

Anaesthetics – risks and side effects

Nerve damage after a general anaesthetic

About this leaflet

This leaflet is about the risk of **nerve damage** which can happen following surgery with a general anaesthetic. It explains the different types of nerve damage, the causes and what can be done.

General anaesthetics are medicines that give a deep sleep-like state. They are essential for some operations and procedures. During a general anaesthetic you are unconscious and feel nothing.

You can read about different types of anaesthetics on the RCoA website:

rcoa.ac.uk/patientinfo/resources.

What are the different types of nerve damage?

The nervous system is used to carry signals from the brain and spinal cord to all parts of the body. Some nerves, known as **peripheral nerves**, are responsible for sensations and movement and extend all the way to toes and fingers.

Damage to the peripheral nerves is usually temporary, although rarely it can be permanent. It tends to happen in specific parts of the body, such as a hand or a leg. Peripheral nerves can recover from damage.

Damage to the spinal cord is often permanent and can lead to serious complications and disability. This is because the spinal cord cannot repair itself. Damage to the spinal cord during surgery is very rare.

About peripheral nerve damage

What does it feel like?

- Numbness or tingling, often in your fingers.
- Numbness or weakness in the top of your foot.
- Aching or sharp, shooting pains.
- Warm or cold sensations.

You might feel more than one of these at the same time.

How likely is it to happen?

Out of every 10,000 people

1–5 had temporary nerve damage	9,995 to 9,999 did not
1 had permanent nerve damage	9,999 did not

These numbers come from research studies. You can see where we got our numbers on our website: rcoa.ac.uk/patientinfo/risks/evidence.

How long does peripheral nerve damage last?

Minor nerve damage can recover within days and weeks. More serious nerve damage usually gets better on its own in about 3 months, but it can take up to a year to fully recover. Most people with peripheral damage took a year to recover.

What happens if I develop peripheral nerve damage after surgery?

If you are still in hospital, you should speak to the team looking after you.

If you notice symptoms when you get home and your symptoms do not improve after two weeks, you should see your GP or contact the hospital where you had the surgery.

The anaesthetist and surgeon may ask you to do some tests to understand where the damage is and what caused it. They may also refer you to a neurologist (a doctor who specialises in problems with nerves and the nervous system).

Treatment can include physiotherapy, exercise, pain relief or sometimes an operation to repair the nerve or relieve pressure on the nerve.

How does peripheral nerve damage happen?

There are a number of reasons why peripheral nerves can get damaged: the positioning of the patient, the equipment used during surgery and the surgery itself can stretch and compress the nerves.

Nerves can also be damaged if they do not receive enough oxygen. During surgery, the blood vessels carrying oxygen to the nerves can get damaged.

Normally, if you are aware of pressure on your nerves, you feel uncomfortable and change position to relieve the pressure. During a general anaesthetic you are unconscious. This means that you do not notice pressure and cannot change your position. This pressure can damage your nerves during the operation.

What can be done to prevent it?

Your surgical team will take steps to prevent nerve damage during surgery.

Positioning: during some operations you will be placed in certain positions that can stretch and compress the nerves.

What can be done to prevent it? Your surgical team will try and put you into positions that avoid stretching or pressure on the nerves as much as possible.

Tourniquets: tourniquets are tight bandages that your surgeon uses to reduce or stop bleeding. They can press on nerves and reduce the blood going to the nerves.

What can be done to prevent it? Your surgical team will limit how long they use tourniquets for and how tight they are.

Surgical equipment: your surgeon uses tools to allow them to see certain parts of the body during surgery. These tools can press on your nerves.

What can be done to prevent it? Your surgeon only uses tools that are necessary, and for as short a time as possible.

Direct injury: your surgeon can accidentally damage a nerve as they operate. This is more likely for certain operations.

What can be done to prevent it? If it is a significant risk for your surgery, your surgeon will talk to you about this risk and how they might try to reduce it.

Damage to blood vessels: sometimes blood vessels are damaged during surgery. This, in turn, can damage a nerve if it receives less blood and oxygen.

What can be done to prevent it? Your surgeon will take steps to reduce the risk of damage to blood vessels.

What increases the risk of peripheral nerve damage?

Patient factors

- Medical conditions (diabetes, smoking, high blood pressure, vascular disease, rheumatoid arthritis).
- Being male.
- Being older.
- Being very overweight or very thin.

The type of surgery and equipment used

More complicated operations that involve more instruments are more likely to damage nerves than simpler operations, for example:

- operations on the spine or brain
- cardiac or vascular operations (on the heart or major blood vessels)
- operations on the neck or parotid gland (a gland in the face)
- some kinds of breast operation
- operations in which a tourniquet is used to reduce bleeding.

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Positioning

You are more likely to get nerve damage if you have been placed in certain positions for your surgery:

- lying on your front
- lying on your side for some operations on the chest or kidney
- lying on your back with your legs raised
- with your arm in a certain position for some shoulder operations.

About damage to the spinal cord

Spinal cord damage is very rare. Unfortunately, compared with peripheral nerve damage, it is more likely to result in permanent serious disability. This is because the spinal cord cannot repair itself.

Compared with peripheral nerve damage, spinal cord damage is:

- much more rare
- more likely to lead to disability
- more likely to be permanent
- more often associated with pre-existing medical conditions.

How does it happen?

The main cause of damage is usually an inadequate blood supply and lack of oxygen to the spinal cord during surgery.

The following factors may cause lack of oxygen to the spinal cord:

- low blood pressure
- a blockage in the blood vessels
- compression or stretch of the blood vessels.

The anaesthetist will discuss with you if this is a risk for you based on the type of surgery that you are having and your medical condition. They will also discuss with you the things that they will do to reduce the risk.

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This leaflet has been produced by Leila Finikarides for the RCoA, in collaboration with patients, anaesthetists and patient representatives of the RCoA.

Disclaimer

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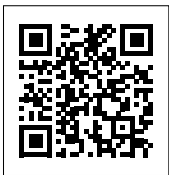
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We welcome suggestions to improve this leaflet.

Please complete this short survey at: surveymonkey.co.uk/r/testrisk. Or scan the QR code below.



If you have any general comments, please email: patientinformation@rcoa.ac.uk.

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