



Atrial Septal Defect

The aim of this information sheet is to explain what Atrial Septal Defect is, what effect it will have on a child and how it can be treated.

What is Atrial Septal Defect?

- Atrial means 'of the atria' – the collecting chambers of the heart.
- Septal means 'of the septum' – the wall between the right and left sides of the heart.
- Defect means that there is something wrong, in this case it is a hole

So Atrial Septal Defect (ASD) means there is a hole in the wall between the atrial chambers.

The blood in the left atrium is at a higher pressure than the blood in the right atrium. This means that some blood passes from the left atrium through the hole into the right atrium. The result is that the heart has to pump more blood than normal from the right atrium to the lungs.

The amount of blood that flows from the left to right atria depends on how big the hole between them is and on the difference in pressure between the atria. The more blood that goes through the hole, the harder the heart has to work and the greater the strain on it.

There are three types of ASD:

- Secundum defect – this is the most common type where the hole is in the middle of the atrial septum.
- Primum defect – this is when the hole is in the lower part of the septum. There may also be a problem with the mitral valve (resulting in a leak).
- Sinus venosus defect – this is the least common type of ASD when the hole is at the top of the septum. With this type, there can also be a problem with the vein running from the right atrium to the lungs.

Fig 1 – ASD

ASD (Atrial Septal Defect)

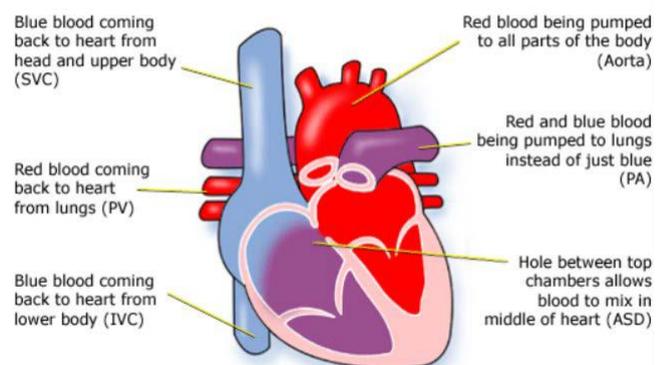
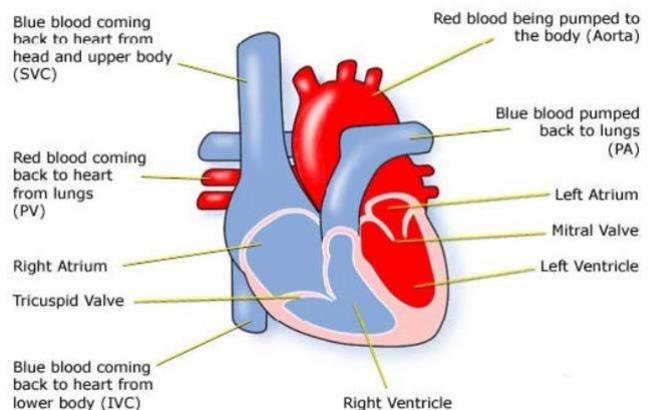


Fig 2 – Normal Heart

Normal Heart



Diagnosis

Sometimes a large ASD can be seen during a prenatal scan during pregnancy.

After birth, the sound of the extra blood moving through the right side of the heart and the pulmonary artery may be heard as a heart murmur. The discovery of the murmur will lead to tests and a diagnosis.

When a heart problem is suspected the tests used can be:

- pulse, blood pressure, temperature, and number of breaths a baby takes a minute
- listening with a stethoscope for changes in the heart sounds
- an oxygen saturation monitor to see how much oxygen is getting into the blood
- a chest x-ray to see the size and position of the heart
- an ECG (electrocardiogram) to check the electrical activity
- an ultrasound scan (echocardiogram) to see how the blood moves through the heart
- checks for chemical balance in blood and urine

However, many babies born with ASDs do not have any significant health problems, although they may have more frequent chest infections. As a result, the ASD may not be discovered until the child is older.

Some children have complex heart conditions where an ASD may be just one of a number of defects.

Treatment

In some cases, the ASD will close over time and no treatment will be necessary. If doctors think this is going to happen, they will monitor the ASD to make sure it is getting smaller and not affecting the child's health in any way.

If treatment is necessary, there are two options. The first option is to close the ASD using open heart surgery. This means that the heart will need to be stopped and opened to repair it. A heart bypass machine will take over the job that the heart normally does. The aim of the operation is to make the circulation of blood through the heart and lungs normal. This is done by placing a patch over the hole between the atria.

For most children this surgery is low risk, but it can depend on how well your child is otherwise. The doctors will discuss risks with you in detail before asking you to consent to the operation. The length of time in hospital will usually be about a week, depending on how well the child is otherwise.

The other treatment option is catheter intervention. This procedure uses a catheter (tube), which is passed through a vein into the heart. The ASD is then sealed by inserting a device through it and withdrawing the catheter. When the catheter is withdrawn, the device opens on both sides of the hole to close it.

This procedure is not regarded as surgery and your child would not have to be in intensive care afterwards. They would probably spend two or three days in hospital afterwards and should not have any scars

After Surgery

Most children will be completely well shortly after surgery. There will be a scar down the middle of the chest, and there may be small scars where drain tubes were used. These fade very rapidly in most children, but they will not go altogether. Smaller scars on the hands and neck usually fade away to nothing.

Whether a child has surgery or a catheter intervention they should be able to lead a normal, healthy life with only occasional checkups from their cardiologist.

Evidence and sources of information for this CHF information sheet can be obtained at:

- (1) National Institute for Health & Care Excellence. NICE Guidance IPG96. Endovascular closure of atrial septal defect. London: NICE; 2017. Available at: <https://www.nice.org.uk/guidance/IPG96>
- (2) Great Ormond Street Hospital. ASD Information. London: GOSH; 2017. Available at: <http://www.gosh.nhs.uk/medical-information/atrial-septal-defect-asd>

About this document:

Published: June 2013
Reviewed: May 2022

To inform CHF of a comment or suggestion, please contact us via info@chfed.org.uk or Tel: 0300 561 0065.