

# Understanding the Heart Defect

## Patent Foramen Ovale

By James L. Orford, MD, FACC

**C**urrently, there is a lot of research and conversation surrounding the heart defect Patent Foramen Ovale (PFO). PFO is a heart defect found in 25 percent of the population (making it more common than blue eyes). Recent controversy has sparked because of a new technology that allows for simple correction of this heart defect. However, the literature remains very controversial due to lack of conclusive evidence for benefits of this procedure and concerns about long-term outcomes.

“Because PFO is very common and never causes any problems in most patients, undergoing surgery to possibly prevent migraines and/or stroke usually isn’t worth the risk.”

### What is PFO or ASD?

While a baby is growing in the mother’s womb, there is a natural opening between the top right and the top left sides of the heart (atria). This allows blood to bypass the baby’s lungs since, while in the womb, the baby receives oxygen from the mother’s placenta and doesn’t need to breathe on its own. With the baby’s first breath, two partitions are naturally pushed together, closing the gap and allowing oxygenated blood to flow into the baby’s lungs.

Over the first few weeks of life, these two partitions naturally seal and normal blood circulation occurs. However, in 25 percent of the population, these partitions do not fully seal and a small amount of blood may continue to cross from the right side to the left side of the heart without passing through the lungs. This is called a patent foramen ovale (PFO). Fewer than 5 percent of atrial defects (less than one in 1,500) have a more significant deformity called Atrial Septal Defect (ASD). ASD describes an actual hole or gap between the right and left atria of the heart, which may be a result of missing or deformed partitions that are unable to close at birth.

Researchers have not been able to identify any known causes of PFO. In the vast majority of people, the presence of a PFO causes no health problems for their entire lives.

### Uncommon Problems Possibly Associated with a PFO

Stroke, the third-leading cause of death in the United States, is a devastating event that commonly results in significant disability. Many causes of stroke have been identified, including hypertension, high cholesterol, diabetes, and atrial fibrillation; but some patients suffer a stroke or mini-stroke without evidence of these risk factors. This is known as “cryptogenic” stroke. Many studies have demonstrated that PFO is more common in patients with cryptogenic stroke. But again, many patients with cryptogenic stroke do not have a PFO, and the vast majority of patients with PFO will never have a stroke.

About 10 percent of the population experiences migraine headaches. This is commonly described as an intense throbbing or pulsing in one area of the head. Patients may also experience nausea, vomiting, and light or sound sensitivity. Some migraines are preceded by aura, warning signs such as flashes of light, blind spots, or tingling on one side of the body. It has been noted that PFO is more common in patients who experience migraine with aura, but many patients with a PFO do not have migraine headaches and many migraine patients do not have a PFO. Furthermore, there is no conclusive evidence that fixing a PFO will benefit migraines.

JAMES L. ORFORD, MD, FACC  
CARDIOLOGY  
INTERMOUNTAIN UTAH HEART CLINIC  
801.507.3500  
UTAHHEART.ORG



### PFO Treatment Today

In the past, both PFO and ASD could only be corrected with open heart surgery. But recently, new medical devices have been developed that can be carefully inserted and placed inside the heart using a catheter, thus closing the hole without open heart surgery.

While this new technology presents significant good, the potential long-term consequences have not yet been measured. Intermountain Healthcare’s approach is to remain very conscientious about new procedures, including closure of a PFO, and balance the risk individually to each patient before recommending surgery.

Because PFO is very common and never causes any problems in most patients, undergoing surgery to possibly prevent migraines and/or stroke usually isn’t worth the risk. In a few cases, where patients have already suffered a confirmed cryptogenic stroke without any other possible cause, closing a PFO may be a viable option to prevent future strokes. However, it is important to consult with a neurologist and a cardiologist to determine all of your options and whether surgical closure is recommended. Patients are also encouraged to enroll in a clinic trial so their response to treatments can be studied, allowing scientists to learn more about this condition.

If you have been diagnosed with PFO, it is important to talk to your doctor about new technologies and whether or not they are right for you. Intermountain Healthcare recommends you ask your provider the following questions before undergoing surgery for this common malformation:

1. Was my stroke definitely a result of my heart condition, or could it be caused by other factors?
2. Does the potential benefit of closing my PFO outweigh the risk of undergoing surgery?
3. Is there published, peer-reviewed research that supports surgical solutions for my situation?

As leaders in cardiology, Intermountain Healthcare is always very conscientious regarding how new technology is applied. For this reason, the Intermountain Medical Group, Division of Cardiology instituted specific “Guidelines for Percutaneous Closure of Septal Defects of the Atrium” throughout all of our hospitals and clinics. We believe it is important to have clear, positive evidence for both the short-term and long-term consequences of any procedure.

To find a cardiologist near you, we invite you to visit the index at the back of this publication or [intermountainmedicalgroup.org](http://intermountainmedicalgroup.org).