



Raynaud's Phenomenon

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FAST FACTS

- Treatment of Raynaud's phenomenon depends on its severity and whether you have any other health conditions. For most people, Raynaud's phenomenon is more a nuisance than a disability.
- Women are more likely to have Raynaud's phenomenon. It's also more common in people who live in colder climates.
- Raynaud's occurs in two main types: primary and secondary.

What is Raynaud's?

Raynaud's phenomenon. This term refers to color changes (blue, white and red) that occur in fingers and, sometimes, toes. Raynaud's often occurs after exposure to cold temperatures. It occurs when the blood flow to the hands, fingers or toes is temporarily reduced. Raynaud's can lead to finger swelling, color changes, numbness, pain, skin ulcers and gangrene on the fingers and toes. People with have Raynaud's may have other diseases, and some people with Raynaud's do not have any other disease.

Raynaud's occurs in two main types:

- Primary Raynaud's is the most common form of the disorder and is not connected to an underlying disease or related medical problem. It is also called Raynaud's phenomenon.
- Secondary Raynaud's is also called Raynaud's phenomenon. This form is caused by an underlying, or related, problem. Secondary Raynaud's is less common than the primary form, but it tends to be a more serious disorder. Symptoms of secondary Raynaud's often first appear at later ages — around 40 — while people with the primary form often see symptoms earlier.

What Causes Raynaud's?

At this time, we do not completely understand what causes Raynaud's. However, doctors do know that blood vessels in the hands and feet appear to overreact to cold temperatures or stress:

- When your body is exposed to cold temperatures, your hands and feet may lose heat. Your body slows down the blood supply to your fingers and toes to preserve your body's core temperature. Your body specifically reduces blood flow by narrowing the small arteries under the skin of your fingers and toes. In people with Raynaud's, this normal response is exaggerated.
- Stress causes a similar reaction to cold in the body. Likewise, the body's response — reduced blood flow to fingers and toes— may be exaggerated in people with Raynaud's.

In Raynaud's, arteries to your fingers and toes go into a state called vasospasm. Vasospasm occurs when a blood vessel's spasm causes blood vessels to narrow, dramatically and temporarily limiting blood supply. Over time, these same small arteries may thicken slightly, further limiting blood flow. Affected skin turns a pale and dusky color due to the lack of blood flow to the area. Once the spasms go away and blood returns to the area, the tissue may turn red before returning to the skin's normal color.

Cold temperatures are most likely to trigger an attack. Exposure to cold can be as simple as putting your hands under a faucet of running cold water, taking food out of the freezer or exposure to cold air. For some people, exposure to cold temperatures isn't necessary. Emotional stress alone can cause an episode of Raynaud's. Raynaud's may be partly an inherited disorder.

Causes of secondary Raynaud's include:

- [Scleroderma](#)
- [Lupus](#)
- [Rheumatoid arthritis](#)
- [Sjögren's syndrome](#)
- Diseases of the arteries. Raynaud's may be associated with various diseases that affect arteries, such as atherosclerosis, which is the gradual buildup of plaques in blood vessels that feed the heart (coronary arteries), or Buerger's disease, a disorder in which the blood vessels of the hands and feet become inflamed. Primary pulmonary hypertension, a type of high blood pressure that affects the arteries of the lungs, may also be linked to Raynaud's.
- [Carpal tunnel syndrome](#)
- Injury due to overuse. Raynaud's may also be caused by repetitive injuries that damage nerves serving blood vessels in the hands and feet. For example, some people who type for long periods of time may be susceptible to Raynaud's.
- Smoking. Smoking constricts blood vessels and is a potential cause of Raynaud's.
- **Injuries.** Earlier injuries to the hands or feet, such as a wrist fracture, surgery or frostbite, may lead to Raynaud's phenomenon.



Raynaud's phenomenon is a vascular disorder that causes intermittent interruption of blood flow to the extremities. The affected body part may turn white or blue and feel cold and numb until circulation improves.

- **Certain medications.** Some drugs — including beta blockers, which are used to treat high blood pressure; migraine medications that contain ergotamine; medications containing estrogen; certain chemotherapy drugs; and drugs that cause blood vessels to narrow, such as some over-the-counter (OTC) cold medications — have been linked to Raynaud's.
- **Chemical exposure.** People exposed to vinyl chloride, such as those who work in the plastics industry, may develop an illness similar to scleroderma. Raynaud's can be a part of that illness.
- **Thyroid gland disorders.**

Who Gets Raynaud's?

Risk factors for primary Raynaud's include:

- **Gender.** Primary Raynaud's affects women more than men.
- **Your age.** Although anyone can develop the condition, primary Raynaud's often begins between the ages of 15 and 30.
- **Where you live.** The disorder is also more common in people who live in colder climates.
- **Your family history.** Additionally, a family history appears to increase your risk of primary Raynaud's. About one-third of people with primary Raynaud's have a first-degree relative — a parent, sibling or child — with the disorder.

Risk factors for secondary Raynaud's include:

- **Associated diseases.** These include conditions such as scleroderma and lupus.
- **Certain occupations.** People in occupations that cause repetitive trauma, such as workers who operate tools that vibrate, also may be more vulnerable to secondary Raynaud's.
- **Exposure to certain substances.** Smoking, medications that affect the blood vessels and exposure to chemicals such as vinyl chloride are associated with an increased risk of Raynaud's.

How is Raynaud's diagnosed?

To diagnose Raynaud's, your doctor will ask detailed questions about your symptoms and medical history, and conduct a physical examination. Your doctor may also run tests to rule out other medical problems that may cause similar signs and symptoms, such as a pinched nerve.

To distinguish between primary and secondary Raynaud's, your doctor may perform an in-office test called nail fold capillaroscopy. During the test, the doctor examines your nail fold — the skin at the base of your fingernail — under a microscope. Tiny blood vessels (capillaries) near the nail fold that are enlarged or deformed may indicate an underlying disease. However, some secondary diseases can't be detected by this test.

If your doctor suspects that another condition, such as an autoimmune or connective tissue disease, underlies Raynaud's, he or she may order blood tests, such as:

Antinuclear antibodies test. A positive test for the presence of these antibodies — produced by your immune system — indicates a stimulated immune system, and is common in people who have connective tissue diseases or other autoimmune disorders.

Erythrocyte sedimentation rate. This blood test determines the rate at which red blood cells settle to the bottom of a tube in the space of an hour. A faster than normal rate may signal an underlying inflammatory or autoimmune disease. Autoimmune diseases are commonly associated with secondary Raynaud's.

There's no single blood test to diagnose Raynaud's. Your doctor may order other tests, such as those that rule out diseases of the arteries, to help pinpoint a disease or condition that may be associated with Raynaud's.

How is Raynaud's treated?

Self-care and prevention steps, such as dressing in layers or wearing gloves or heavy socks, usually are effective in dealing with mild symptoms of Raynaud's. If these are inadequate, medications are available to treat more-severe forms of the condition. The goals of treatment are to:

- Reduce the number and severity of attacks
- Prevent tissue damage
- Treat any underlying disease or condition

Medications

Depending on the cause of your symptoms, medications may help treat Raynaud's. To widen (dilate) blood vessels and promote circulation, your doctor may prescribe:

Calcium channel blockers. These drugs relax and open up small blood vessels in your hands and feet. They decrease the frequency and severity of attacks in most people with Raynaud's. These drugs can also help heal skin ulcers on your fingers or toes. Examples include nifedipine (*Adalat CC, Afeditab CR, Procardia*), amlodipine (*Norvasc*) and felodipine (*Plendil*).

Alpha blockers. Some people find relief with drugs called alpha blockers, which counteract the actions of norepinephrine, a hormone that constricts blood vessels. Examples include prazosin (*Minipress*) and doxazosin (*Cardura*).

PDE-5 inhibitors. These drugs may effectively relieve the symptoms of Raynaud's. These drugs include the high blood pressure drug losartan (*Cozaar*), the erectile dysfunction medication sildenafil (*Viagra, Revatio*), the antidepressant medication fluoxetine (*Prozac, Sarafem*), and a class of medications called prostaglandins.

You and your doctor may find that one drug works better for you than another. Some drugs used to treat Raynaud's have side effects that may require you to stop taking the medication. A drug may also lose effectiveness over time. Work with your doctor to find what works best for you.

Surgeries and medical procedures

In cases of severe Raynaud's, medications may be inadequate, so your doctor may explore other treatment options:

- **Nerve surgery.** Nerves called sympathetic nerves in your hands and feet control the opening and narrowing of blood vessels in your skin. In cases of severe Raynaud's, it may be necessary to cut these nerves to interrupt their exaggerated response. Through small incisions in the affected hands or feet, a doctor strips away these tiny nerves around the blood vessels. The surgery, called sympathectomy, may reduce the frequency and duration of attacks, but it's not always successful.
- **Chemical injection.** Doctors can inject chemicals to block sympathetic nerves in affected hands or feet. You may need to have the procedure repeated if symptoms return or persist.
- **Amputation.** Sometimes, doctors need to remove tissue damaged from a lack of blood supply. This may include amputating a finger or toe affected by Raynaud's in which the blood supply has been completely blocked and the tissue has developed gangrene. This surgery is rarely used.

Living with Raynaud's

A variety of steps can decrease Raynaud's attacks and help you feel better overall:

- **Don't smoke.** Smoking causes skin temperature to drop by constricting blood vessels, which may lead to an attack. Inhaling secondhand smoke also may aggravate Raynaud's, so avoid being around smokers if possible.
- **Exercise.** Your doctor may encourage you to exercise regularly, particularly if you have primary Raynaud's. Exercise can increase circulation among other health benefits.
- **Control stress.** Because stress may trigger an attack, learning to recognize and avoid stressful situations may help control the number of attacks.
- **Avoid caffeine.** Caffeine causes your blood vessels to narrow, and it may increase the signs and symptoms of Raynaud's.
- **Take care of your hands and feet.** If you have Raynaud's, guard your hands and feet from injury. Don't walk barefoot. Take care of your nails to avoid injuring sensitive toes and fingertips. In addition, avoid wearing anything that compresses blood vessels in your hands or feet, such as tight wristbands, rings or footwear. Wear gloves during cold weather.
- **Avoid workplace triggers.** Avoiding tools that vibrate the hand may reduce the frequency of attacks.

If you're experiencing an attack of Raynaud's, the first and most important action is to warm your hands or feet or any other affected areas of skin. The following steps can help you gently warm your fingers and toes:

- Move to a warmer area.
- Place your hands under your armpits.
- Wiggle your fingers and toes.
- Make wide circles (windmills) with your arms.



The blanching phase of Raynaud phenomenon is illustrated in this 61-year-old woman with a 10-year history of limited scleroderma.

- Run warm — but not hot — water over your fingers and toes.
- Massage your hands and feet.

Points to Remember

- **Dress warmly outdoors.** In winter, wear a hat, scarf, socks and boots, and mittens or gloves under mittens when you go outside. Put them on before you go outside. A hat is important because you lose a great deal of body heat through your head. Wear a coat with cuffs that fit snugly around your mittens or gloves to prevent cold air from reaching your hands. Wear earmuffs and a face mask if the tip of your nose and your earlobes are sensitive to cold. Run your car heater for a few minutes before driving in cold weather.
- **Take precautions indoors.** Wear socks inside. When taking food out of the refrigerator or freezer, wear gloves, mittens or oven mitts. Some people find it helpful to wear mittens and socks to bed during winter. Because air conditioning can trigger attacks, setting your air conditioner to a warmer temperature may help prevent attacks. You may also find it helpful to use insulated drinking glasses or koozies.
- Avoid potential triggers such as smoking, stress and caffeine.
- Patients should see physicians with specialized expertise in the care of this disease, such as a rheumatologist.

The role of a rheumatologist in the treatment of Raynaud's

Raynaud's can be a complex disease. As experts in diagnosing and treating autoimmune diseases such as Raynaud's, rheumatologists can best advise patients about treatment options.

To find a rheumatologist

- For a list of rheumatologists in your area, [click here](#).
- Learn more about [rheumatologists](#) and rheumatology health professionals.

For additional information

The American College of Rheumatology has compiled this list to give you a starting point for your own additional research. The ACR does not endorse or maintain these websites, and is not responsible for any information or claims provided on them. It is always best to talk with your rheumatologist for more information and before making any decisions about your care.

National Heart, Lung, and Blood Institute (NHLBI)
National Institutes of Health

Website: <http://www.nhlbi.nih.gov>

American College of Rheumatology

Website: <http://www.rheumatology.org>

Lupus Foundation of America (LFA)

Website: <http://www.lupus.org>

Scleroderma Foundation

Website: <http://www.scleroderma.org>

Scleroderma Research Foundation

Website: <http://www.srfcure.org>

Sjögren's Syndrome Foundation, Inc.

Website: <http://www.sjogrens.org>

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