

## RAYNAUD'S DISEASE

**Raynaud's disease** is a rare vascular disorder that affects blood flow to the extremities (the fingers, toes, nose and ears) when exposed to cold temperatures or in response to psychological stress.

Raynaud's affects the arteries. Raynaud's is sometimes called a disease, syndrome, or phenomenon. The disorder is marked by brief episodes of vasospasm (narrowing of the blood vessels).

Vasospasm of the arteries reduces blood flow to the fingers and toes. In people who have Raynaud's, the disorder usually affects the fingers. In about 40 percent of people who have Raynaud's, it affects the toes. Rarely, the disorder affects the nose, ears, and lips. In Raynaud's disease, arteries that supply blood to the skin narrow, limiting blood circulation to affected areas.



## SYMPTOMS

The symptoms include several cyclic color changes:

1. When exposed to cold temperatures, the blood supply to the fingers or toes, and in some cases the nose or earlobes, is markedly reduced; the skin turns pale or white called pallor, and becomes cold and numb.
2. When the oxygen supply is depleted, the skin color turns blue (called cyanosis).

3. These events are episodic, and when the episode subsides or the area is warmed, the blood flow returns and the skin color first turns red (rubor) and then to normal, often accompanied by swelling and tingling. Women are more likely to have Raynaud's disease. It's also more common in people who live in colder climates.

All three color changes are observed in classic Raynaud's disease. However, not all patients see all of the color changes in all episodes, especially in milder cases of the condition. Symptoms are thought to be due to reactive hyperemias of the areas deprived of blood flow.

## **CAUSES**

In most cases, the cause of Raynaud's isn't known. A number of different things can cause secondary Raynaud's, such as:

- Diseases and conditions that directly damage the arteries or damage the nerves that control the arteries in the hands and feet
- Repetitive actions that damage the nerves that control the arteries in the hands and feet
- Injuries to the hands and feet
- Exposure to certain chemicals
- Medicines that narrow the arteries or affect blood pressure.

## **Disease and Conditions**

Secondary Raynaud's is linked to diseases and conditions that directly damage the arteries or damage the nerves that control the arteries in the hands and feet.

Scleroderma and lupus are two examples of conditions that are linked to Raynaud's. About 9 out of 10 people who have scleroderma have Raynaud's. About 1 out of 3 people who has lupus has Raynaud's.

Buerger's disease.

Raynaud's also has been linked to thyroid problems and pulmonary hypertension.

## **Repetitive Actions**

Repetitive actions that damage the arteries or the nerves that control the arteries in the hands and feet may lead to Raynaud's.

Typing, playing the piano, or doing other similar movements repeatedly over long periods may lead to secondary Raynaud's. Using vibrating tools, such as jackhammers and drills, also may raise your risk for Raynaud's.

## Chemicals

Exposure to certain workplace chemicals can cause a scleroderma-like illness that's linked to Raynaud's. An example of such a chemical is vinyl chloride used in the plastics industry.

The nicotine in cigarettes also can raise the risk for Raynaud's.

## Medicine

Several medicines are linked to secondary Raynaud's, including:

- Migraine headache medicines that contain ergotamine. This substance causes the arteries to narrow.
- Certain cancer medicines, such as cisplatin and vinblastine.
- Some over-the-counter cold and allergy medicines and diet aids. Some of these medicines
- Beta blockers.
- Birth control pills as these medicines can affect blood flow

People who have Raynaud's disease) or Raynaud's phenomenon can have attacks in response to cold temperatures or emotional stress.

During a Raynaud's attack, the arteries become very narrow for a brief period. As a result, little or no blood flows to affected body parts. This may cause these areas to:

- Turn pale or white and then blue
- Feel numb, cold, or painful
- Turn red, throb, tingle, burn, or feel numb as blood flow returns to the affected areas

Raynaud's attacks can last less than a minute or as long as several hours. Attacks can occur daily or weekly.

Attacks often begin in one finger or toe and move on to other fingers or toes. Sometimes only one or two fingers or toes are affected. Different areas may be affected at different times.

Severe cases of secondary Raynaud's can cause skin sores or gangrene which refers to the death or decay of body tissues. Fortunately, severe Raynaud's is rare. The surgery often relieves symptoms, but sometimes for only a few years. Shots may need to be repeated if symptoms persist.

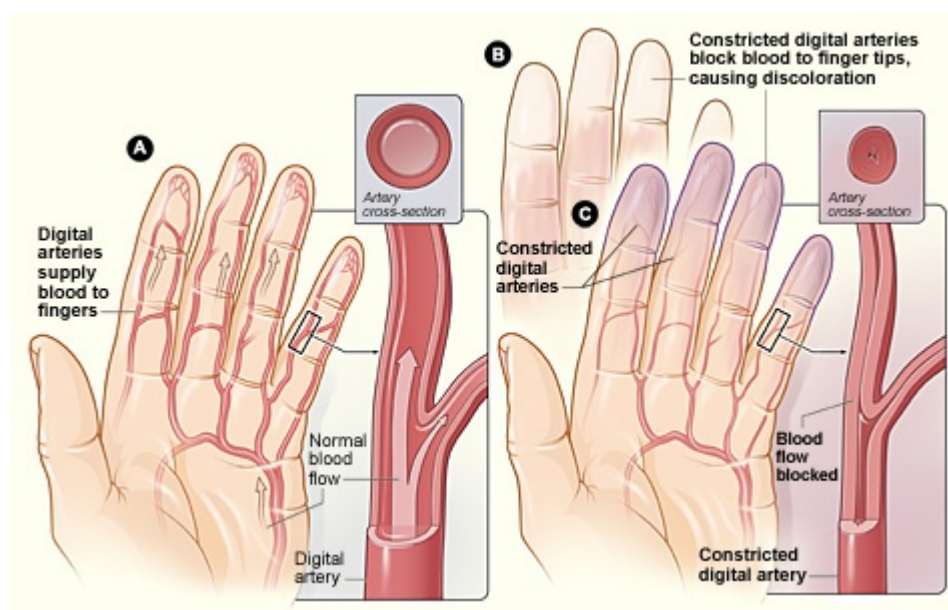


Figure A shows arteries in the fingers (digital arteries) with normal blood flow. The inset image shows a cross-section of a digital artery. Figure B shows fingertips that have turned white due to blocked blood flow. Figure C shows narrowed digital arteries, causing blocked blood flow and blue fingertips. The inset image shows a cross

## DIAGNOSIS

Primary Raynaud's disease or Raynaud's phenomenon is diagnosed based on medical history, a physical exam and the results from tests. A rheumatologist is a doctor who specializes in treating disorders of the joints, bones, and muscles. A Rheumatologists diagnose and treat many of the diseases that may be linked to secondary Raynaud's, such as scleroderma and lupus.

## **Physical Exam**

Fingers and toes are checked for the health of the skin and nails and to check blood flow to these areas. The doctor may also do a more complete physical exam to check for signs of diseases and conditions that are linked to secondary Raynaud's.

## **Diagnosis Tests.**

Following tests may be recommended to check for Raynaud's and related conditions:

### Cold Stimulation Tests

A cold stimulation test can be used to trigger Raynaud's symptoms. For this test, a small device that measures temperature is taped to the fingers. The hands are then exposed to cold, they're usually briefly put into ice water. The hands are then removed from the cold, and the device measures how quickly the fingers return to their original temperature. If Raynaud's, it may take more than 20 minutes for the fingers to return to their original temperature.

### Nailfold capillaroscopy

A test called nailfold capillaroscopy, where a drop of oil is smeared at the base of the fingernail. He or she then looks at the fingernail under a microscope.

If abnormal arteries are seen, it may mean the patient has a disease linked to Raynaud's, such as scleroderma.

## **TREATMENT**

Primary Raynaud's or Raynaud's disease and secondary Raynaud's or Raynaud's phenomenon have no cure. However, treatments can reduce the number and severity of Raynaud's attacks. Treatments include lifestyle changes, medicines and, rarely, surgery.

Some medicines can trigger Raynaud's attacks. Examples include:

- Migraine headache medicines that contain ergotamine. This substance causes the arteries to narrow.
- Certain cancer medicines, such as cisplatin and vinblastine.
- Over-the-counter cold or allergy medicines or diet aids. Some of these medicines can narrow the arteries.

- Beta blockers. These medicines slow your heart rate and lower your blood pressure.

## **REFERENCES**

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