East Kent Hospitals University NHS Foundation Trust

Peripheral nerve blocks for upper limb (shoulder, arm, or hand) surgery

Information for patients from the Anaesthesia Department

Please read this leaflet alongside the **Information for patients having an operation** leaflet given to at your pre-assessment appointment.

It is important that you read and understand this leaflet before the day of your operation. You will have the chance to discuss other possible options with your anaesthetist either before or on the day of your operation.

You have been given this leaflet as nerve block can be an anaesthesia or pain relief option for the type of operation you are scheduled for.

This leaflet will explain:

1. What a nerve block is.
2. Why it may be needed.
3. The different types of nerve block.
4. What happens during a nerve block.
5. What the benefits of a nerve block are.
6. The risks of a nerve block.
7. What the alternatives to a nerve block are.
8. What to do after a nerve block.

What are the different types of anaesthesia?

Anaesthesia means “loss of sensation”, which is essential for the surgeon to perform the operation without pain. Anaesthesia can be either general, local, regional, or a combination.

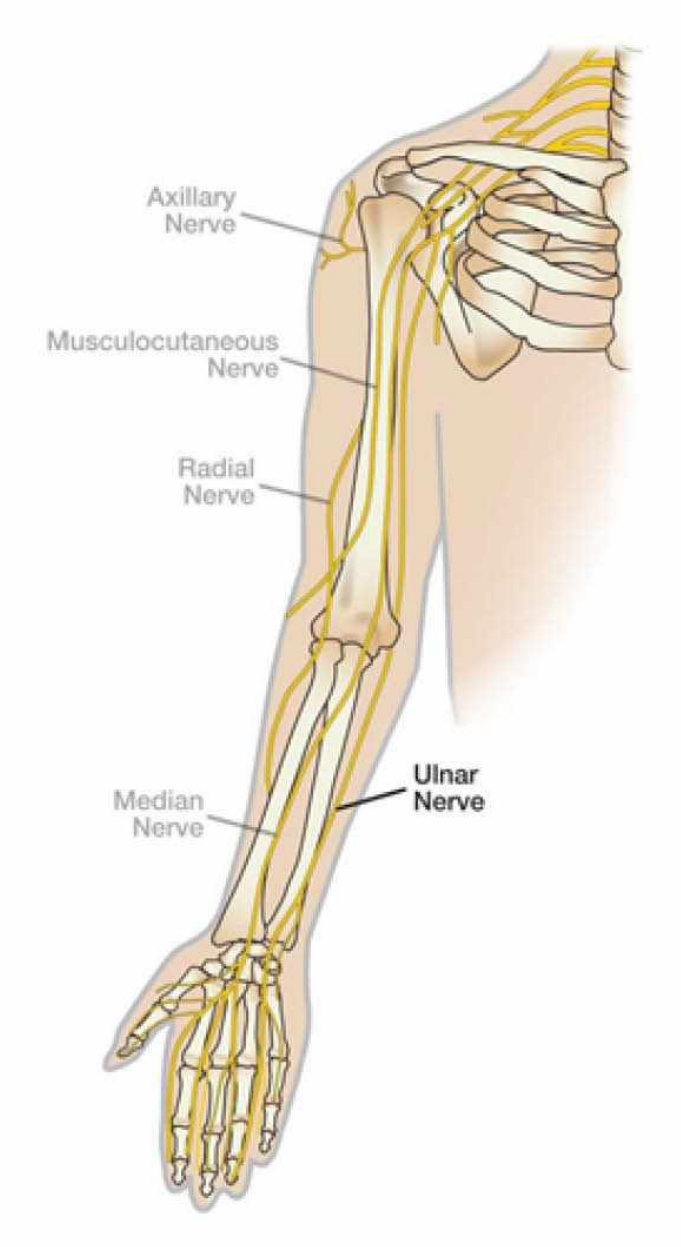
- All surgeries can be performed under **general anaesthetic** only. The patient is given certain medications to make them unconscious (asleep) during surgery.

- **Local anaesthesia** is injected directly under the skin, to numb a small part of the body. This is used for small procedures.
- **Regional anaesthesia** can be:
    - Spinal, for lower limb surgery: where a needle is put in the patient's back to inject the local anaesthetic around the spinal cord. The needle is then removed. The patient loses sensation and movement in the lower half of their body. The effect lasts from one to four hours.
    - An epidural is the same as spinal, but a fine plastic tube is passed through to help infuse or top up the local anaesthetic for longer period of times.
- For operations on upper or lower limbs, the anaesthetist may suggest a **peripheral nerve block.**

What is a peripheral nerve block?

A peripheral nerve block is where local anaesthetic is injected around a nerve or group of nerves, numbing a large part of the limb.

Peripheral nerves supply sensation to a small area of the skin and the tissue it covers. A local anaesthetic block of this nerve is used to treat pain in a specific area during or following an operation or injury.



Peripheral nerves in the upper limb (shoulder and arm)

Why is it needed?

- If a general anaesthetic or spinal anaesthetic is given, the nerve block is used to help with pain relief afterwards.
- If the nerve block is the main anaesthetic, it will make your limb numb enough to have the operation without feeling pain. It can only be done like this if there is a nerve block suitable for your operation.

Nerve block is one of the best methods of relieving pain in the first 12 to 24 hours after surgery. This depends on the site and on the type of medications used.

Sometimes a catheter (a very thin tube) can be passed through the needle and left in place near the nerve. The catheter can then be used to give the patient more local anaesthetic as needed. This can prolong the effects of your pain relief for a few days.

It is also useful if you wish to have sedation with the nerve block, to avoid a general anaesthetic. Sedation will help keep you calm and relaxed.

Where are the nerve blocks given?

For operations on the upper limb (shoulder, arm, or hand), injections can be given either:

- in the neck
- above or below the collarbone
- in the armpit; or
- lower down on the arm.

What happens during the nerve block?

- The nerve block is usually performed in the anaesthetic room.
- The skin around the injection site is cleaned.
- A cannula will be put in. A cannula is a plastic tube in your vein to give you fluids and medicines, as needed.
- Next routine monitoring is attached to you, this includes:
    - blood pressure
    - ECG; and
    - a finger probe to monitor your oxygen levels.
- Your doctor usually uses an ultrasound machine to see your nerves. They may also use a device, called a nerve stimulator. This device transmits electrical impulses of a low-intensity and short-duration for a defined response (muscle contraction or sensation). The response will help your doctor find your peripheral nerve or group of nerves.
- A small injection of local anaesthetic will be used to numb your skin. It will feel like a bee sting, which will go away immediately.

- If you are awake, you may feel some pressure:
    - as the anaesthetist finds the exact spot to inject; and
    - when the local anaesthetic is injected.
- After the injection, the target area will start to feel warm and tingly, before feeling numb and maybe heavy. The injection typically takes between 20 and 40 minutes to work.
- The doctor will check to make sure the block is working well before surgery starts.

What happens during the operation?

- A screen will be put up to separate you from the operation. You can have your own music to listen to using your headphones.
- If you have sedation, you will be relaxed and sleepy. The sedation may make you forget or only remember patchy events. You may be given a plastic transparent oxygen mask, to wear over your nose and mouth during the operation.
- There will be many staff members in the theatre. They may speak to you during your care. The anaesthetist and their assistant will be looking after you the whole time. You are allowed to ask questions, and speak to the staff.

What are the benefits of peripheral nerve blocks?

Benefits of a nerve block include the following.

- If the nerve block is the only anaesthetic used, you will avoid the common side effects of general anaesthesia. Side effects of general anaesthesia can include sickness and a sore throat.
- If you have serious medical conditions, it may help to avoid having general anaesthesia that may have higher risks in your case. A nerve block is a safer option. Serious medical conditions include lung or heart disease.
- Your recovery period will be shorter and you will have better pain relief.
- You can eat, drink, and move around quicker after your operation.
- You may not need to take stronger painkillers after your operation, such as codeine or morphine. This will help reduce your risk of the side effects linked with these medicines. The side effects include nausea (feeling sick), drowsiness, and constipation. If stronger painkillers are taken for longer periods, patients can become addicted, but this is rare.
- The benefits listed above may also lead to a shorter stay in hospital.

What are the risks of peripheral nerve blocks?

Nerve blocks are generally very safe. Not all of them have evidence of risk. However, all nerve blocks may cause the following.

- The nerve block does not provide enough pain relief. In around 1 in 100 patients (1%) the nerve block fails to work. If this happens, you will be given an alternative anaesthetic and / or another form of pain relief. Your operation will not proceed unless you are comfortable, and it is safe.
- A blood vessel may be punctured. This causes bleeding or blood collection (haematoma) around the injected site. This will be stopped by applying pressure to the area.
- The injection site may become infected.
- Nerve damage
    - One in 10 people (10%) have temporary numbness and tingling for more than 48 hours. Most (95 to 97%) will recover full feeling within four to six weeks; 99% will recover completely within a year.
    - Permanent nerve damage occurs on rare occasions. It is estimated this happens to around 1 in 700 to 1 in 5,000 patients. However, if you have serious nerve damage, there can be severe pain or permanent paralysis of the area.

      There is a risk of nerve damage with any surgery and anaesthetic, which can be linked to:

        - your position
        - the surgery itself
        - the tourniquet; or
        - any existing health issues, such as diabetes.
- The local anaesthetic can be accidentally injected into a blood vessel. This is very rare, but it can be a serious complication.
- You may have an allergic reaction to the local anaesthetic drug.
- There is a very rare risk of having a fit or other life-threatening symptom due to local anaesthetic toxicity.

You will be closely monitored for any reaction during and after the nerve block. If you do have a reaction, the medical team will quickly start to manage this.

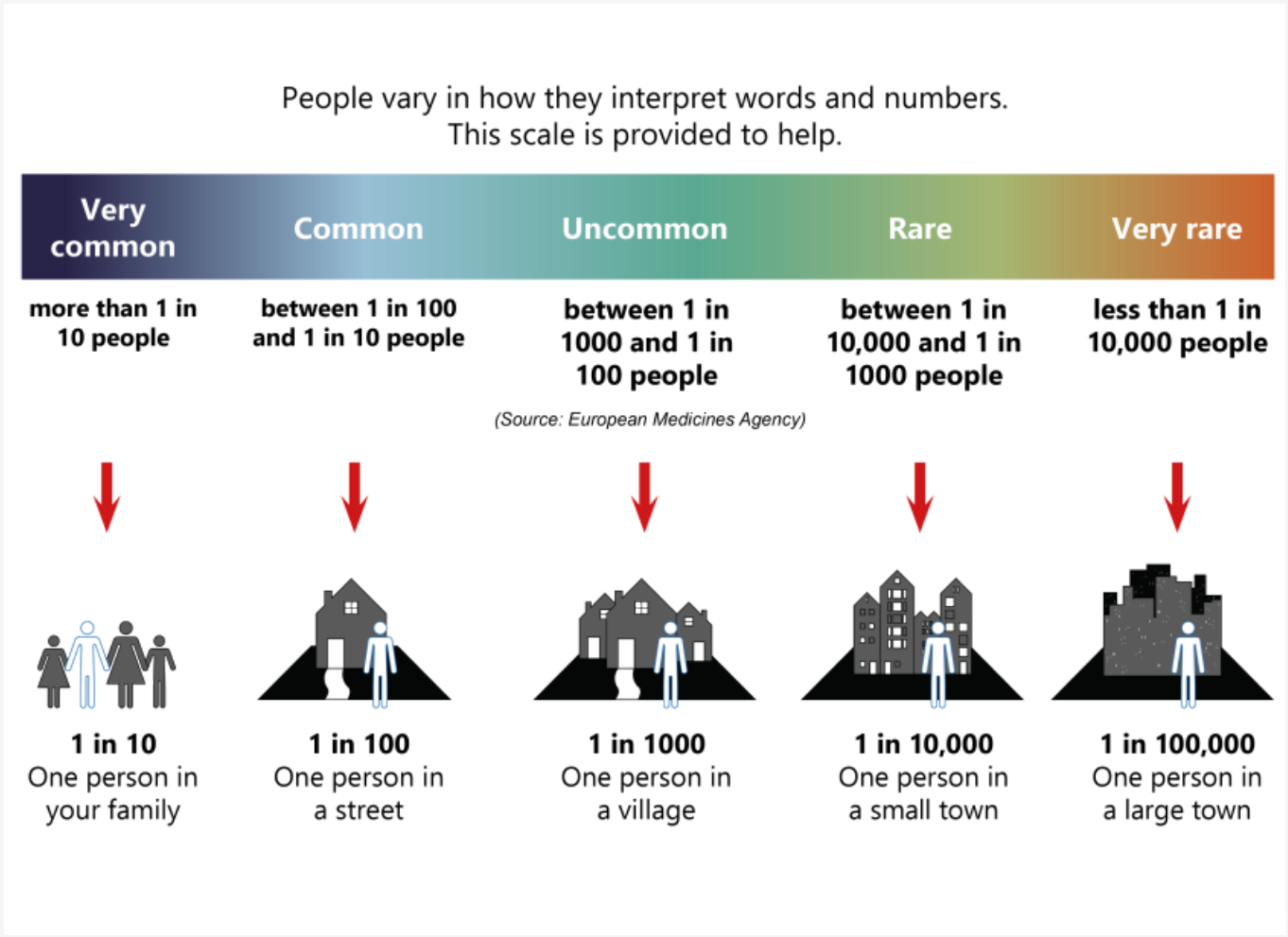
In addition to the above, there are some specific risks associated with different types of nerve blocks. These risks are caused by the spread of the local anaesthetic or damage to nearby tissue.

- With shoulder surgery patients may experience:
    - a droopy eye lid
    - changes in vision
    - a hoarse voice, and
    - difficulty in taking a deep breath.

  The above will usually resolve when the effects of the block wears off.

- There is a risk (less than 1 in 1000) of damage to the covering of the lung. This can lead to some degree of collapse of the lung and air collection around the lung. This may cause no symptoms at all or may need a tube (chest drain) to help the lung re-inflate.
- Risk of feeling the tourniquet pain. Your doctor will give you pain relief to help with this.

  A tourniquet is a device that is used to apply pressure to a limb or extremity to stop the flow of blood. It is used in surgery to prevent bleeding and for the surgeons to have a better view of the surgical field.



Are there any alternatives?

If appropriate, you will discuss other options with your anaesthetist, and decide what the safest option is for you. Other options may include general anaesthesia or local infiltration with local anaesthesia.

What do I need to do after my procedure?

- Protect your numb limb by keeping it still and in the correct position. For example, use a sling if you have had surgery on your arm.
- Do not put hot or cold items near your blocked limb or surgical site for the first 24 hours, until your sensations are back to normal.
- Do not drive or use any machinery until the block has completely worn off; this can be up to 24 hours.

- Before the nerve block wears off completely, it is important to start taking regular pain medication, as advised by your medical team. This will make sure you sustain any pain relief.
- If you have a peripheral nerve block catheter (tube) in place, it will be removed before you go home.
- If your numbness lasts longer than 48 hours or you have any of the side effects listed above, please contact the Anaesthetic Department in the hospital where you had the procedure, through the switchboard.
    - **Kent and Canterbury Hospital**, Canterbury
      Telephone: 01227 766877
    - **Queen Elizabeth the Queen Mother (QEQM) Hospital**, Margate
      Telephone: 01843 225544
    - **William Harvey Hospital**, Ashford
      Telephone: 01233 633331

Why do I need to sign a consent form?

All patients must give permission before they receive any type of medical treatment, test, or examination. Consent is usually given when you sign the consent form before your treatment, but we may ask you to give it verbally.

- You must give your consent voluntarily.
- The hospital must give you all the information you need to make a decision about your treatment. This is so you can give us informed consent. If you have not been given this information, or you have but you still have questions, please speak to a member of staff.
- You must be capable of giving consent. This means that you understand the information given to you and can make an informed decision.

When we ask you to give consent, please use this time to ask any questions you may still have. For more information, please go to the NHS Consent for Treatment web page (https://www.nhs.uk/conditions/consent-to-treatment/). Remember, you can withdraw your consent for treatment at any time.

Questions

If you have any questions about your anaesthetic, write them down to ask your anaesthetist on the day.

If you wish to speak to the anaesthetic team before the day of your surgery, please contact the pre-assessment team to arrange a consultation for you. Their telephone number is on your pre-assessment letter.

References

1. Royal College of Anaesthetists (RCOS). Peripheral nerve blocks. June 2023 (6th edition). (https://www.rcoa.ac.uk/patients/patient-information-resources/patient-information-leaflets-video-resources/peripheral-nerve-blocks)
2. Lemke E, Johnston DF, Behrens MB, et al. Neurological injury following peripheral nerve blocks: a narrative review of estimates of risks and the influence of ultrasound guidance. Regional Anesthesia

and Pain Medicine 2024; 49 (2): 122-132. (https://rapm.bmj.com/content/49/2/122.info)

3. Jeng CL, Torrillo TM, Rosenblatt, MA. Complications of peripheral nerve blocks. British Journal of Anaesthesia 2010; 105 (supplement 1): i97-i107. (https://www.bjanaesthesia.org/article/S0007-0912(17)33398-6/fulltext)

4. Enneking FK, Chan V, Greger J, et al. Lower-Extremity Peripheral Nerve Blockade: Essentials of Our Current Understanding. Regional Anesthesia and Pain Medicine 2005; 30 (1): 4-35. (https://rapm.bmj.com/content/30/1/4)

This leaflet has been produced with and for patients.

Please let us know:

- If you have any accessibility needs; this includes needing a hearing loop or wanting someone to come with you to your appointment.
- If you need an interpreter.
- If you need this information in another format (such as Braille, audio, large print or Easy Read).

You can let us know this by:

- Visiting the Trust web site (https://www.ekhuft.nhs.uk/ais).
- Calling the number at the top of your appointment letter.
- Adding this information to the Patient Portal (https://pp.ekhuft.nhs.uk/login).
- Telling a member of staff at your next appointment.

Any complaints, comments, concerns or compliments, please speak to a member of your healthcare team. Or contact the Patient Advice and Liaison Service on 01227 783145 or email (ekh-tr.pals@nhs.net).

Patients should not bring large sums of money or valuables into hospital. Please note that East Kent Hospitals accepts no responsibility for the loss or damage to personal property, unless the property has been handed into Trust staff for safe-keeping.

Further patient information leaflets are available via the East Kent Hospitals' web site (https://www.ekhuft.nhs.uk/patient-information).

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