



University Hospitals Bristol
NHS Foundation Trust

Patient information service
St Michael's Hospital

Patent ductus arteriosus (PDA) assessment and your baby information for parents



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Patent ductus arteriosus information.

A baby in the womb gets its oxygen from the placenta and not from the lungs. The ductus arteriosus (or duct) is a blood vessel that allows blood to bypass the baby's lungs when in the womb. When babies are born the duct will usually close in a few days. If the duct remains open, it is known as a patent ductus arteriosus, or PDA.

Having a PDA means a baby has extra blood flowing to the lungs. As a result, there can be extra strain on the left side of the heart, which has to collect and pump the extra blood. The extra blood passing to the lungs may also mean that the lungs do not work as efficiently as they should.

Why does my baby have a PDA?

PDA is often seen in babies born very prematurely and does not have anything to do with what you did or did not do during the pregnancy.

Often the PDA will close on its own or with medicines. Sometimes it stays open in very premature babies and this may be a sign that your baby's lungs have some changes due to being born so early.

What are the signs and symptoms of PDA?

The signs and symptoms will vary depending on the size of the PDA and the age of your baby

- **Small PDA:** your baby may not have any symptoms and the PDA may only be picked up at a routine examination where a heart murmur is heard.
- **Large PDA:** your baby may have signs that the heart is struggling to cope with the extra work, such as breathlessness or needing a machine such as CPAP or a ventilator to help with breathing. Your baby may also have difficulty absorbing feeds and may not be growing properly.

How is PDA diagnosed?

Your baby will have an ultrasound scan of the heart (an echocardiogram, or "echo"). It allows doctors to see the PDA, the main blood vessels, the structure of the heart, how blood is moving through the heart and the effect the abnormal blood flow is having on the heart, lungs and body.

Doctors will look to see whether the left ventricle (the main pumping chamber to the body) is bigger than it should be. They will also look to check that the blood pressure in the lungs is high (pulmonary hypertension).

The doctors will also try to work out if your baby's lungs are being affected by the blood flowing from the PDA and whether they should use medicines to treat your baby's PDA or lungs.

How is PDA treated?

This will depend on how your baby is doing, the size of the PDA and how the extra blood flows through the heart and lungs is affecting your baby. Sometimes it may be best to wait a little bit to see if the PDA gets smaller on its own. Sometimes the treatment is with medicines, such as ibuprofen, to try to close the PDA.

Sometimes doctors will need to give your baby diuretics (to make your baby pass more urine) to help with removing extra water from the lungs. Sometimes doctors need to treat your baby's lungs with steroids to make the lungs better if they remain ventilated

If these methods are not appropriate or do not work, your baby may need surgery, to ligate (tie-off) the PDA and so make blood flow normally around your baby's body.

What happens next?

Your baby's doctors and cardiologists will discuss your baby's condition and heart scan findings with the cardiologists and neonatal specialists in Bristol. Your baby may then be transferred to Bristol, usually the neonatal intensive care unit (NICU) at St Michael's Hospital, for further assessment. A further assessment will be needed at St Michael's Hospital because your baby's condition might have changed, even in the relatively short time since his/her previous assessment at the local hospital.

Your baby will have a heart scan performed by the cardiology (heart) specialists in Bristol to check their heart. The neonatal team will review your baby's health, lungs, and ventilation. The neonatal and cardiology teams will discuss the findings and plan for further medical management or for surgery.

A decision will then be made on a case-by-case basis as to whether PDA surgery is needed or not.

This type of operation (PDA ligation) is usually straightforward, but can have complications. This will be discussed with you once a decision for surgery has been made, at the time of signing a consent form for surgery.

The operation is done through an incision (cut) on the left side of the chest, under the armpit. Your baby will be on a ventilator for this process and will be given medicines to keep them calm, and free of pain and stress.

Your baby will be transferred back to your local hospital after the Bristol team is satisfied your baby is stable and well.

Notes

Please note that if for any reason you would value a second opinion concerning your diagnosis or treatment, you are entirely within your rights to request this.

The first step would usually be to discuss this with the doctor or other lead clinician who is responsible for your care.

Smoking is the primary cause of preventable illness and premature death. For support in stopping smoking contact **NHS Smokefree on 0300 123 1044**

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