Abbott

PATENT FORAMEN OVALE CLOSURE

With the Amplatzer™ PFO Occluder

INFORMATION GUIDE FOR PATIENTS AND CAREGIVERS

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This guide is for patients who have previously suffered a stroke that was from an unknown cause (also called “cryptogenic stroke”) and also have an opening in their heart between the two upper chambers of the heart that never fully closed after birth. The medical term for this opening in the heart is a patent foramen ovale (PFO). The information in this patient guide will help you learn more about cryptogenic stroke, PFO and treatments to reduce the chance of having another stroke. Be sure to ask your physician to explain all of your treatment options and the risks and benefits of each.

Amplatzer™
PFO Occluder

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YOUR HEART AND THE FORAMEN OVALE

Your heart is a muscular organ in your chest that is about the size of your fist. The heart's main function is to pump blood and supply oxygen to your entire body.

Before birth, there is an opening in the form of a tissue flap in the wall between the left and right upper chambers of the baby's heart (the left atrium and right atrium). This opening ("foramen ovale") allows blood containing oxygen from the mother to bypass the baby's lungs, which do not function until the baby is born. When the baby is born, the flap opening generally closes, and within a few months it is sealed completely.

WHAT IS A PATENT FORAMEN OVALE (PFO)?

In about 25% to 33% of people (that is, one in three to four individuals), the foramen ovale tissue flap does not close completely. When the foramen ovale remains open, it is called a "patent foramen ovale" or PFO. A PFO can allow a small amount of blood to pass from the right side of the heart to the left side of the heart; this is called a "shunt." In the vast majority of individuals, a PFO causes no medical problems whatsoever and, if found incidentally (typically in a sonogram of your heart called an echocardiogram), requires no treatment or follow-up.

The open foramen ovale before birth, a closed foramen ovale after birth and a patent foramen ovale after birth are shown in the diagram below.

FIGURE 1: Prior to birth

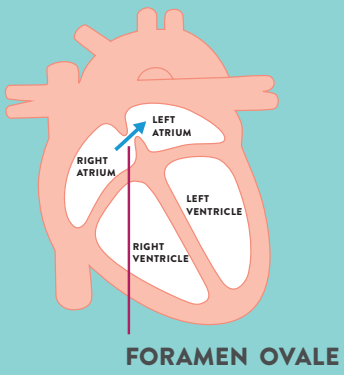


FIGURE 2: Post-birth; natural sealing of the PFO

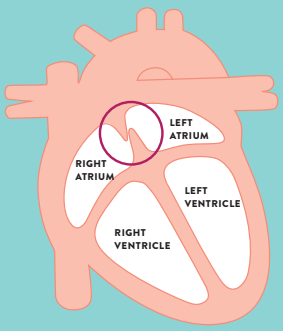
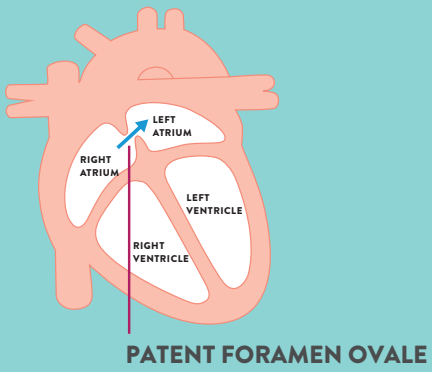


FIGURE 3: PFO remains open



WHAT IS A STROKE?

Strokes are caused by a sudden interruption in blood flow to a part of the brain or by bleeding within the brain tissue. When this happens, brain cells are deprived of oxygen and begin to die (brain damage). When brain cells die during a stroke, the function controlled by that part of the brain such as speech and movement may be impaired or lost completely.

WHAT ARE THE TWO MAIN TYPES OF STROKE?

There are two major types of stroke: hemorrhagic stroke and ischemic stroke. **A hemorrhagic stroke** occurs when injured blood vessels in the brain allow bleeding into the brain tissue, resulting in swelling and pressure that damages the brain. Hemorrhagic strokes occur most often in patients with poorly controlled high blood pressure.

An ischemic stroke occurs when a blockage develops in a blood vessel carrying blood to the brain. The most common causes of ischemic stroke are: (1) atherosclerosis ("hardening of the arteries") that narrows the vessel opening and reduces blood flow to the brain, and (2) a blood clot that blocks a brain artery. Most cases of blood clots are associated with a common heart condition

called atrial fibrillation, which causes an irregular heartbeat. Less common causes of ischemic stroke include inflammation or tears within brain blood vessels, spasm of brain blood vessels, blood clotting disorders and blood clots associated with artificial heart valves.

WHAT IS A CRYPTOGENIC STROKE, AND HOW IS THE DIAGNOSIS OF CRYPTOGENIC STROKE MADE?

A cryptogenic stroke is a type of ischemic stroke in which a specific cause (such as atherosclerosis or atrial fibrillation) is not found.

Before concluding that you have had a cryptogenic stroke, your medical team consisting of a **neurologist** (a doctor that evaluates and treats strokes) and a **cardiologist** (a heart doctor) will perform several important tests to look for the common and uncommon causes of ischemic stroke to guide your treatment. These tests typically include imaging studies of your brain and brain blood vessels (ultrasound, CT and/or MRI scans), extended monitoring of your heart rhythm, blood tests and an echocardiogram.

An echocardiogram is a sound wave test of your heart and can be performed by placing an imaging wand on your chest or within your esophagus (food tube). During your echocardiogram, your cardiologist will look carefully for abnormalities that may be associated with a blood clot that could travel to the brain and cause an ischemic stroke. The echocardiogram will include an evaluation to determine whether or not you have a PFO.

Although PFOs are very common in the general population (present in one of three to four individuals), this small opening within the heart can, in rare cases, allow a blood clot to pass from the right side of your heart to the left side of your heart, and then travel to the brain where it can block a blood vessel, resulting in a stroke. Therefore, the presence of a PFO is believed to be a factor that could lead to an ischemic stroke that would otherwise be called cryptogenic. As noted, when ischemic strokes occur, most patients have medical conditions not related to a PFO that likely led to the stroke. However, particularly in young to middle-aged adults with PFOs, when no underlying medical condition that caused the stroke can be found (that is, it was a cryptogenic stroke), the PFO may have played a role in the occurrence of the stroke. Blood-thinning medications or closure of the PFO may prevent you from having another ischemic stroke.

Based on the results of your testing that did not identify any of the likely known causes of stroke, your neurologist and cardiologist have concluded that you have had a cryptogenic stroke. Because you have a PFO, your doctors believe that you should consider closure of your PFO, among other treatment choices, to reduce the risk of having another ischemic stroke.

UNDERSTANDING YOUR TREATMENT OPTIONS

If you have been diagnosed with a PFO and cryptogenic stroke, PFO closure with the Amplatzer™ PFO Occluder may be one treatment option for you. After discussing the benefits and risks of the available treatments to reduce the risk of another stroke, you can decide which treatment is right for you. Treatment options are:

BLOOD-THINNING MEDICATION

Your doctor may prescribe blood-thinning medication to reduce your chance of having blood clots. **Aspirin** (taken daily) is the recommended medication for most patients to reduce the risk of having another ischemic stroke. Some physicians recommend stronger blood-thinning medications called anticoagulants.

OPEN HEART SURGERY TO CLOSE THE PFO

Most open heart surgeries are performed through an incision across the full length of the breast bone, or sternum. Open heart surgeries require the use of a heart lung machine, which takes over the function of the heart temporarily. Surgery is rarely performed nowadays to close a PFO.

PFO CLOSURE VIA A CATHETER-BASED PROCEDURE TO IMPLANT THE AMPLATZER™ PFO OCCLUDER

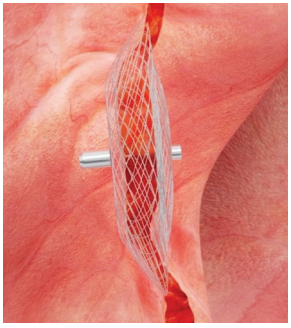
The Amplatzer™ PFO Occluder is a device that can be placed in your heart to close the PFO through a minimally invasive, catheter-based technique. In the major study to evaluate the safety and effectiveness of the Amplatzer™ PFO Occluder, most patients who were treated with the device also took blood-thinning medications (aspirin and clopidogrel for one month followed by aspirin alone indefinitely).

This patient guide is not intended to explain everything you need to know about your treatment options for PFO and cryptogenic stroke. Please discuss any questions you have with your doctor to determine which treatment option is right for you.

AMPLATZER™ PFO OCCLUDER

AMPLATZER™ PFO OCCLUDER DEVICE DESCRIPTION

The Amplatzer™ PFO Occluder is a device specifically designed to stop blood flow through a PFO. The device consists of two circular wire-mesh discs covered in a medical fabric that sandwich together to close the PFO between the two upper chambers in your heart (the left atrium and right atrium). The wire mesh material can be collapsed down to fit in a small tube (catheter) that is used to position the device during the procedure. Once the device is placed in the PFO during a catheter-based procedure, it will remain permanently implanted in your heart. Over time, the body's natural healing process will cover the device with tissue.



A diagram of the Amplatzer™ PFO Occluder as it would sit in your heart.

The Amplatzer™ PFO Occluder is available in three sizes. The most commonly used device size, when expanded, is similar in diameter to a dime and quarter stacked on top of each other and half the thickness.

WHAT DO YOU NEED TO KNOW ABOUT YOUR EVALUATION PRIOR TO THE PFO CLOSURE PROCEDURE?

Before implantation of the Amplatzer™ PFO Occluder, other potential causes for your past stroke should be ruled out by your neurologist and cardiologist. If no cause is identified for your stroke (that is, you have had a cryptogenic stroke) and you have been determined to have a PFO, this team of doctors may recommend the Amplatzer™ PFO Occluder for you.

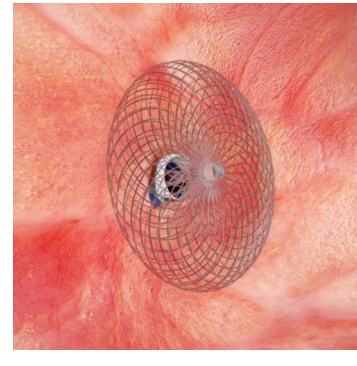
Before undergoing PFO closure, your doctors will also evaluate specific factors that need to be considered for the implantation procedure itself including:

- Your overall medical status
- Suitability of your vessels and heart size and shape for the catheter-based procedure
- Your suitability for general or local anesthesia
- Your suitability to have ultrasound imaging of the heart
- Your suitability for radiation exposure during the procedure that is necessary to implant the Amplatzer™ PFO Occluder

WHAT DO YOU NEED TO DO BEFORE THE PFO CLOSURE PROCEDURE?

Be sure to talk with your doctor about any medication you may be taking. He/she might advise you to adjust your medications prior to the procedure. Your doctor may tell you not to eat or drink anything after midnight prior to the procedure. You should plan on making arrangements for a ride to and from the hospital, and arrange for help at home (if necessary) after the procedure.

WHAT HAPPENS DURING THE PFO CLOSURE PROCEDURE?



The PFO closure procedure will take place in a heart catheterization laboratory, where minimally invasive procedures are performed. Before beginning the procedure, you will receive a sedating medication to help you relax and local anesthetic so that you do not feel any significant discomfort. The catheter-based procedure involves making a very small skin incision (cut), typically in the right groin area, and inserting a small tube (called a catheter) to guide the Amplatzer™ PFO Occluder through the blood vessels to close the PFO within your heart (see figure above). Once the device is placed across the PFO, the cardiologist will carefully study its position using cardiac imaging tools. When the cardiologist is satisfied with the position of the Amplatzer™ PFO

Occluder, the device will be released to remain permanently in the heart, all catheters will be removed and the implant procedure is complete. The procedure should last between one and two hours.

WHAT HAPPENS AFTER THE PFO CLOSURE PROCEDURE?

After the procedure, your medical team will discuss an after-care plan with you, and you should expect to be discharged from the hospital within 24 hours. Before you are discharged from the hospital, you will receive a patient identification card. You will be prescribed aspirin (81 to 325 mg) and clopidogrel (75 mg) to be taken daily for one month after the implant procedure, followed by daily aspirin (81 to 325 mg) alone for at least five additional months. Your doctor may prescribe additional medication (typically aspirin daily) beyond six months. You will have an echocardiogram at six months so that your doctor can make sure that your device is properly implanted.

Regular check-ups with your doctor are very important. Call or see your doctor whenever you have questions or concerns about your health. If you have any unusual problems such as bleeding, pain, other discomfort or changes in your overall health, be sure to contact your doctor.

Always carry your Amplatzer™ PFO Occluder implant card and tell other doctors that you have a PFO closure device before any medical, dental or MRI (magnetic resonance imaging) procedures. Failure to do so may result in health problems or damage to the device.

CLINICAL DATA ON THE Amplatzer™ PFO Occluder

The Amplatzer™ PFO Occluder was studied in the RESPECT Trial. The trial enrolled patients who, like you, were diagnosed with a PFO and a cryptogenic stroke. The trial enrolled 980 patients and was limited to patients aged 18 to 60 years old in the United States and Canada. Patients were randomly assigned (like a flip of a coin) to receive the PFO closure device plus blood-thinning medication or blood-thinning medication alone. Patients were assessed at 30 days, six months, one year and yearly thereafter. The RESPECT Trial was designed to evaluate whether PFO closure with the Amplatzer™ PFO Occluder plus blood-thinning medication was more effective in reducing the risk of another ischemic stroke compared with blood-thinning medication alone.

RATES OF NEW STROKES IN THE RESPECT TRIAL

The results of the RESPECT Trial were analyzed at two time points. The first analysis, performed when the average follow-up was about three years, showed that the rate of a new stroke was 50% less in patients treated with the Amplatzer™ PFO Occluder plus blood-thinning medication compared to blood-thinning medication alone. However, it is important to understand that there were not many new strokes in either treatment group. The analysis suggested that if 1,000 patients were treated with PFO closure, about six of these patients would have a stroke after one year compared with about 12 of 1,000 patients treated with blood-thinning medication alone.

The second analysis, performed when the average follow-up was about five years, suggested that if 1,000 patients were treated with PFO closure, about six of these patients would have a stroke after one year compared with about 10 out of 1,000 patients treated with blood-thinning medication alone.

RATES OF MEDICAL COMPLICATIONS RELATED TO PFO CLOSURE SEEN IN THE RESPECT TRIAL

The following table summarizes complications related to the PFO closure procedure or the closure device itself observed in the RESPECT trial. The information presented in the table shows the number of patients that would be expected to have complications out of every 1,000 patients treated with the Amplatzer™ PFO Occluder.

30-DAY COMPLICATIONS RELATED TO THE PROCEDURE OR DEVICE	
DESCRIPTION OF COMPLICATION	**RISK WITHIN 30 DAYS**
Injury to the heart	8 out of 1,000 patients
Bleeding from the puncture site	6 out of 1,000 patients
Blood clot in the leg or lung	6 out of 1,000 patients
Surgery to remove device	4 out of 1,000 patients
Ischemic stroke	4 out of 1,000 patients
Blood clot in the heart	4 out of 1,000 patients
Atrial fibrillation	4 out of 1,000 patients

Over the course of the RESPECT Trial, patients in the Amplatzer™ PFO Occluder group were about two times as likely as patients in the blood-thinning medication group to develop abnormal heart rhythms (mostly atrial fibrillation, of which some episodes were temporary) or blood clots in the legs and lungs (called deep venous thrombosis and pulmonary embolism).

WHAT ARE THE RISKS?

As with any medical procedure, there is a possibility of complications. The most serious risks of the procedure include:

- Death
- Stroke (major or minor)
- Blood or fluid buildup between the heart muscle and the sac that covers the heart requiring a drainage procedure
- Blood clot in the heart, leg or lung requiring long-term anticoagulation therapy
- Irregular and/or rapid heart rate (particularly atrial fibrillation)
- Perforation of the heart muscle or vessels

Additional potential risks associated with the procedure or the device include:

- Blood vessel blockage due to blood clots or air
- Allergic reaction to a drug used during the procedure
- Allergic reaction to contrast dye used to visualize heart during the implant procedure
- Allergic reaction to anesthesia
- Allergic metal reaction: Nitinol (nickel, titanium), platinum/iridium, stainless steel (chromium, iron, manganese, molybdenum, nickel)
- Trouble or inability to breathe
- Infection
- Bleeding
- Injury to the nerves in the arm or lower neck
- Injury to the heart or vessels
- Chest pain
- Movement of the device from its position within the PFO or to other parts of the body
- Fever
- Headache or migraine
- High or low blood pressure
- Heart attack
- Pacemaker implant
- Hard or fast heart beat
- Sudden interruption of blood flow to an organ or body part
- Fluid buildup around lungs
- Incomplete closure of PFO
- Infection
- Blood clot on device
- Heart valve damage that interferes with valve closure
- Surgery or intervention to remove the device

WARNINGS

- If you are prone to venous blood clots, your doctor may prescribe a blood-thinning medication (usually an anticoagulant) for at least 6 months.
- Talk to your doctor if you are allergic to nickel. The Amplatzer™ PFO Occluder is made of a metal called nitinol containing nickel and titanium.

PRECAUTIONS

Talk to your doctor if you are:

- Pregnant
- Have a history of multi-organ failure
- Unable to take blood-thinning medication

WHO SHOULD NOT HAVE THE PROCEDURE?

The Amplatzer™ PFO Occluder should not be implanted in patients who:

- Have a tumor or history of blood clots at the implantation site of the device or in the vessels through which the device is advanced to reach the heart
- Have small blood vessels
- Have a body organ (all or in part) such as the heart, or blood vessels, or heart valves that would interfere with the required device size
- Have other types of heart defect
- Have inflammation or infection of the heart

ADDITIONAL INFORMATION

Please visit our website for more information at **www.cryptogenicstroke.com/patients/.**

CAUTION: This product is intended for use by or under the direction of a physician. Prior to use, reference the Instructions for Use, inside the product carton (when available) or at eifu.abbottvascular.com or at medical.abbott/manuals for more detailed information on Indications, Contraindications, Warnings, Precautions and Adverse Events.

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