

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.

It is important that you read and understand this leaflet before the day of your operation, as it forms part of the process of consent. You will have an opportunity to ask questions and discuss potential alternatives when you meet your anaesthetist, if not before then on the same day.

You have been given this leaflet because nerve blocks are commonly offered to patients undergoing the type of operation you have been scheduled for, or because you have sustained injuries which may be helped by a nerve block. However, it does not mean that you are definitely going to have one; after further discussion with your anaesthetist and surgeon it may be decided that a nerve block is not necessary, or that you do not want one.

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
- **Events** during an operation and what to do **afterwards**
- **Risks** and **side effects**

'Anaesthesia' means 'loss of sensation'. This is essential for a surgeon to carry out an operation without it being painful. It can be achieved with **general, local, or regional** anaesthesia, or a combination of these. The appropriate options will be discussed with you.

General anaesthesia means inducing an unconscious state using drugs.

Local anaesthesia can be used, with or without general or regional anaesthesia. It involves an injection under the skin to provide numbness in a small, localised area. It is commonly used as the sole method of anaesthesia for procedures such as removing small skin cancers or moles.

Regional anaesthesia means numbing a part of your body to prevent pain, either for an operation or after an injury (such as broken ribs). 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 between 30 minutes and 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.

- **Peripheral nerve blocks** – areas such as the foot, leg, hand or arm can be anaesthetised by injecting local anaesthetic close to the nerves which supply that part of the body. Areas such as the chest, breast or back can also be numbed, to help with pain from rib or breastbone fractures, or after surgery. **Peripheral nerve blocks are the focus of this leaflet.**

What is a peripheral nerve block?

It is an injection of local anaesthetic near nerves and makes a specific area of the body feel numb. The injection can be used with or without a general anaesthetic if you are having it as part of an operation:

- 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 whilst awake, without feeling pain. This option is useful if you or your anaesthetist would prefer to avoid a general anaesthetic for a variety of reasons. Sedation medicines and/or music can often be used to ensure you feel calm and relaxed.

Alternatively, you may be offered a nerve block to help with pain from injuries such as a broken breastbone or ribs.

Why have a nerve block?

There are a number of advantages to having a nerve block:

- Only the part of the body being operated on is numbed.
- Some of the more common side effects of general anaesthesia, such as feeling sick and a sore throat, are less likely.
- Nerve blocks can provide excellent pain relief after surgery. This often means you need fewer pain-relieving medicines and can therefore minimise unwanted side effects, such as feeling sick. For these reasons, nerve blocks can be particularly useful for day surgery procedures.

- After your operation, you are likely to be mobile and leave hospital sooner than if you had a general anaesthetic.
- If you or your doctor are concerned that you are not fit enough to have a general anaesthetic, a nerve block may be offered.
- For some operations, nerve blocks reduce the chance of experiencing persistent long-term pain afterwards.
- For pain from injuries such as a broken breastbone or ribs, nerve blocks may not be 100% effective, but often help to minimise the side effects of strong pain killers. They can also help with deep breathing, coughing and reducing the chances of developing a chest infection.

However, there are potential drawbacks. Some operations cannot be performed under nerve block 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.

Do I have to have a block?

Choosing to have a block as part of your care is not mandatory. Although there are advantages, after you have read this leaflet and had a chance to weigh it up for yourself you may decide that you do not want one. If this is the case, please ask to discuss things in more detail and potential alternatives with your anaesthetist. Most operations are able to proceed without a block. However in some situations, not having a block may mean that you either can't have your operation at all (if you are not able to have a general anaesthetic as the only alternative, for medical reasons), or can't have your operation in certain parts of the trust (such as the community operating theatres at Exmouth). This is because some operations are often painful afterwards without a block, so the area would need to have overnight beds into which you could be admitted for strong painkillers if needed. If this applies to you then it is usually possible to re-schedule your operation for the main Wonford site, although you may need to wait longer for an operation date.

Types of nerve blocks

There are many types of nerve blocks, each one aimed at different nerves or groups of nerves. Certain situations 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.
- Operations on the chest, back, breasts, or to help cover the pain from injuries such as a broken breastbone or ribs.

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

How is a nerve block performed?

If you're having an operation with a nerve block alone, 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, even if you are not having a general anaesthetic.

Your nerve block will be performed by an Anaesthetist (a doctor specialising in anaesthesia) or an Anaesthesia Associate (a highly trained and skilled practitioner under the supervision of an Anaesthetist). It is most often done in theatres, but may be done in the emergency department or other areas of the hospital.

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. Sedation medicines may be given through this to help you relax during the procedure.

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

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. Occasionally a small machine is used which makes your arm or leg gently 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 a twitching 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.

If you are having the block for an operation

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 and 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.

A member of staff, your anaesthetist or anaesthesia associate, will always be close by. Please feel free to **bring a personal music player and headphones** with you. Alternatively many theatres have the facility to play music to help you feel relaxed.

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. It is quite common to dose off. 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.

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

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 that you need to be aware of:

- **Partial effect / failure** – this is where the intended effects of the block do not occur. The block may only partially work or (rarely) not 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, very 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. Rarely 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 or not.** 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 temporary 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. This is not normally a problem or distressing in any way. Injection around the collar bone, chest or back have a very small chance of damage to 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 about using a sling.

- **Rare reactions** – these include an allergic reaction, seizures (fitting) or another life-threatening emergency. They are very rare complications, and your anaesthetist is highly trained to manage any such event promptly. If you wish, your anaesthetist can tell you more about these reactions.

It is important to weigh these risks up against those for general anaesthesia, when deciding (with your anaesthetist) whether or not to have a nerve block instead of, or as well as a general anaesthetic. Neither type of anaesthetic is risk-free. Risks of general anaesthesia are detailed in the 'Patient Information: Anaesthesia – Your Questions Answered' leaflet.

Aftercare if you are going straight home

- 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, so without this it could be injured without you realising until the numbness wears off.
- Be especially careful around heat sources such as fires or radiators. Whilst the affected area is numb, you could burn yourself without feeling it.
- Avoid driving, using any machinery or domestic appliances.
- Nerve blocks on the lower limbs may make it more likely fall and develop pressure sores on your heels. Please ensure adequate support when mobilising.
- **It is important to start taking pain-relieving medicines before the nerve block wears off** to avoid experiencing sudden "rebound" 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 secretaries via the hospital switchboard, who will direct your call appropriately.

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:

www.rcoa.ac.uk/document-store/nerve-blocks-surgery-the-shoulder-arm-or-hand - '**Nerve blocks for surgery on the shoulder, arm or hand**'

www.rcoa.ac.uk/document-store/nerve-damage-associated-peripheral-nerve-block - '**Nerve damage associated with 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:

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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.

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