

# Focus on Ischemia

## What You Need to Know About Symptoms, Risk Factors, and Treatment

### What Is Ischemia?

**Ischemia** (i-ski-me-ah) is a severe condition in which there is not enough blood flow and oxygen to a part of the body. It may cause tissue damage and loss of limbs.

Ischemia can occur anywhere blood flows. This includes the limbs, heart, brain, or intestines. A narrowing or blockage of an artery usually causes it. Signs of ischemia depend on how quickly the blood flow is interrupted and where it occurs. This condition won't improve on its own and requires medical attention.

### Where Does It Occur and What Are the Symptoms?



**Lower extremities.** Ischemia can cause **claudication** anywhere from the hips to the toes in people who have peripheral artery disease (PAD). Claudication is pain caused by lack of blood flow.

Early signs of ischemia may include “rest pain.” Usually, pain will wake up someone at night. It can be relieved temporarily by hanging the leg over the bed or getting up to walk around.

This can progress over time to **critical limb threatening ischemia (CLTI)**. This is severe pain or tissue loss due to the reduced blood flow to the affected limb. A nonhealing sore or even gangrene (tissue death) may occur. This condition causes the skin to turn black. A rapid decrease in blood flow to the legs may cause:

- Severe pain
- Loss of pulses
- Coldness of the limb

- Paleness of the skin
- Leg weakness
- Loss of sensation

*If you think you may have critical limb ischemia or gangrene, and are experiencing any of the symptoms above, seek medical attention immediately.*

For more information, review these related flyers:

- Buerger's Disease
- Carotid Artery Disease
- Stroke



**Heart.** In the heart, coronary artery disease (CAD) causes ischemia. It may lead to a heart attack or **angina** (an-ji-nuh). This is chest pain experienced during activity that goes away with rest. *This is a medical emergency.*



**Brain.** Ischemia may cause a stroke or transient ischemic attacks (TIAs), or ministrokes. *This is a medical emergency.*



**Intestines.** In the intestines, it is known as mesenteric ischemia and can cause severe abdominal pain. This type of ischemia can happen quickly (acute) or slowly (chronic).

Chronic ischemia occurs when the arteries providing blood flow to the intestines are slowly blocked over time. This may cause abdominal pain after eating. When ischemia happens quickly, it is usually caused by a blood clot and may cause bowel gangrene. This can cause sudden severe abdominal pain. *Acute (sudden) mesenteric ischemia is a medical emergency.*

# What Are the Risk Factors for Ischemia?

The risk factors are the same as for **atherosclerosis** (plaque buildup in the arteries):

- Smoking
- Advanced age
- High cholesterol
- High blood pressure
- Diabetes
- Family history of cardiovascular disease
- Sedentary, or inactive, lifestyle
- Having excess weight

# How Is Ischemia Diagnosed?

Diagnosis of ischemia depends on where it is in the body. The first clue is your symptoms. Monitor and write down your symptoms to discuss them with your health care provider. Your provider will ask you:

- When and where the pain occurs
- How often you get it
- What relieves it
- What makes it worse

If you feel discomfort and pain in your legs while walking, you may need to go to a noninvasive vascular laboratory. Here, you may have an **ankle-brachial index (ABI)** test. This tests the blood pressures in the legs.

Depending on those findings, you may be sent for other diagnostic tests, such as:

- Duplex ultrasound imaging of the arteries
- A magnetic resonance arteriography (MRA)
- Computed tomography (CT)

To see whether you have critical limb ischemia, your provider may order an **arteriogram**. This procedure takes images of your arteries. A special dye is injected to help the specialist see inside the arteries.

If you've been having chest pain or discomfort, your provider may suspect heart ischemia. In this case, your provider may advise you to get a stress test. In severe cases, you may be sent for **coronary angiography**. This checks your coronary arteries for a blockage.

# How Is Ischemia Treated?

Treatment of ischemia depends on where it is and how serious it is. Treatment is focused on getting more blood supply to the affected area. For example, quitting smoking helps to improve blood flow. If you smoke, it's crucial to discuss this with your doctor. Other ways that ischemia is managed or treated include:



**Medications.** Medicine is prescribed to prevent further disease progression and keeps other factors, such as high blood pressure and cholesterol, from making it worse. Medicines that fight infections and pain medications may also be prescribed in some instances.



**Exercise.** Regular exercise is important for improving symptoms related to ischemia. Regular physical activity may also result in other benefits such as weight loss, improved blood pressure and cholesterol, and better control of diabetes.



## Surgical or Medical Interventions for Treating Ischemia

- An **endovascular** (meaning inside the blood vessel) procedure.
  - **Thrombolysis.** This therapy uses clot-busting drugs to dissolve clots.
  - **Angioplasty.** A small balloon can be inserted into the artery to help widen it. A **stent** (a tiny tube) can also be put inside the artery to keep it open.
  - A **bypass** of the affected artery may be performed. Examples of bypass procedures are leg artery bypass or coronary artery bypass grafting (also known as CABG).
  - **Carotid endarterectomy** is performed for severe blockages in the carotid arteries. This is when specialists remove problematic plaque from the artery.

## Questions for Your Doctor



It is important to work closely with your health care provider about your diagnosis and treatment. You can bring this form with you to help talk to your medical provider about any questions and concerns you may have.

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