

Fallots Tetralogy (Tetralogy of Fallots)

What is Fallots Tetralogy?

Fallot was a doctor who spotted this particular type of heart defect. Tetralogy means fourfold – there are four defects found together.

These four problems are:

1. Sub-Pulmonary stenosis

Pulmonary means 'of the lungs'.

Stenosis means narrowing.

Sub-Pulmonary stenosis is a narrowing below the pulmonary valve. This means that blood has difficulty getting from the right ventricle into the pulmonary artery.

2. Ventricular Septal Defect

Ventricular means 'of the ventricles' - the pumping chambers of the heart.

Septal means 'of the septum' – the wall between the right and left sides of the heart

Defect means a hole.

So a VSD is a hole in the wall between the ventricles. This means that blood can leak from one side to the other.

3. Over-riding aorta

The entrance to the aorta, which should only take red (oxygenated) blood round the body, lies over the VSD, allowing the right ventricle to pump some blue (deoxygenated) blood directly into it.

4. Thick right ventricle

The right ventricle becomes thickened as it forces blood into the narrowed pulmonary artery.

Fig 1 – Fallots Tetralogy

Fallots Tetralogy

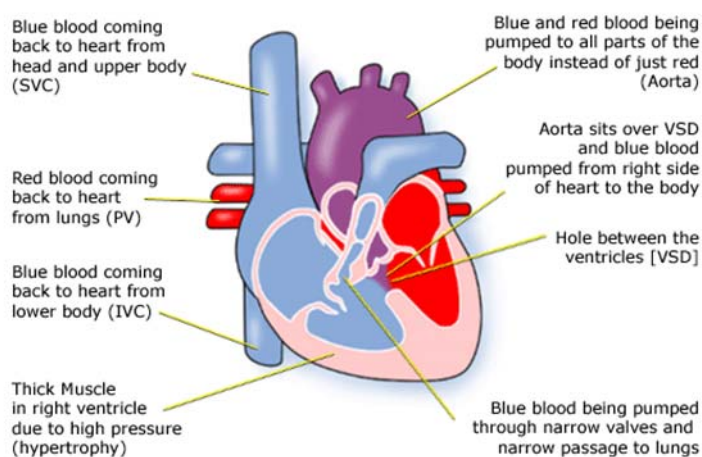
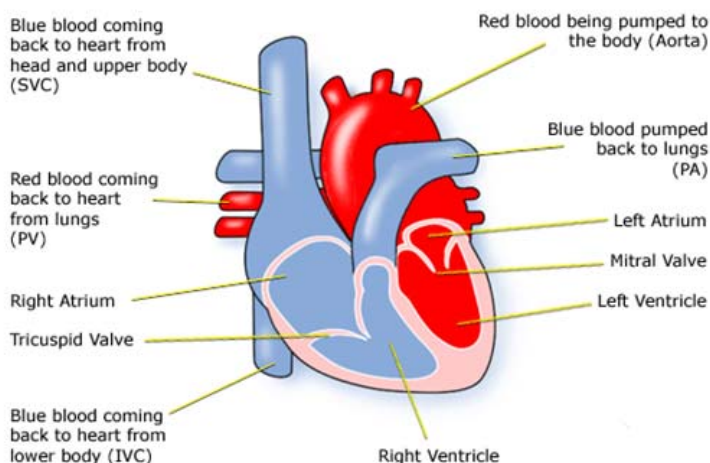


Fig 2 – Normal Heart

Normal Heart



Diagnosis

Fallot's Tetralogy can sometimes be seen on a scan during pregnancy.

After birth the sound of blood moving through the pulmonary valve can be heard as a heart murmur.

As your baby grows you may notice that he or she becomes more blue (cyanosed). At a few months he or she may start to have 'spells' – increased blueness and lapses of consciousness.

When a heart murmur is heard 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
- a catheter or Magnetic resonance Imaging test may be needed.

At home

You may be at home while your baby grows stronger for surgery.

You, your GP and Health Visitor should have details of your baby's condition from the heart doctor (paediatric cardiologist). If not, call the hospital at which your baby was treated, and ask for the name of the paediatric cardiologist and their telephone number. Call and explain that you need the information so that you can pass it on to, for example, your local casualty Department should your child have a sudden illness.

You should have the number of a cardiac liaison nurse or outreach nurse to call should you have questions or any fears about your baby's heart problem.

You should have the number of a parent support group – you can get this from the CHF helpline 0808 808 5000.

Treatments

Shunt: Your child may need an operation to increase the blood getting to the lungs. This is usually done by diverting an artery, usually the one that takes blood to the left arm or right arm, to the pulmonary arteries (a BT shunt). This operation is carried out through the side of the chest, and the heart doesn't have to be stopped.

Balloon dilation: Another way of increasing blood to the lungs is to use a balloon catheter. A balloon is inserted into the narrow part of the pulmonary artery, and then inflated, so stretching the pulmonary valve and part of the artery below it. This does not leave any scar. Your child will still need surgery later.

Open heart surgery: this surgery is intended to make the heart work normally. To do this the heart will need to be stopped and opened so a machine will have to take over the job that the heart normally does – the heart bypass machine.

The aim of the operation is to make the circulation of blood through the heart and lungs normal. A patch is put over the hole between the ventricles, and the narrow area around the pulmonary valve enlarged.

How the child is affected

Cases of Fallot's Tetralogy can be more complicated than this description, so there cannot be guarantees of how well your child will do. It is not uncommon for a child to pick up an infection, such as a chest infection or infected wound, while undergoing treatment. Some children react badly to some kinds of medicines. The kind of surgery needed can sometimes cause a very fast pulse rate (called

tachycardia), which may need medication to keep it stable.

But most children are completely well, active, and gaining weight a few days after surgery. He or she will have a scar down the middle of the chest, and there will 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.

After the first year, the child will be monitored infrequently by a cardiologist.

Other conditions

Tetralogy of Fallot is sometimes part of a syndrome, such as Down's Syndrome or 22q11.

Some people put many of their children's health difficulties down to the heart defect and treatment alone, so their children can miss out on help they need with other illnesses caused by a syndrome. If your child continues to suffer from problems such as vomiting, delayed walking and speech, behavioural problems and frequent infections, ask your GP or cardiologist for a referral to a paediatrician.

In later years the most common heart problems are:

- a very fast heart rate (SVT, or VT) can develop, which may need medicine to keep it stable
- the pulmonary valve may leak, which needs repair or replacing
- Hearts that are not normal are more likely to have an infection called endocarditis. Although rare this is a difficult disease to treat. People born with Fallot's Tetralogy will need to take antibiotics if there is a chance that a large number of bacteria will get into the blood stream. The most common way for this to happen is during ear-piercing or tattooing, or surgery, or a

dental procedure such as de-scaling of teeth or an extraction.

These problems may not become serious until the teen years or adulthood.

Parents' stories

Jason

I was really surprised when Jason got out of the hospital so quickly.

He was born with Fallot's – I can still remember the shock – I had no idea that babies could have heart conditions. That was 15 years ago. He wasn't well as a boy, a bit backward at school. He always had a leaky valve and he was in hospital again with it when he was ten. That time they put in a valve from someone else – his lungs weren't good afterwards and he was in for a month.

Once he was home he improved amazingly – eating like there was no tomorrow, piling on weight, grew 2" in a few months, and was a different boy. But then he started having palpitations, and they looked at his heart again and said the valve was leaky and would need to be replaced. They put him on medicine for a bit, then fixed him up for the next op.

It's different going into hospital when you're 15. Most of the kids on the ward were just toddlers, but Jason was in a separate area with a boy of 13, so he didn't take that too badly. The big surprise was that they told us they would like to put in a valve without doing a big operation, just pushing in a new one with a tube.

Jason had to agree himself, as he's old enough to decide that sort of thing.

Five days later – no intensive care, no collapsed lungs - Jason was back on his feet and having a night out with his mates!

Carly

A gorgeous baby, our Carly. They didn't find her problem until a week after the birth. Funny enough her mum's auntie had had the same – and grew up to have four kids, so we weren't that worried.

We thought she would have to grow up a bit, but they took her in and operated quite early. Even so, we had a shocking time with her for a few weeks. We couldn't settle at night – if she was awake we worried about her being asleep, and when

she was asleep we woke her to make sure she was breathing.

She didn't keep her feed down – not that she was that interested in it in the first place. Our Health Visitor was very nice, but she didn't have much to help us with. It seemed an age before we got the letter for the operation, and we were so relieved. It was plain sailing after that – you wouldn't know from looking at her what she's been through, although you could tell by looking at me and her mum!

Please contact CHF if you have suggested amendments or changes as we like to keep our information sheets relevant and up-to-date.

