Treatment choice depends on the cause, symptom severity, other health conditions, and potential side effects.

- Move to a warm place if possible
- Gently warm your hands under your arms or in warm water
- Move or massage the digits gently
- Use slow breathing if stress is contributing

Complications

Primary Raynaud does not usually cause permanent damage. Complications are more likely with secondary Raynaud, especially when an underlying disease has damaged the blood vessels.

Prolonged loss of blood flow can cause painful cracks or ulcers, which are open sores. These may heal slowly and can become infected. Rarely, severely reduced circulation causes tissue death, known as gangrene.

Persistent pain, a wound that is not healing, or signs of infection need prompt medical assessment. Infection signs include increasing redness, warmth, swelling, discharge, or fever.

Prevention

Raynaud phenomenon cannot always be prevented. Primary Raynaud reflects how your blood vessels respond, and there is no proven way to remove that tendency.

You may be able to prevent some attacks by keeping warm, avoiding sudden temperature changes, and limiting known triggers. Avoiding nicotine is particularly important because it narrows blood vessels.

If a medicine appears to trigger attacks, ask for a medication review rather than stopping it suddenly. For secondary Raynaud, treating the associated condition and protecting affected fingers or toes may reduce attacks and complications.

If your work involves vibrating equipment or repeated cold exposure, suitable protective clothing, breaks, and an occupational health review may help reduce symptoms.

Living with it and what to expect

Primary Raynaud often remains manageable over many years. Attacks may come and go with seasons, stress, or changes in routine. Some people have fewer symptoms as they get older, while others continue to have regular episodes. Primary Raynaud does not usually progress into tissue damage.

Secondary Raynaud follows the course of its underlying cause. Symptoms may remain stable, improve when a trigger is removed, or become more troublesome if blood-vessel disease progresses. Regular follow-up may be advised when there are signs of an autoimmune or circulation condition.

It can help to note when attacks happen, how long they last, and whether sores develop. Photographs may document colour changes. This record can also show whether warming measures or treatment are helping.

Most people continue their usual work, exercise, and daily activities. Planning for cold settings-such as keeping gloves nearby or warming a car before travel-can make episodes less disruptive.

When to get medical help

Arrange a routine appointment if you develop Raynaud symptoms for the first time, attacks are becoming more frequent, or they affect daily activities. Assessment is also important if symptoms begin later in adulthood, occur mainly on one side, or are accompanied by joint pain, skin tightening, rashes, muscle weakness, or swallowing problems.

Seek urgent medical advice if:

Seek emergency care if a finger or toe turns black or dark grey, or if there is sudden severe pain with a cold, pale limb. These signs can mean that tissue is not receiving enough blood and need immediate assessment.

- A finger or toe remains discoloured and painful after gentle warming
- You develop a new ulcer, worsening wound, or signs of infection
- Pain is severe or sensation does not return
- Symptoms suddenly become much worse than usual

Common questions

Is Raynaud phenomenon dangerous?

Primary Raynaud is usually uncomfortable rather than dangerous and rarely damages tissue. Secondary Raynaud can be more serious because prolonged loss of blood flow may cause ulcers or, rarely, tissue death.

Is Raynaud an autoimmune disease?

Raynaud itself is not an autoimmune disease. Primary Raynaud occurs on its own. Secondary Raynaud can be linked to autoimmune diseases such as systemic sclerosis or lupus, but many people with Raynaud do not have either condition.

Why do my fingers turn white in the cold?

Cold can cause the small arteries in your fingers to narrow. With Raynaud phenomenon, they narrow more strongly or for longer than expected, reducing blood flow and making the skin look white or pale.

Can Raynaud affect my toes as well as my fingers?

Yes. Toes are commonly affected. Attacks can also involve the ears, nose, lips, or nipples, although this is less common.

What should I do during a Raynaud attack?

Move somewhere warm and gently rewarm the affected area. You can place your hands under your arms, use warm water, or move your fingers and toes. Avoid very hot water or direct heat, especially while the skin is numb.

Does Raynaud go away?

It may improve over time, but this cannot be predicted. Attacks caused by a removable trigger may stop once that trigger is addressed. Primary Raynaud may continue for years but is often manageable. Secondary Raynaud depends mainly on the associated condition.

Sources

- National Institute of Arthritis and Musculoskeletal and Skin Diseases. Raynaud's Phenomenon: Diagnosis, Treatment, and Steps to Take
- NHS. Raynaud's
- Herrick AL. Raynaud's phenomenon . Journal of Scleroderma and Related Disorders . 2019;4(2):89-101
- Hughes M, Herrick AL. Raynaud's phenomenon . Best Practice & Research Clinical Rheumatology . 2016;30(1):112-132