

Patent Foramen Ovale



What is a patent foramen ovale?

A patent foramen ovale (PFO) is a small opening between the two upper chambers of the heart, the right and the left atrium. Normally, a thin membranous wall made up of two connecting flaps separates these chambers. No blood can flow between them. If a PFO exists, a little blood can flow between the atria through the flaps. This flow is not normal.

The condition is most important because it raises the risk of stroke. PFO's don't cause strokes. Blood clots can travel from the right atrium to the left atrium and out to blood vessels of the body. If the clot blocks a blood vessel in the brain, it can cause a stroke. These clots can also damage other organs, such as the heart or the kidneys.

Everyone has a PFO at birth. It is a normal part of the circulation of a baby in the uterus. In most infants, this small hole naturally closes very soon after birth. But in some cases, it does not. Having a PFO as an adult or older child is not normal. But it occurs in many people. It may be slightly more common in younger adults compared with older adults. But it occurs in people of all ages. The size of the PFO can vary somewhat.

What causes a patent foramen ovale?

Before birth, a PFO is normal. In the unborn baby, blood high in oxygen travels from the right atrium, across the hole between the atria, and into the left atrium. From here, the blood higher in oxygen goes out to the lower left part of the heart. Then it goes out to the rest of the body. After birth, the blood high in oxygen is already in the left atrium. So it doesn't need blood from the right atrium. That's why the foramen ovale normally closes soon after birth. Healthcare providers don't know what causes the hole to stay open (patent) in some people instead of closing up.

Sometimes a PFO occurs along with other heart problems. One such condition is Ebstein anomaly. It's when the valve between the upper and lower chambers on the right side of the heart doesn't form correctly.

What are symptoms of a patent foramen ovale?

Most of the time, a PFO itself causes no symptoms. Sometimes symptoms do result from the complications of a PFO, such as stroke.

How is a patent foramen ovale diagnosed?

Your healthcare provider will ask about your past health and do a physical exam. They will also need tests to help make the diagnosis. These include:

- **Transthoracic echocardiography.** This test is an ultrasound done on the skin of the chest to see how blood is moving through the heart.
- **Transesophageal echocardiography.** Ultrasound pictures are taken from the esophagus.
- **Multidetector CT.** This scan offers another way to see the PFO.
- **Cardiovascular MRI.** This imaging test also provides another way to see the PFO.
- **Transcranial doppler.** This test is an ultrasound. It finds bubbles that pass through the heart and into the arteries that supply blood to the brain.

Healthcare providers often pair these tests with a bubble study. In this test, the technician injects saline that has been shaken into a blood vessel. The bubbles that occur can then be tracked through the heart with the above imaging tests.

Sometimes a healthcare provider diagnoses a PFO based on tests that were needed to diagnose some other condition. Other times, the provider may be looking for a PFO. That might happen, for example, if they are looking for possible causes of a stroke.

How is a patent foramen ovale treated?

Most PFOs need no treatment. People who have no risk factors for stroke or any history of traveling blood clots often don't get treatment. Your healthcare provider may want to treat your PFO if you have had problems from these traveling blood clots, such as a stroke.

Choices include:

- Antiplatelet medicines, such as aspirin to help prevent blood clots
- Anticoagulant medicines, such as warfarin to help prevent blood clots
- Closure of the PFO with a catheter-based procedure. A catheter is a long, thin tube inserted through a vessel.
- Closure of the PFO during heart surgery

Ask your provider what treatment plan is best for you.

What are possible complications of a patent foramen ovale?

Stroke is the major possible complication of a PFO. People who have a PFO are slightly more likely to have a stroke than people who don't. A PFO is more likely to be involved in a stroke of a younger adult. That's because younger people don't have as many risk factors for stroke from other causes. Stroke can cause these symptoms:

- Leg numbness or weakness
- Confusion
- Trouble seeing out of one eye
- Severe headache
- Loss of coordination

Most strokes don't result from a PFO. Even people who have a PFO often have strokes for other reasons.

A PFO can cause other complications as well. These include:

- Migraine and vascular headache
- Air embolism in scuba divers
- Heart attack (rare)
- Blood clots affecting other organ systems. For example, kidney damage may happen because a clot blocks blood flow to the kidney.

How can I manage a patent foramen ovale?

In many cases, your healthcare provider may choose not to treat your PFO directly. They may make suggestions about how to lower your overall risk for stroke. These might include:

- Eating a healthy diet
- Getting enough exercise and preventing obesity
- Taking medicines for high blood pressure or high cholesterol, as needed
- Not smoking

- Getting treatment for other health conditions that increase the risk for stroke. An example is atrial fibrillation.
- Not drinking too much alcohol or not using illegal drugs

Your healthcare provider might also give you tips to prevent getting blood clots in your legs. For instance, don't sit or stand in the same position for a long time. Tell all your healthcare providers about your PFO. Follow your healthcare provider's instructions about medicine and lifestyle.

When should I call my healthcare provider?

See a healthcare provider right away if you are having any symptoms of stroke. These include sudden weakness or numbness, confusion, trouble seeing out of an eye, or loss of coordination.

Key points about patent foramen ovale

- A PFO means that you have a small opening between the right and left atria of the heart. This opening normally closes soon after birth. But in many people, it does not.
- PFO itself often does not cause any symptoms.
- PFO can sometimes result in complications. The most serious of these is stroke.
- Most people will not need treatment for a PFO.
- Some people receive treatment for a PFO, especially if they have had a stroke because of it. Treatment may include medicine, procedures, or surgery.

Next steps

Tips to help you get the most from a visit to your healthcare provider:

- Know the reason for your visit and what you want to happen.
- Before your visit, write down questions you want answered.
- Bring someone with you to help you ask questions and remember what your provider tells you.
- At the visit, write down the name of a new diagnosis and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you.
- Know why a new medicine or treatment is prescribed and how it will help you. Also know what the side effects are.
- Ask if your condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if you do not take the medicine or have the test or procedure.
- If you have a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your healthcare provider if you have questions, especially after office hours or on weekends and holidays.

© 2000-2027 The StayWell Company, LLC. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions.
This information is not intended as a substitute for professional medical care. Always follow your Healthcare professional's instructions. Copyright Krames LLC.