

Nerve blocks for surgery - All you need to know

Introduction

This leaflet has been prepared by the Anaesthetic Department at the Royal Devon & Exeter NHS Foundation Trust (RD&E) to explain the process of having a nerve block as part of your anaesthetic. This information supplements that given in our 'Patient Information: Anaesthesia – Your Questions Answered' leaflet.

This leaflet will explain:

- **What** a nerve block is
- **Why** you may be offered a nerve block
- **Different types** of nerve block
- **How** the nerve block is performed
- **Explain** events **during** your operation and what to do **afterwards**
- **Explain** the **risks** and **side effects**

'Anaesthesia' means 'loss of sensation'. This is essential in order for the surgeon to carry out any operation, without it being painful. We can achieve this with **general, regional, or local** anaesthesia. We can use a combination of these different types to provide the ideal anaesthetic, but all options will be discussed with you.

General anaesthesia means inducing an unconscious state using drugs.

Regional anaesthesia involves numbing only a part of your body, where you are having your operation. There are a number of different types of regional anaesthesia, depending on which area needs to be anaesthetised:

- **Spinal** – this involves placing a needle into your back, injecting anaesthetic into the fluid surrounding the spinal cord, and then removing the needle. It provides anaesthesia for the lower abdomen, pelvis and both legs for about 2-4 hours, but sometimes the effect can be present for up to 18 hours.

- **Epidural** – this is similar to a spinal anaesthetic, but instead of a needle being inserted and removed, an epidural temporarily leaves a fine plastic tube in your back, so that the anaesthetic can be infused and 'topped up' if needed.
- **Other areas / Peripheral nerve blocks** – areas such as the foot, lower leg, or arms can be anaesthetised by injecting local anaesthetic very close to the nerves which supply that part of your body. **This type of regional anaesthesia is the focus of this leaflet.**

Local anaesthesia can sometimes be used, even without general or regional anaesthesia, as the sole method of anaesthesia for an operation. It involves an injection under the skin to provide numbness in a small, localised area.

What is a peripheral nerve block?

This is an injection of local anaesthetic near to the nerves that go to the area of your operation. It makes the area feel numb. The injection can be used with or without a general anaesthetic.

- If a general anaesthetic is given, the nerve block is intended to help with pain relief afterwards.
- If there is no general anaesthetic, the nerve block is intended to make you numb enough to have the operation without feeling pain. This option is useful if you or your anaesthetist prefer to avoid a general anaesthetic. Sedation medicines can be used to keep you calm and relaxed.

Why have a nerve block and a general anaesthetic?

Nerve blocks are commonly used in addition to a general anaesthetic and they can provide excellent pain relief after surgery. This usually means that you need fewer pain-relieving medicines and therefore avoid unwanted side effects such as feeling sick, making nerve blocks particularly useful for day surgery procedures.

Why have a nerve block alone, without a general anaesthetic?

You may prefer to avoid a general anaesthetic, or your anaesthetist may be concerned that you are not fit enough to have a general anaesthetic. If your operation is suitable to be done without a general anaesthetic, there are a number of advantages to having a nerve block alone:

- Only the part of the body being operated on is numbed.
- Some of the more common side effects of general anaesthesia, such as nausea and vomiting, and sore throat, are less likely.
- You are likely to be able to be mobile more quickly after your operation.
- You are often able to leave hospital sooner.

However, there are some drawbacks. Some operations cannot be performed under nerve blocks alone. We cannot guarantee 100% success. Clearly if the nerve block is not working as well as planned, we will discuss further options. Your operation will not start unless you are comfortable and it is safe to do so.

Types of nerve blocks

There are many types of nerve blocks, each one aimed at different nerves or groups of nerves. Certain operations are particularly suitable for a nerve block. These include the following:

- Operations on the shoulder, arm or hand – injection performed in the neck, above or below the collarbone, in the armpit or lower down on the arm
- Operations on the lower leg and feet – injection performed in the groin, thigh, at the back of the knee or around the ankle

Your anaesthetist will tell you if there is a nerve block suitable for your specific operation. He/she will discuss the benefits and risks of having the procedure.

How is the nerve block performed?

You should follow the same advice about eating and drinking before your operation as if you were having a general anaesthetic. This is very important irrespective of whether or not you are having a general anaesthetic.

The nerve block will be performed in the anaesthetic room, which is next to the operating theatre. Routine safety check-in procedures will be completed on your arrival.

A thin plastic tube ('cannula') will be inserted into a vein, most commonly on the back of your hand or in your arm, through which medication and fluid can be administered.

Routine monitoring will be attached. This includes three stickers to monitor your heart trace, a blood pressure cuff around your upper arm and an oxygen probe on your finger.

Sedation medicines can be given through your cannula to help you relax during the procedure.

The skin around the injection site is cleaned. A small injection of local anaesthetic numbs the skin. The nerves are located using an ultrasound machine or a small machine that makes your arm or leg twitch by applying a very low and safe electric current to identify the correct nerves.

Using ultrasound we are able to see the nerves, the needle and the local anaesthetic we are injecting to surround the nerves. This ensures the best chance of a successful block.

Most people find the injection no worse than having a cannula inserted into a vein. Occasionally you may feel pins and needles or a sharp tingle as the injection is performed. Try to keep still and simply inform your anaesthetist. If the low, safe electric current is used, you may experience an unusual sensation, but this is rarely painful.

The part of your body that has been 'blocked' will soon start to feel warm, heavy and numb. Nerve blocks usually take between 20 and 40 minutes to work fully.

During the operation

If you are awake, or lightly sedated, you will be aware of other members of staff and noises around you. Operating theatres are busy areas, there will usually be four to eight people present, all with specific roles to help look after you.

Usually a screen is used, so you cannot see the operation being done, unless you want to.

A member of staff, and your anaesthetist, will always be close by. Please feel free to **bring a personal music player and headphones** with you.

Tourniquet pain – if your operation is being performed under nerve block alone and a tourniquet (tight band around the limb) is used, this may become uncomfortable despite a fully functioning nerve block if the operation is prolonged. If this occurs your anaesthetist can administer additional pain relieving medication.

If you are having sedation, you will be relaxed and possibly drowsy. You may be given some oxygen via a light plastic facemask. You may have memories of being in the operating theatre, although these may be patchy.

If you are also having a general anaesthetic you will not remember anything about being in the operating theatre.

After the operation

During the time the block is working (usually this is between 3 and 24 hours) you will not be able to use the affected limb properly. **It is very important that the numb area is protected from injury.** This may involve wearing a sling for blocks performed on the arm.

As the block wears off, you may experience pins and needles or tingling in the affected area – this is normal.

Aftercare

- If you are given a sling or support, keep your arm in it. You may not be fully aware of the position of your limb – it can be injured without you realising.
- Be especially careful around heat sources such as fires or radiators. Whilst the affected area is numb, you can burn yourself without feeling it.

- Avoid driving, using any machinery or domestic appliances.
- Nerve blocks on the lower limbs may make it more likely to fall, and develop pressure sores on the heels - ensure adequate support when mobilising.
- **It is important to start taking pain-relieving medicines before the nerve block wears off** to avoid experiencing sudden pain. Staff will give you more details about what and when to take them after your operation.
- If the nerve block has not fully worn off by 48-72 hours after the operation, you should contact the anaesthetic department via the hospital switchboard.

What are the risks of having a nerve block?

Peripheral nerve blocks are generally very safe. However, as with most procedures that we perform in hospitals, there are some risks it is important that you are aware of.

- **Partial effect / failure** – this is where the intended effects of the block do not occur. The block may only partially work or not work at all. If the nerve block is not working as well as planned, we will discuss further options. Your operation will not start unless you are comfortable and it is safe to do so.
 - If at any point you experience discomfort during your operation, inform your anaesthetist or surgeon who will administer further pain relieving medication.
- **Skin bruising / bleeding** – whenever we puncture the skin with a needle, bleeding can occur. Damage to blood vessels usually resolves with simple compression.
- **Nerve damage** – nerve damage after a peripheral nerve block is usually temporary and most patients make a full recovery within a few days or weeks. However, rarely, nerve damage is permanent.
 - The risk of long-term nerve damage is difficult to measure precisely. Studies show it happens in between 1 in 700 and 1 in 5,000 blocks.

- Temporary nerve damage is more common – in between 1 in 10 and 1 in 100 blocks. This accounts for the vast majority of nerve damage following a peripheral nerve block.
- *How does it feel to have nerve damage?* Some people have mild changes in sensation (feeling). There may be an area of numbness or ‘pins and needles’. Some patients describe strange sensations or pain in the area affected. Uncommonly there may be weakness in one or more muscles.
- It is important to know that there is a risk of nerve damage after *any* operation regardless of whether you have had a block. This can be due to the operation, the position you lie in or the use of a tourniquet (tight band on the arm or leg which prevents bleeding during the operation). Swelling around the operation site or a pre-existing medical condition, such as diabetes, may also contribute to nerve damage.
- **Spread of effect or damage to adjacent areas** – depending on where on the body the nerve block is being performed, structures nearby may be affected. For example, injections in the side of the neck may cause drooping of the eyelid on the side of the block (this does not affect your vision), flushing of the face, a hoarse voice and inability to deep breathe. Injection around the collar bone carries approximately a 1 in 1,000 chance of damage to the covering of the lung. Your anaesthetist will discuss the ‘block-specific’ risks with you.
- **Inadvertent injury to the affected area** – whilst numb, the affected part of your body is vulnerable to injury. As mentioned above, be careful around heat sources, avoid the use of machinery or domestic appliances, and follow instructions given to you surrounding the use of a sling.
- **Rare reactions** – these include an allergic reaction, seizures (fitting) or another life-threatening emergency. These are very rare complications and your anaesthetist will

manage any such event promptly. If you wish, your anaesthetist can tell you more about these reactions.

Where to get further information

Please ask the staff at the hospital as many questions as necessary before your operation, as many of the answers will be individual to you.

The Royal College of Anaesthetists’ website has lots of information for patients and carers.

This publication includes text taken from the Royal College of Anaesthetists’ (RCoA) leaflets ‘Nerve blocks for surgery on the shoulder, arm or hand, 2015’ and ‘Nerve damage associated with peripheral nerve block, 2017’ but the RCoA has not reviewed this as a whole.

www.rcoa.ac.uk/patients-and-relatives

Information specific to peripheral nerve blocks can be found at:

Nerve blocks for surgery on the shoulder, arm or hand

www.rcoa.ac.uk/document-store/nerve-blocks-surgery-the-shoulder-arm-or-hand

Nerve damage associated with peripheral nerve block

www.rcoa.ac.uk/document-store/nerve-damage-associated-peripheral-nerve-block

We hope you have found this leaflet useful, and look forward to looking after you in the future. If you have any suggestions as to how this leaflet could be improved please let us know, either via the Health Information Centre or in writing to:

Department of Anaesthesia

Royal Devon and Exeter Hospital (Wonford)
Barrack Road
Exeter
EX2 5DW

The Trust cannot accept any responsibility for the accuracy of the information given if the leaflet is not used by RD&E staff undertaking procedures at the RD&E hospitals.

© Royal Devon and Exeter NHS Foundation Trust

Designed by Graphics (Print & Design), RD&E