What is a splenectomy?
A splenectomy is an operation to remove the spleen. Splenectomy can often be carried out using keyhole surgery, but sometimes open surgery is needed.

What is the spleen and what does it do?
The spleen is found in the upper left-hand side of the body, behind the stomach, as shown in the diagram below:

The spleen has a number of functions:
- Acts as a filter for your blood, cleansing it of bacteria, viruses and other debris.
- It is part of your immune system, which means that it helps to fight infection.
When blood flows through the spleen, white blood cells recognise germs (bacteria and viruses) that might cause illness, and attack them to protect you from infection.

- It removes old and damaged red blood cells. Normal red blood cells have a lifespan of around 120 days, after which your spleen breaks them down. The red blood cell remains are then transported elsewhere in the body to be excreted or recycled to manufacture new blood cells.

**Why does my child need to have their spleen removed?**

There are several reasons why your child’s spleen may need to be removed. The most common reasons are listed below:

1. The spleen has become enlarged (called ‘splenomegaly’). When the spleen gets enlarged, it removes too many platelets from your blood, so it needs to be removed.
2. Some genetic (hereditary) conditions affect the shape of blood cells and make splenectomy necessary.
3. Other conditions (such as haemolytic anaemia) break down red blood cells and so removal of the spleen is necessary to prevent or reduce the need for blood transfusions.
4. In some cases the spleen may need to be removed after an accident has caused injury to it.

**Can you have a normal life without your spleen?**

Although the spleen performs many important functions, it is not essential to life. Other organs such as the liver and bone marrow are able to take over many of its jobs. However, people without their spleen are more vulnerable to all kinds of infection. There are ways of reducing these risks of infection, which are explained later in this leaflet.

**What does the operation involve?**

Most splenectomies are carried out using laparoscopic ‘keyhole surgery. The operation will be carried out under a general anaesthetic. Small ‘keyholes’ (about 5mm long each) are made in the abdominal (‘tummy’) wall. Through these holes, special instruments are used to free up the spleen and remove it completely. This is all visualised on a television screen by a miniature camera, which is inserted through one of the key-holes.

Sometimes the spleen is too large or damaged to be removed using keyhole surgery, and so the surgeon will need to use open surgery instead. The actual operation is the same. The only difference is the way in which the surgeon gets to the spleen to remove it. A cut (10-15cms long) is made underneath the ribs to remove the spleen. The recovery from open surgery is slower than from laparoscopic surgery, so the stay in hospital will be a little longer (about five days) and the recovery at home will be six to eight weeks. The chances of converting to open surgery are small.
What are the risks for a child without a spleen?

The main risk is from infection:
- The risk is highest in the two years following the removal of his/her spleen.
- The risk is highest in younger children, so we try to wait until your child is over five years of age before undertaking splenectomy. This is because many normal childhood diseases (such as pneumococcal infections, which can cause ear, throat and chest infections) occur in the first five years of life.

What are the complications from the operation itself?

Every operation and anaesthetic carries the risk of complications, although these are rare. Possible complications from splenectomy surgery include:
- Infection – to minimise this, your child will be given antibiotics during the operation. After the operation, please inform the surgical team if you notice that the wound site appears red or inflamed (you can see your GP after discharge).
- Bleeding – to minimise this risk, your child will have some blood tests taken before the operation, one of which tells us which blood group your child is. This means that if we need to, we can give a blood transfusion during the operation.
- Adhesions – this is scar tissue formation which can occur after any abdominal operation. It is a small but lifelong risk, which may result in an obstruction (‘blockage’) of the intestine. Symptoms of an adhesion obstruction include cramping abdominal pain and green (bile) vomit. The risk of adhesions are minimised by using keyhole surgery.
- Bruising in one or more of the keyhole incision sites.
- Protrusion of tissue through the wound.
- Anaesthetic – every anaesthetic carry’s a risk of complications, but this is very small. Your child’s anaesthetists will meet you before the operation to assess your child and discuss risks with you. After an anaesthetic, some children have a sore throat and some feel sick, and occasionally vomit, but medicines can be given to help this.
- Pain - Local anaesthetic will be used to stop pain from the ‘keyholes’. However, some children experience some discomfort around their abdominal muscles and shoulders from the gas that is used in laparoscopic surgery. This can be relieved with pain killers.

Is there an alternative to splenectomy?

If your child’s spleen has been damaged in an accident, leaving it in the body can be dangerous, due to the risk of bleeding.

If your child’s spleen has been damaged by his/her blood condition the only alternative may be regular blood transfusions. Your child’s haematology team will discuss this with you.
Preparation before admission to hospital

Unless your child’s splenectomy is being carried out as an emergency after an accident, your child will need the following preparation before surgery takes place:

Review by the surgical team

Your child will be reviewed by the surgical team, usually in our outpatient department. This is an opportunity for your child to be assessed to ensure they are ready for his/her splenectomy, for the operation to be explained to you, for you to ask questions and for any tests needed (for example, x-rays, scans or blood tests) to be arranged.

Vaccinations

Before splenectomy, it is important for your child to be up to date with all his/her vaccinations (also called immunizations). Details of these are included in the section of this leaflet “Reducing the risk of infection.”

Pre-operative Assessment Clinic

Your child will usually be invited to attend our preoperative assessment clinic one to two weeks before the surgery date. The purpose of the clinic is to ensure you and your child are fully informed about the planned surgery, to obtain your consent for the operation, to ensure your child’s hospital stay is as straightforward and seamless as possible, and to carry out any preoperative investigations, for example blood or urine testing.

Admission to hospital

You will be asked to bring your child to one of our children’s wards, usually on the morning of surgery. You will be seen by nursing staff, your doctors and anaesthetist. Some blood tests will also need to be taken if these were not taken at the preoperative assessment clinic. You will be able to stay with your child overnight if you wish, and you will be able to be present while your child goes to sleep for his/her operation, and in the recovery area where your child wakes up.

After the operation

- You will be able to be with your child as soon as they begin to wake in the recovery room.
- Local anaesthetic will be used to stop pain from the four ‘keyholes’. However, some children experience some discomfort around their abdominal (tummy) muscles and shoulders from the gas that is used in laparoscopic surgery. This can be relieved with pain killers.
- Painkillers may be given by mouth and also, if required, via a drip.
• Children are able to drink and eat normally after their operation but most will have a drip (intravenous fluids) for the first few hours or overnight until they are fully awake and feeling well enough to take all their drinks orally again.
• Most children are able to get out of bed within a few hours.
• Your child will be able to go home once taking all fluids orally, taking diet, and able to gently mobilise (usually two to four days).

Looking after your child at home

• Your child should rest at home for 2 weeks.
• It will take seven to fourteen days for your child to recover at home; children should be able to return to school after two weeks.
• Contact sports (such as rugby) should be avoided until your child is reviewed as an outpatient.
• As the stitches are dissolvable they do not need to be removed.
• Your child may have some discomfort and should regularly be given pain killers such as Paracetamol and/or Ibuprofen.
• Your child can have showers because the dressings are waterproof. However, baths are not allowed for five days.
• The dressings can be gently pulled off after five days (it is easiest and less painful to do this in the bath).
• If your child develops signs of wound infection (redness at the site, fever) you should contact your nurse specialist/GP.
• If your child’s pain is not helped by simple pain killers such as Paracetamol and/or Ibuprofen you should contact your nurse specialist/GP.
• You will be given an initial supply of antibiotics for your child before leaving hospital. The hospital’s discharge letter will advise your child’s GP of the need for repeat prescriptions, but it is important that you contact your GP surgery to arrange collection of the prescription to ensure you do not run out of the medication.
• You will also be given a card for your child stating ‘I have no functioning spleen’ which you should show to any medical or dental professionals who are dealing with your child and, when he/she is older, your child should carry this card with him/her at all times.

Follow up

You will receive an appointment to attend the outpatient department for surgical review approximately three months after your child’s operation. You will also receive further appointments for ongoing review by the haematology team.
Reducing the risk of infection
There are several different ways to help reduce the risk of infection after splenectomy:

1. **Regular antibiotics**
   To reduce the risk of infection your child will need to take oral antibiotics for the rest of his/her life. The oral antibiotic used is Penicillin, unless your child is allergic to this, in which case an alternative antibiotic will be prescribed.

2. **Vaccinations (also called ‘immunisations’) against infection**
   To prevent infections we recommend that your child has additional vaccinations including:
   - Pneumococcal vaccination – provides protection from a bacteria called ‘Streptococcus pneumonia’, which causes pneumonia. This vaccination will need to be given more than two weeks prior to surgery and repeated every five years; this can be arranged via your GP surgery.
   - Meningitis C (Men C) vaccination and Haemophilus (Hib) vaccination – these protect against infections such as epiglottitis (a severe infection of the throat) and meningitis. Both the Men C and Hib vaccinations are included in the usual childhood vaccination schedule but if your child missed his or her dose for any reason, this must be given at least two weeks prior to surgery.
   - If the spleen is removed in an emergency, the vaccinations above must be given two weeks after the splenectomy.
   - Flu vaccination – this should be given every year to protect against the flu, and can be obtained through your GP surgery.

3. **Recognising a minor infection and seeking advice**
   If you believe your child has signs of infection such as a high temperature, unexplained cough, sore throat, ear ache, abdominal pain or rash, contact your GP to arrange review immediately.

4. **Seeking medical advice if an animal bite occurs**
   Animal or human bites can lead to infection, so it is important that, if your child is bitten (including by a family pet) that you contact your GP, as antibiotics may be needed.

5. **Precautions when travelling**
   Before taking your child abroad it is important to be aware of any additional vaccinations needed and also, to arrange where applicable, for your child to have anti-malaria medication. Whilst travelling, your child should use insect repellent to avoid mosquito bites.
6. Letting people know your child has no spleen

It is useful for your child to carry a card which alerts others, in an emergency for example, that your child has no spleen. Some children wear a bracelet called a ‘MedicAlert’ bracelet. This bracelet has a telephone number contained within it, which doctors and nurses can use in an emergency to hear details of your child’s medical condition.

Chaperoning:

During your child’s hospital visits they will need to be examined to help diagnose and to plan care. Examination, which may take place before, during and after treatment, is performed by trained members of staff and will always be explained to you beforehand. A chaperone is a separate member of staff who is present during the examination. The role of the chaperone is to provide practical assistance with the examination and to provide support to the child, family member/carer and to the person examining.

For further information please contact:

The ward you were on: 01223 ................................

Your surgical nurse specialist: 01223 586973

Your haematology nurse specialist: 01223 216692

MedicAlert: www.medicalert.co.uk

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site.

For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Help with this leaflet:

If you would like this information in another language, large print or audio format, please ask the department to contact Patient Information: 01223 216032 or patient.information@addenbrookes.nhs.uk

Document history

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