

Information on PFO

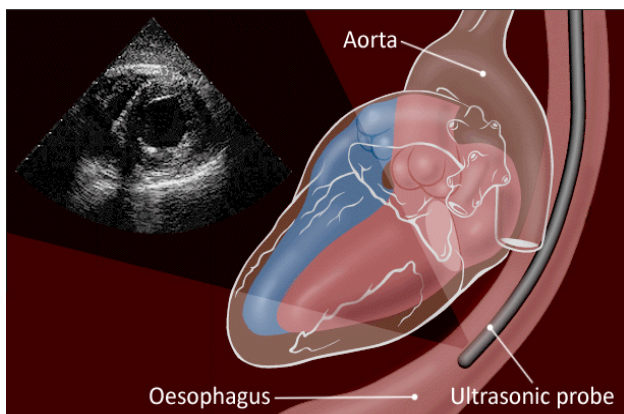
The abbreviation PFO stands for patent foramen ovale. A foramen ovale (which means “oval opening”) is a link between the right and left atria. During pregnancy, this shunt occurs in the heart of every unborn child. It is necessary so that the foetus's blood circulation is linked optimally with that of the mother to be. After the baby has been born and the cord has been cut, the foramen ovale is no longer needed as the newborn's blood is circulated using its own lungs from this time. The child breathes independently and is no longer dependent upon its mother's oxygen-rich blood. Normally, the body makes sure that this shunt in the child's heart fully grows over.

However, in a quarter to a third of all people, this does not fully close during childhood. In this case, we now talk of a patent (= persistent, permanent) foramen ovale (PFO).

In rare cases, this may affect safe scuba diving and may be associated with an increased risk of decompression sickness.

How does a PFO examination happen?

In order to ascertain whether a PFO exists and, if so, to assess how permeable this is, an ultrasound scan



of the heart is carried out. The most accurate method is a transoesophageal echocardiogram (also known as a TOE): here, a small ultrasound probe is swallowed which then comes to rest directly in the heart. During the examination, a contrast is usually injected into a vein (“bubbles”) and it is observed whether these bubbles move from the right to the left atrium. To ensure that a small PFO is not overlooked, pressure in the chest should also be increased during the examination using the Valsalva manoeuvre: a PFO is only excluded if no bubbles can be

seen in the left atrium during the ultrasound. This examination can be carried out similarly to a gastroscopy with the patient awake or sedated.

Can a PFO be closed?

Generally, it is possible to close the PFO using a small umbrella: for this, a thin wire is introduced through the groin blood vessels up to the heart and the self-opening umbrella is placed under X-ray fluoroscopy. The procedure is usually performed under local anaesthetic and is carried out in clinics with an interventional cardiology department.

As before all procedures, risks and benefits must be considered and weighed against each other. A PFO closure only has a small risk of complications- however, these may become complicated and a 100% seal for the PFO cannot be guaranteed in any procedure. Due to this, and because there are many other ways of reducing the decompression risk, the procedure should only be considered in exceptional circumstances and in close consultation with cardiologists, experienced diving doctors and divers.

Is a PFO screening advisable?

Some divers ask themselves whether they should undergo a PFO examination even though they have never had symptoms of decompression sickness. This type of “preventative” examination is also known as screening.

As, on the one hand, the risk of decompression sickness is very low if diving rules are observed and, on the other hand, a quarter to a third of all people have a PFO, an examination without a specific reason is not generally recommended. However, for some diving instructors, ambitious (technical) divers and professional divers, such a screening may be advisable in individual cases.