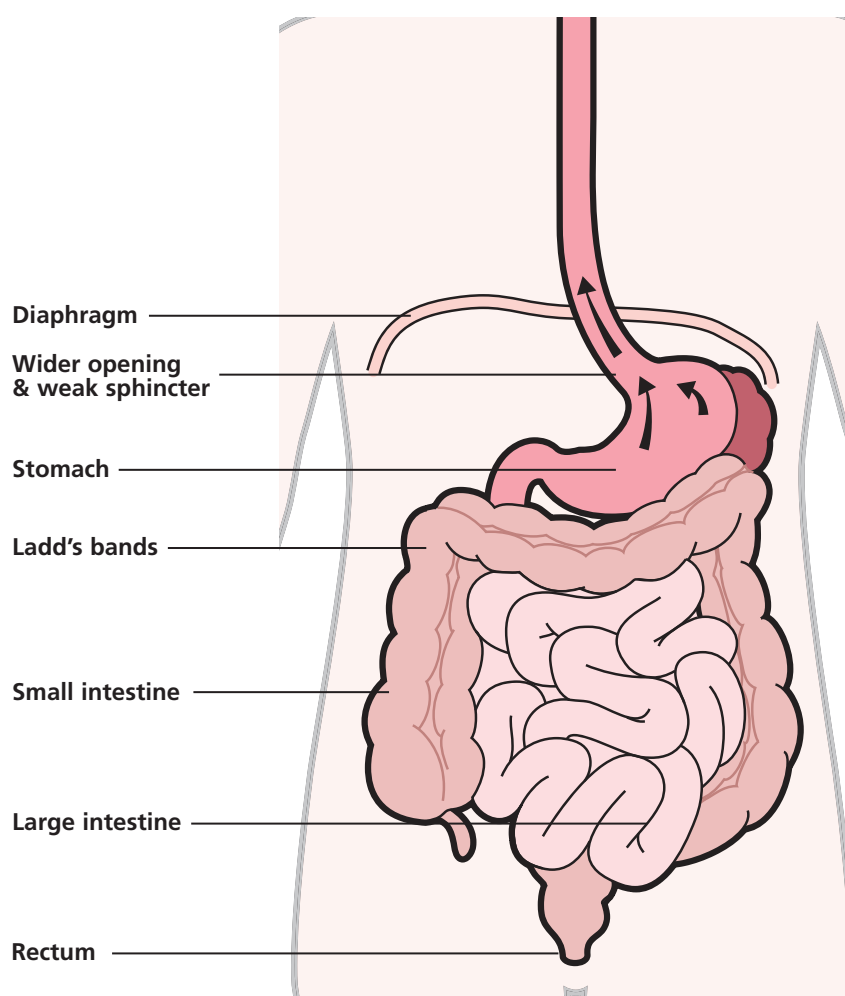




Small bowel atresia

This information sheet from Great Ormond Street Hospital explains the causes, symptoms and treatment of small bowel atresia.



The intestines form early in pregnancy as a long straight tube. Before the tenth week of pregnancy, they develop into the separate organs making up the digestive system. Occasionally, the intestines are not completed connected or blocked (atresia). Sometimes there is a partial blockage (web) inside the intestine.

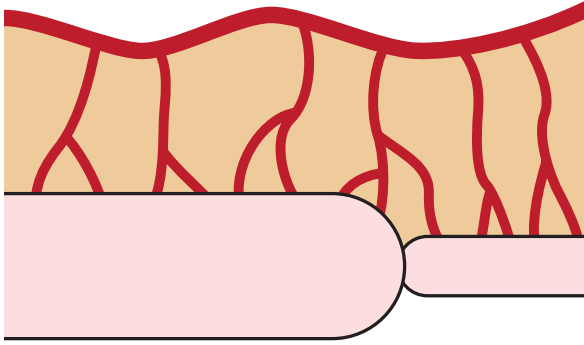
Any part of the intestines can be affected by atresia or stenosis. Duodenal atresia (see separate information sheet) is one type occurring in around 1 in 6000 births where the duodenum is closed off rather than being a tube. If the jejunum or ileum are affected, this is called 'small bowel atresia'.

Small bowel atresia is more common than duodenal atresia. We do not know how exactly how many babies are born with small bowel atresia each year but we do know that it affects boys and girls equally. It is more common in twins or multiple births and babies born prematurely or with low birthweight. Colonic atresia – affecting the large bowel – is very rare.

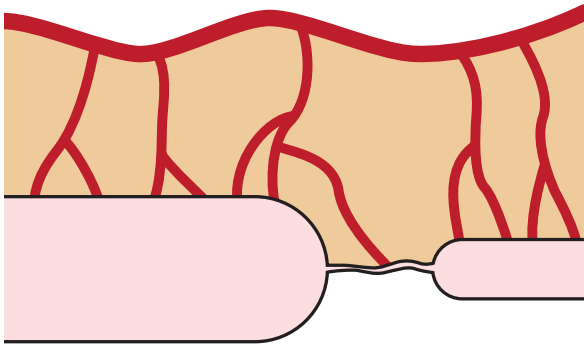
Small bowel atresia affects two areas of the small bowel – the jejunum and the ileum. The jejunum is the section of small bowel after the duodenum and is where the majority of nutrients are absorbed. The ileum is the main part of the small bowel, making up over half of its entire length, and connects to the large bowel. The blockage can affect any part of the ileum or jejunum.

There are several types of small bowel atresia as shown below.

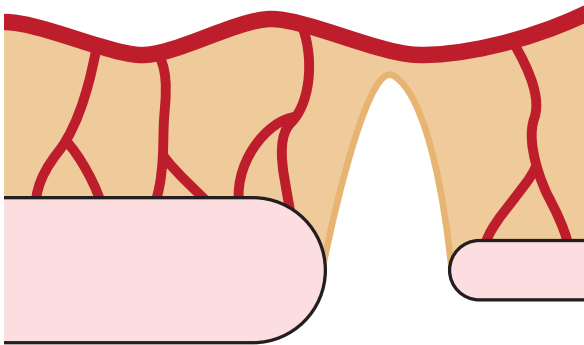
Type I



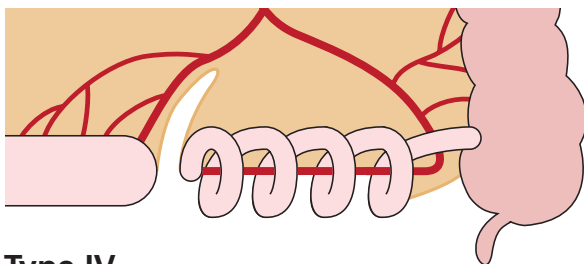
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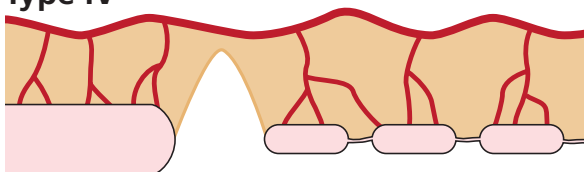
Type IIIa



Type IIIb



Type IV



What causes small bowel atresia?

More research is needed into the causes of small bowel atresia but currently doctors think that it is caused by reduced blood supply to sections of the bowel as the baby is developing in the womb. It is unlikely that it is caused by anything you did or did not do during pregnancy.

What are the signs and symptoms of small bowel atresia?

Many babies born with small bowel atresia appear well at birth but when they start to feed, they are sick and their vomit may be green. Their abdomen may appear swollen but soft and their skin may develop a yellow tinge (jaundice).

All newborn babies have meconium in their bowel. This is the dark faeces passed in the first day of life. Babies born with small bowel atresia may not pass any meconium at all or only a small amount. Not passing meconium does not prove that a baby has small bowel atresia but it may suggest it. Some babies with small bowel atresia pass meconium as expected.

How is small bowel atresia diagnosed?

When a baby with small bowel atresia is developing in the womb, they may be surrounded by much more amniotic fluid than usual (polyhydramnios). Small bowel atresia can sometimes be suggested during pregnancy using an ultrasound scan.

After the baby is born, small bowel atresia is usually diagnosed when there are signs of an obstruction, such as vomiting, green bile and a swollen abdomen. An x-ray scan may show a blockage. Occasionally, doctors may suggest using a contrast scan and/or enema instead or as well as an x-ray. Contrast scans and enemas use a thick, white liquid called barium or a clear liquid, both of which show up well on x-rays. The contrast cannot pass through the atresia suggesting an atresia is the problem.

How can small bowel atresia be treated?

Small bowel atresia is repaired in an operation under general anaesthetic which lasts around two hours. The operation to repair the atresia can usually be carried out using open surgery. Sometimes a laparoscopic (keyhole) procedure may help diagnose the problem so that it can be repaired using open surgery.

Are there any alternatives?

No. Small bowel atresia always requires treatment to allow your baby to feed.

What happens before the operation?

Your baby will be transferred to the hospital soon after birth.

If your child is dehydrated, they will need a 'drip' of fluids for a while before the operation. Your child will also need a nasogastric tube, which is passed up the nose, down the foodpipe and into the stomach. This will drain off the stomach and bowel contents and 'vent' any air that has built up, which will make your child more comfortable.

When your child is stable, the surgeon will explain about the operation in more detail, discuss any worries you may have and ask you to sign a consent form giving permission for your child to have the operation. Often the atresia is suspected but may not be the only possible cause of the blockage. The surgeon will explain this to you. An anaesthetist will also visit you to explain about the anaesthetic.

What does the operation involve?

The surgeon will look at the bowel to determine the level of the blockage. If it is an atresia, this section is removed and the cut ends are joined together (anastomosis). This provides a clear passage for food and fluid to travel through your child's intestine. The remainder of the small intestine will be checked for further atresias and treated if identified.

If it is not possible or safe to join the two ends together during the same procedure, the surgeon may bring the end of the intestine to an artificial opening (stoma) in the abdomen to form an ileostomy.

Are there any risks?

All surgery carries a small risk of bleeding during or after the operation. During the operation, the surgeon will minimise any bleeding by sealing off the blood vessels affected. There is a very small chance that nearby structures in the abdomen could be damaged during surgery but this is a very rare occurrence.

There is a chance that the area where the two ends of bowel were joined could start to leak, allowing bowel contents to escape into the abdomen. This is usually treated with antibiotics, but a second operation may be needed to check the leaking portion.

All abdominal surgery carries the risk of strictures forming. These are areas of scar tissue that can narrow the intestines, leading to obstruction. If your child vomits green bile and has a swollen abdomen, they should be reviewed urgently by a doctor.

Every anaesthetic carries a risk of complications, but this is very small. Your child's anaesthetist is a very experienced doctor who is trained to deal with any complications.

Occasionally a further atresia may not be discovered during the operation. This may be suspected and investigated further if your child is not recovering as expected after the operation.

It can take a while after the operation for the bowel to start working properly so your child may need to be fed intravenously using total parenteral nutrition (TPN) for a while. This affects many children.

What happens after the operation?

Your baby will come back to recover either on the intensive care unit or our surgical ward. You will be able to visit as soon as they are settled. All babies are closely monitored after the operation, and so your baby will be connected to monitors to check their breathing, heart rate and oxygen levels. If your child needs help with breathing, they will be nursed on the intensive care unit and connected to a ventilator. They will also be given pain relief through the intravenous infusion (drip).

While your child's intestines recover and start to work, they may be fed through a tube into their veins (total parenteral nutrition or TPN). This will gradually be replaced by breast or bottled milk, given through the naso-gastric tube when your child is able to tolerate this. As your baby recovers, you will be able to feed them from the breast or bottle. Over time, the drips and monitors will be removed one by one.

The nurses on the ward will encourage you to look after your baby as much as you feel able while they are recovering. This can be daunting, especially while your baby is connected to drips and monitors, but it will become easier with time. If you are worried about caring for your baby, please talk to the nurses. You will be able to go home or be transferred back to your local hospital once your baby is feeding properly and gaining weight.

Most children stay in hospital for one to two weeks, but occasionally a longer stay is needed.

Your local health visitor or community paediatric nurse will visit you regularly. We will send you details of your outpatient appointment in the post, soon after you leave hospital.

You should call the hospital if:

- your child is in a lot of pain and pain relief does not seem to help
- your child is not keeping any fluids down or has signs of dehydration
- your child has a high temperature of 37.5°C or higher, a paracetamol does not bring it down
- the operation site is red or inflamed, and feels hotter than the surrounding skin
- there is any oozing from the operation site

What happens next?

The outlook depends on the amount of damage to the bowel. If your child had a large amount of bowel removed, they may need to stay on TPN for a longer period. Adhesions can form after any abdominal surgery, and can cause further problems such as blockage or pain. Occasionally the joined area becomes narrow stopping food passing through it easily. This may require another operation to widen it.

**If you have any questions, please call
Chameleon Ward on 020 7829 8818**