Preventing Infection after Splenectomy or if you do not have a Working Spleen

If you do not have a spleen, or have a spleen that does not work well, you have an increased risk of developing some serious infections. The risk is reduced by immunisation, taking regular low-dose antibiotics, and taking full-strength antibiotics as soon as the first sign of infection develops.

What is the spleen?

The spleen is an organ in the upper left side of the tummy (abdomen). It helps to protect against infections. As blood passes through the spleen, special cells kill germs (bacteria) that may be present.

Your spleen may be removed (splenectomy) for various reasons. For example, because of an illness that affects the spleen, or if it is damaged by an injury. Also, the spleen may not work well in some diseases - for example, sickle cell disease, thalassaemia, and lymphomas.

What is the risk without a spleen?

You can normally cope with most infections without a spleen. The spleen is just one part of your defence (immune) system. Other parts of the immune system protect against most bacteria, viruses, and other germs.

However, you have an increased risk of developing some serious infections if you do not have a spleen, or have a spleen that does not work properly. This complication is called overwhelming post-splenectomy infection (OPSI). The risk is small and OPSI is uncommon, but very serious and is often fatal if it occurs.

Examples of serious infections that you are at increased risk from if you do not have a working spleen are:
What can I do to reduce the risk of infection?

Most infections that occur after splenectomy can be avoided through the following measures:

1. You should be immunised against the following:
   - **Pneumococcus.** This germ (bacterium) is a common cause of serious chest infection but can also lead to blood poisoning (septicaemia). A booster is normally advised every five years.
   - **Haemophilus influenzae type b (Hib).** This bacterium can cause chest infections and meningitis and can also lead to septicaemia. Immunisation against Hib is now routine for all children. But, many adults will not have had it, so you may still need it if you did not have it as a child.
   - **The bacterium called meningococcus.** This can cause meningitis and can also lead to septicaemia. Immunisation is with the meningococcal ACWY conjugate vaccine. There are various strains of meningococcus. The meningococcal ACWY conjugate vaccine protects against four strains - A, C, W and Y. A vaccine against group B meningitis should also be given.
   - **Flu (influenza).** The annual flu jab each autumn. The spleen is not needed to fight off the flu virus. However, some people with flu develop secondary chest infections from bacteria, which may lead to pneumonia. Therefore, it is best to prevent flu in the first place.
   - **Risk of infection abroad.** If you are travelling abroad, make sure that you have all the immunisations advised for the countries you visit. In particular, you should be immunised against **Group A meningococcus** if you are visiting certain hot counties where this is a risk. Also, see general information about travelling abroad below.
   - **Important note re children.** They should have all the other usual childhood immunisations apart from a variation in the meningococcal vaccine. That is, the meningococcal ACWY conjugate vaccine should be given instead of, or in addition to, the group C meningococcal vaccine, depending on the age of the child when the vaccines are given. Your doctor will advise exactly which meningococcal vaccine should be used and when. A vaccine against group B meningitis will also be given. See separate leaflet called **Immunisation - Usual UK Schedule** for more details, although group B vaccine is not routinely given to all children.

If you are to have a planned operation to remove your spleen, review your immunisation status with a doctor at least two weeks before surgery. In particular, the pneumococcal and ACWY conjugate meningococcal immunisations are best given at least two weeks before the spleen is removed.

However, it is never too late. If you had your spleen removed in the past or you have been diagnosed as having a non-working spleen, and are not immunised, get immunised as soon as possible.

**Note:** immunisation does not completely prevent the risk of infection. It only protects against certain types of infections.

2. You will probably be advised to take low-dose antibiotics every day for life
   This advice is usual for most people without a working spleen. If you take a small dose of an antibiotic each day, it will prevent some serious infections. Penicillin is the usual antibiotic prescribed. Most people do not have any side-effects from the daily low dose. If you are allergic to penicillin, other antibiotics are available.

3. Keep a course of full-strength broad-spectrum antibiotics handy
   Broad-spectrum antibiotics combat a wide range of bacteria. If you become ill with a high temperature (fever) or other signs of infection, you should start a course of full-strength, broad-spectrum antibiotics straightaway. This is in addition to taking regular low-dose penicillin (or similar). You should then obtain medical advice quickly.

   Most feverish illnesses that you have will be common coughs and colds due to viral infections. These are not serious, and will be cleared by your immune system. The antibiotic will, in hindsight, usually not have been necessary. However, some serious infections start with symptoms similar to a cold. They can then develop quickly if you do not have a working spleen. So, it is best to play safe and take a course of full-strength broad-spectrum antibiotics as soon as any feverish illness starts and see a doctor promptly.

- Pneumonia.
- Meningitis.
- Septicaemia.
- Malaria.
Travelling abroad?

If you do not have a working spleen and come into contact with germs causing certain diseases, you have an increased risk of developing these diseases. For example:

- Malaria.
- Meningitis.
- Babesiosis (an infection caused by a tick parasite, which leads to an illness similar to malaria).

**Note:** a parasite is a type of germ that needs to live on or in another living being (host).

It may be best to avoid any countries where these diseases are common. In particular, a severe form of malaria is a concern for people without a spleen. Do you really need to travel? If you do travel, make sure you are fully immunised. Also, obtain up-to-date information about protecting against the type of malaria in the country you are to visit. This will include taking tablets to prevent malaria, and using mosquito nets, insect repellents, etc. Take the antimalarial tablets exactly as advised for maximum protection. This usually includes starting the tablets before you travel. See separate leaflet *Advice for Travelling to Remote Locations*.

Also, take a course of broad-spectrum antibiotics with you. Contact your doctor before travelling. A change to a different regular antibiotic for the duration of the trip may also be advised, depending on which country you visit. This is because in some countries (for example, Spain) there is a high resistance to penicillin by some germs (bacteria).

**Other general advice**

*Animal and tick bites* carry a risk of infection getting into the bloodstream. Take a course of full-strength broad-spectrum antibiotics after a bite, no matter how trivial. Also, consult a doctor urgently if you become ill after any bite. To help prevent tick bites whilst out in the countryside, wear clothing to cover exposed skin, especially long trousers to cover your legs.

Consider carrying a card or wearing a special bracelet or necklet which says that you do not have a working spleen. This would alert a doctor to take rapid action if you are seriously ill and cannot tell him or her yourself.

**Further reading & references**

- Review of guidelines for the prevention and treatment of infections in patients with an absent or dysfunctional spleen; British Committee for Standards in Haematology (2011)
- Immunisation against infectious disease - the Green Book (latest edition); Public Health England

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