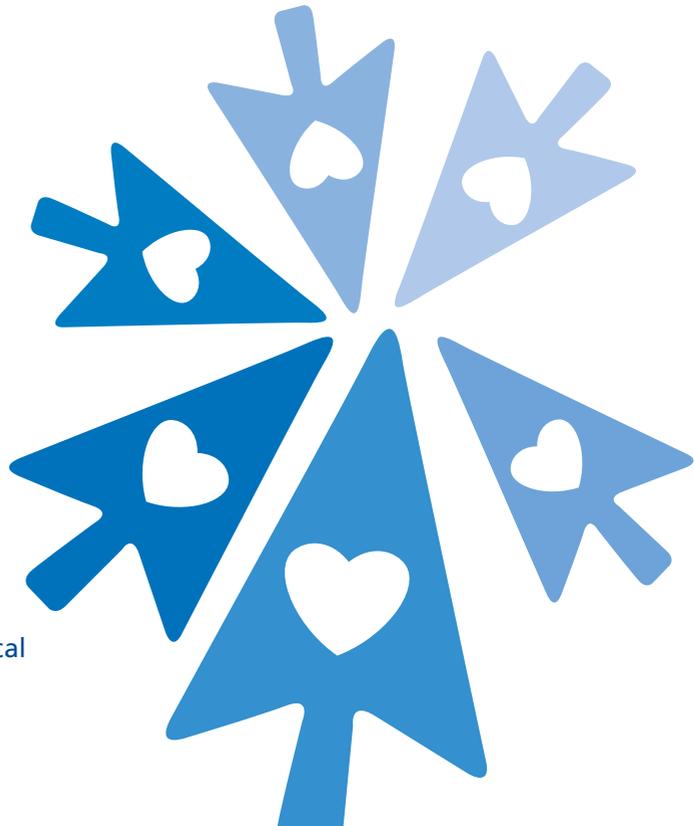


Patient information leaflet

All about your anaesthetic

4 Regional anaesthesia and associated risks



For patients having a surgical procedure at a Care UK independent diagnostic and treatment centre



This is the fourth in a series of patient information leaflets which will provide you with information about the different types of anaesthesia and what to expect during your admission to a treatment centre for your operation.

The first leaflet has given you some general information about the basic concepts of anaesthesia and how to prepare for your day of surgery.

This fourth leaflet in the series looks at **Regional Anaesthesia** in greater detail and also considers some of the risks associated with it.

The section which discusses the potential complications of regional anaesthesia and which attempts to explain the risk of their occurrence, is very important. You must read this leaflet carefully and understand that complications do occur, albeit very rarely for the most serious ones.

The blank page at the end of the leaflet is for you to make a note of anything you don't understand, or questions you would like to ask the anaesthetist when they come to see you after your admission to the Care UK NHS Treatment Centre.

- Every surgical patient will have an opportunity to discuss their anaesthetic with a consultant anaesthetist before surgery and have any questions answered.
- Some patients will see an anaesthetist consultant in the outpatient clinic and on the day of surgery. Others, just on the day of surgery.
- This will depend partly on your general health, your experience with previous anaesthesia and the operation you are having.
- Reading and understanding this leaflet, along with the answering of any questions that you have in regard to the proposed anaesthesia and methods of pain control, will provide the **informed consent for anaesthesia**.
- Your anaesthetist on the day of your surgery will ask you to confirm that you have read and understood the document, ask you if you have any questions or points that need clarifying and will then make a confirmation of this on the anaesthetic chart.

Having your anaesthetic

Regional anaesthesia

A regional anaesthetic involves techniques where loss of sensation and pain relief occur by blocking nerve function rather than by making the patient unconscious. General anaesthesia means that the whole body is asleep, whereas regional anaesthesia targets a particular part of the body; only where the operation is taking place.

A spinal anaesthetic is a type of regional called a central regional block because it blocks nerves at the level of the spinal cord, rendering a large portion of the lower half of the body numb and pain-free. Leaflet 3 – *'Spinal Anaesthesia and Associated Risks'* discusses this in greater detail.

This leaflet considers regional anaesthesia affecting smaller parts of the body, either through the blocking of one particular nerve or the blocking of several nerves grouped together (a plexus block.)

What is the role of regional anaesthesia?

In general terms, regional anaesthesia has two main roles:

- to provide excellent pain relief in the post-operative period in patients who are also having a general anaesthetic
- to provide anaesthesia and analgesia for a surgical procedure as the only technique used; thereby avoiding the use of general anaesthesia

Whichever reason for the use of a regional anaesthetic technique, an intravenous cannula will be placed into a vein in the back of the hand or along the forearm before the block is performed – this is to ensure safety for the procedure.

Cannulation

- This is the placement of a plastic intravenous cannula into a vein via a needle
- It is performed by the anaesthetist or qualified nursing practitioner in the anaesthetic room or the theatre admission area
- The usual method of starting (inducing) general anaesthesia is by an intravenous injection
- A cannula is also placed in the back of your hand or forearm if you are having a regional or spinal anaesthetic but not usually if it is a local anaesthetic only procedure
- Cannulation can worry some people but it is a very safe procedure

If it is something that worries you greatly, then you can ask to have local anaesthetic cream put on the back of your hand or side of forearm to numb the skin. This can be prescribed with the 'premeds' and ideally put on by the ward nurses about 45 minutes before the needle, although 30 minutes is probably enough time.

The regional anaesthetic procedure

- If you are having a regional anaesthetic procedure in addition to a general anaesthetic then the anaesthetist will discuss this with you before the operation
- Some anaesthetists may wish to perform the regional anaesthetic injection before getting you off to sleep, under local anaesthetic cover
- Others may induce the general anaesthesia first, then perform the block
- If you are having a regional anaesthetic as the only technique then you **may** also be able to decide whether you would prefer to:
 - be fully alert and awake for the procedure
 - be relaxed and sleepy (sedation)
 - have a general anaesthetic as well

Note: Sedation may also be something you can consider if you are having a local anaesthetic only technique – but you must talk to your surgeon

Sedation is the use of small amounts of anaesthetic or similar medications to produce increased relaxation and a 'sleep-like' state.

- This may not always be appropriate for your procedure or for your preparation for surgery (that is, you are not fasted appropriately), and so will need to be discussed with both your anaesthetist and surgeon before going to theatre
- Sedation can be helpful if you are very worried about being awake for your surgery but it is not routine and many patients are very happy to be awake and listen to music on an mp3 player, iPod or cassette player via headphones or earphones
- Sedation is not meant to be like a general anaesthetic and patients can become aware of their surroundings and hear theatre staff and other noises happening during their surgical procedure. This is quite normal and does not mean that something has gone wrong
- Like sedative 'premeds', the use of sedation in theatre will make you drowsier after the operation
- If you are planning to go home on the same day, then this may be delayed by one to two hours, but doesn't usually cause you to be admitted overnight

Please note – If you are having an operation involving the upper limb, then you may have been informed about having a type of regional anaesthetic called a 'brachial plexus block' instead of a general

anaesthetic. This block is suitable for operations on the shoulder, upper arm, elbow, forearm, wrist and hands.

If you have not received the patient information leaflet entitled '**Anaesthesia for shoulder, arm and hand surgery - Brachial plexus and brachial plexus blocks**' then please ask a member of the nursing staff when you next attend the outpatients department. Or please phone the CareUK treatment centre reception and ask to be put through to the outpatients department or nursing pre-assessment, where someone will be able to help you and arrange for a copy of the leaflet to be sent to you.

Having your anaesthetic

Local and regional anaesthesia

- The injection for local anaesthetic only procedures is usually undertaken by the surgeon in the operating room
 - You may not come into contact with an anaesthetist at all during your admission if you are having a local anaesthetic only operation
- Regional anaesthetic procedures are undertaken by the anaesthetist in the anaesthetic room or in a suitable, monitored area within the recovery room
- There may be a certain position you need to adopt to aid the insertion of the needle and the subsequent injections. For example, a spinal anaesthetic for joint surgery (see 'Spinal anaesthesia')

- Your anaesthetist will ask you to keep quite still while the injections are given because it is much harder to perform the injection correctly if a patient is moving and is likely to be more painful
- Local anaesthetics are usually injected into the skin and subcutaneous tissues at the site of the block before performing the procedure and these often feel sharp, stinging, burning and painful
- These local anaesthetics work very quickly and the subsequent injections are often not noticed by the patient. If the block takes a little longer than usual (for a variety of anatomical reasons) then you may ask for some more local anaesthetic to be given if the injection starts to feel sharp and painful
- The anaesthetist may use an ultrasound machine to visualize the anatomical structures around where the injection will occur
- They may also use an electrical nerve stimulator which induces a very mild electrical current in the tissues and which will produce some twitching of the affected part of the body to help locate the nerve or plexus of nerves safely
- After the regional anaesthetic injection is given, you may feel a warm, tingling feeling in the area of the block, as the anaesthetic starts to take effect
- Your operation will only proceed when you and your anaesthetist are sure that the proposed operative area is numb. The anaesthetist may ask you if you can move a particular limb or may use a cold spray on the skin to test the block area
- If no sedation is planned for your procedure, you will remain alert and aware of your surroundings. In the operating room, an operative drape is used as a screen, shielding the operating site, so you will not see the procedure – unless you want to in some circumstances only
- Your anaesthetist or anaesthetic assistant is always near to you in the operating room during the procedure and you can speak to them whenever you want to, especially if you have any worries or if things don't feel right

Risks associated with your anaesthetic

The risks associated with general and spinal anaesthesia have been documented and discussed in Leaflets 2 and 3 in the series. If you are also having a general anaesthetic then you should read and understand the risks documented in Leaflet 2. '*General anaesthesia and associated risks*'.

This leaflet will only discuss those risks specific to the non-spinal regional anaesthetic block.

1. Failure of the block

There is always a possibility that the injection of local anaesthetic may not produce the desired result of nerve blockade or may only block it partially. Anatomy can be slightly different between people, although this can be helped by using an ultrasound machine to visualize the nerve block area. Sometimes these blocks take longer to develop and may appear that there are not working straight away.

- If you are having a general anaesthetic as well as a regional anaesthetic block, a failed block may not become apparent until after the surgery when you are waking up
- In this case a further block may be offered to you in the recovery area or pain-relieving medication may be given to you in the form of tablets or intravenous injections

- If the regional anaesthetic is the only anaesthetic to be used, a failed block will become obvious in the anaesthetic room before going into theatre
 - Please be assured that no surgery will commence until you and the anaesthetist are happy that the block is working well
- In this case, the anaesthetist may want to wait a little longer to see if the block will work, they may offer you a further block of the same type, or they may offer you a general anaesthetic
 - All patients having a regional anaesthetic technique will be prepared for surgery in the same way as for general anaesthesia, in case of these events occurring

2. Infection

Any breach of the skin and subcutaneous tissues by a needle has the potential for causing an infection. This may range from a superficial skin infection with redness to a more serious blood infection. The latter is extremely unlikely with regional anaesthetic techniques but nevertheless, an aseptic technique is used with every regional anaesthetic injection

- The anaesthetist will clean their hands with alcohol gel and wear gloves

- The block area will be cleaned widely with an antiseptic, alcohol-based spray
- Sterile ultrasound gel is used if an ultrasound machine is to be utilized.

3. Nerve Damage

Any injection made with the intention of blocking a nerve or a group of nerves (a plexus) has the potential for causing nerve injury. This is as true for spinal anaesthesia as it is for other regional anaesthesia procedures but it is very rare.

- Modern techniques of regional anaesthesia using ultrasound machines and nerve stimulators help to significantly reduce this risk
- It is something the anaesthetist and their assistant will be considering during each injection and all injections are given slowly to ensure problems can be picked up quickly
- There are some safety advantages in performing the regional anaesthetic with the patient awake. They may be some symptoms of severe pain or pins and needles felt by the patient during the injection which may alert the anaesthetist that something is wrong

- If nerve damage does occur as a result of the injection, then this is very likely to be a temporary problem with residual numbness in the affected area lasting for a few days or weeks – then slowly resolving to normal

- In more serious cases, the numbness may be permanent and it may also involve some motor dysfunction – that is, muscles in the affected area may become weak or paralysed permanently
 - Please note that this is extremely rare with an occurrence of probably about 1:200,000 cases
 - Appropriate investigations and scans will be arranged and a referral will be made to a consultant neurologist if appropriate, based on the scan results

4. Bruising and Bleeding

There is a small risk of bruising and bleeding around the site of the local anaesthetic injection. Small needles are used for the local and regional anaesthesia procedures and the trauma is usually very minimal. There may be some areas that are more vascular (bloody) than others and patients on medication which thin the blood (such as aspirin) may have an increased risk of oozing after the injection. A sterile, waterproof

dressing will be used in this situation and kept on for 24 hours.

5. Pain on Injection

Occasionally, either the initial numbing local anaesthetic injection or the subsequent regional anaesthetic injection, can feel a bit sharp and stinging when it is performed. This is quite common. If it is very uncomfortable, more local anaesthetic can be requested, but this is rarely required.

6. Inadvertent intravenous injection

This occurs when some or all of the local anaesthetic medication that is to be injected around a nerve or a plexus of nerves, goes into a blood vessel instead.

- Using an ultrasound machine helps us to identify all the structures around a block site, including veins and arteries
- With a large volume injection, the anaesthetist will always aspirate the needle (pull back on the syringe) at regular intervals during the injection to ensure that no blood is coming back up the needle - this may indicate that the needle is in a blood vessel

- There are some areas of the body, such as the neck, where there are many large blood vessels and this increases the risk of this happening
- The consequences of a large volume injection into a blood vessel can be very serious with sudden onset of breathing difficulties, drop in blood pressure and pulse, loss of consciousness and even cardiac arrest
 - Please be assured that this outcome is extremely rare and can be treated immediately if it does occur
- Sometimes a smaller volume injected into the blood stream can produce the symptoms of tingling around the mouth and lips, blurred vision and a metallic taste in the mouth

7. Blocking other nerves

Occasionally, the local anaesthetic injection can spill over into adjacent areas and cause some other, unwanted nerve blocking effects. These are usually not dangerous but may result in areas of numbness that you hadn't expected.

- An example of this is a block in the abdominal wall for hernia surgery in the groin causing an inadvertent

block of the femoral nerve, which supplies the top part of the leg. After the operation the thigh may feel very numb and there may also be some difficulty with mobilizing

- These will of course wear off in time but it may take a few hours and has resulted in patients having to be admitted overnight when the plan had been for a day surgery discharge

8. Specific risks with brachial plexus blocks

There are some specific risks and complications associated with a 'Brachial Plexus Block', used in upper limb surgery from the shoulder down to the fingers.

These will be detailed in the accompanying leaflet '**Anaesthesia for shoulder, arm and hand surgery - Brachial plexus and brachial plexus blocks**'. If you are having upper limb surgery, then you should read this leaflet in conjunction with this one.



