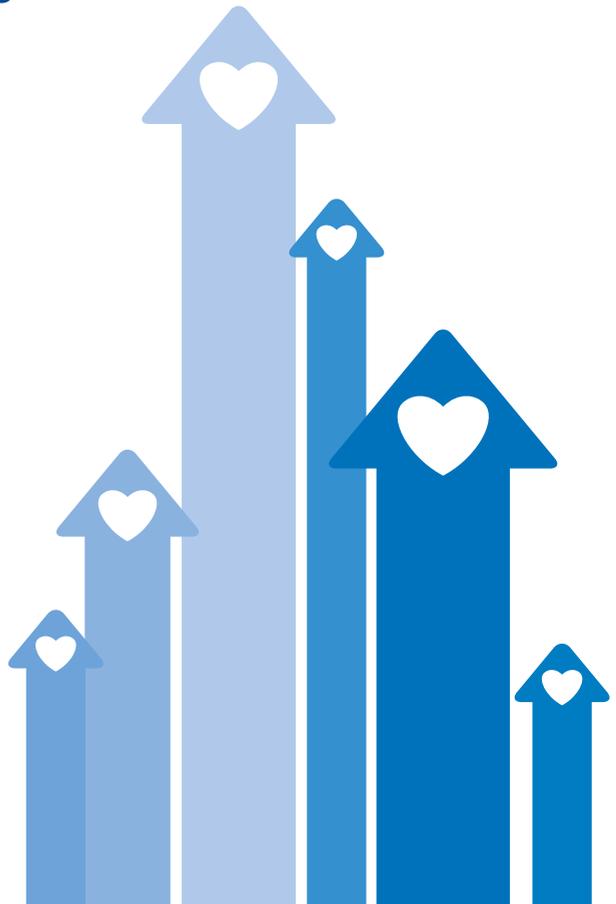


Patient information leaflet

All about your anaesthetic

3 Spinal anaesthesia and associated risks



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



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

The section which discusses the potential complications of 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

Spinal anaesthesia

A 'spinal' anaesthetic is a type of regional anaesthesia where the loss of sensation and pain relief occurs by blocking nerve function rather than by making the patient unconscious.

A spinal anaesthetic involves injecting a combination of local anaesthetic and strong pain killer into the cerebro-spinal fluid (CSF) – like a 'lumbar puncture' except that instead of taking fluid out, anaesthetic drugs are injected in.

The result is a central regional anaesthetic block whereby a group of spinal nerve roots are blocked on both sides of the body producing a dense numbness of both muscles and sensory nerves below the waist, lasting two to three hours.

This type of anaesthesia is suitable for operations on the lower limbs but also for prostate operations in men, some gynaecological procedures in women, such as vaginal hysterectomy and may be suitable for some hernia operations as well.

Note: Spinal anaesthesia is our preferred choice for anaesthesia for hip and knee replacement surgery and can be used in combination with:

- no sedation, whereby you remain fully conscious
- having some sedation during your operation, whereby you become relaxed and drowsy although remain conscious and partly aware of your surroundings and events in theatre

- occasionally in combination with a general anaesthetic

The spinal procedure and how sedated you would like to be will be discussed with your anaesthetist either in the outpatient clinic or on the ward on the day of your operation.

The Use of Sedation during 'Spinals'

The advantages of performing surgery with a spinal anaesthetic instead of a general anaesthetic are multiple and discussed later in this leaflet. Sedation can be offered alongside a spinal anaesthetic, particularly if you feel very worried about being awake and hearing noises in theatre. Sedation is not routine however and many patients are very happy to stay awake during the surgery 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. The anaesthetist can deepen the sedation, if appropriate, but any additional sedative medication will prolong the recovery time and may delay the start of physiotherapy, the consumption of food and drink after the surgery and ultimately the time of discharge home.

How Is a 'Spinal' performed?

- Spinal anaesthetics are administered via a thin needle in the low lumbar part of your spine. This procedure is performed by the anaesthetist in the anaesthetic room or special bay in the recovery area
- The patient is usually seated on the edge of a trolley with their feet supported on a stool, although sometimes with the patient lying on their side.
- There is a position we would like you to adopt to allow the spinal needle to pass easily. This involves curving your lower back, relaxing your shoulders and putting your chin on your chest. You will be shown how to do this before the procedure.
- Before any spinal is undertaken, we must place an intravenous cannula into a vein in the back of one of your hands or along your forearm.

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
- A cannula is 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 operation

- 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 spinal injection

- The procedure is performed with a strict aseptic technique to reduce the risk of introducing an infection which can have very serious complications
- It is performed after the skin and subcutaneous tissues have been anaesthetised with local anaesthesia which causes the area to be numbed greatly. Often patients do not feel the subsequent spinal injection
- The injection will make your legs start to feel warm and tingly almost straight away and over the next five to ten minutes will reduce the sensation in your legs and your ability to move them
- You will be repositioned immediately after the injection, lying onto your back, to allow the injection to work evenly
- No needle or catheter is left in the spine; just a sterile dressing which stays on for 24 hours

- You will only proceed into theatre when both you and the anaesthetist are happy that the spinal is working well.

Advantages of spinal anaesthesia

(over general anaesthesia)

- Faster recovery, reduced drowsiness and faster return to eating and drinking
- Improved pain control which will be immediate and can last up to 48 hours
- Results in less need for the strong pain relieving medication given orally or intravenously which can cause side-effects of increased sedation, reduced lung function, nausea, vomiting and constipation
- Faster engagement with physiotherapy and early mobilisation after hip or knee replacement – this is a crucial part of the enhanced recovery program and will reduce your time spent in hospital after the operation and improve your rehabilitation after joint surgery
- Reduced potential side-effects of a general anaesthetic including less risk of a chest infection post-op, less effect on the function of the heart and lungs, reduced incidence of nausea and vomiting, and less confusion after the operation which can be a problem in older people particularly

Note: Side-effects and complications of spinal anaesthesia will be discussed in the later section, 'Risks associated with your anaesthetic' and with your anaesthetist before surgery.

Preparation for surgery

Patients are prepared for theatre in the same way as if they are having a general anaesthetic because the surgery may involve some sedation and you may still need to have a general anaesthetic if:

- it has not been possible for your anaesthetist to site a spinal anaesthetic satisfactorily – uncommon, but spinals can be more difficult to perform in some patients, especially those with previous spinal surgery, chronic low back pain and the very obese
- the spinal has not worked satisfactorily after correct placement – even more unusual, but very occasionally the spinal injection, although given into the spinal fluid, does not produce the desired nerve blocking effect and the reason for this is usually unknown. This will be recognised quickly, before you are transferred into theatre and before surgery commences. Extra time will be allowed for the nerve block to develop but if there is still no effect on the legs, the anaesthetist will talk to you and decide whether to attempt the spinal again or proceed with a general anaesthetic
- the surgery is more complicated or prolonged than expected

Risks associated with your anaesthetic

Anaesthesia has made much of today's surgery possible, has brought great benefits for surgical patients and is performed millions of times per year throughout the world.

In modern times, serious problems directly related to anaesthesia are very uncommon. However, risk can never be removed completely and there is always a balance to be made between the benefits of anaesthesia (removal of pain and sensation) and the risks of the anaesthetic procedure and the drugs used to achieve it.

This balance will vary from person to person and it is difficult to separate the anaesthetic risks per se from those of the operative procedure itself and your general health.

Please note:

It is very important that you read this section of the leaflet carefully because you must understand the risks involved in anaesthesia before being able to consent to it.

Modern anaesthesia in western world countries involves modern equipment and medication, along with structured and robust training practices and examination, making it a very safe procedure in recent years.

Deaths directly caused by anaesthesia are very rare. In the UK, there are probably about five deaths for every one million anaesthetics given.

To understand a risk, you must know:

- how likely it is to happen
- how potentially serious it could be
- how it can be treated

In everyday life, people vary in the risks they are willing to take – you just have to look at how some people drive or the sports that they undertake!

Also, anaesthetists and patients may hold very different views about the importance of risk – after all, anaesthetists do this every day of their working week, but for many patients this may be their first experience of anaesthesia and so are naturally worried and want to know what could go wrong.

Factors increasing your risk as an individual include:

- whether you have any other medical illness
- personal factors such as smoking, a high alcohol intake or being very overweight
- having surgery which is complicated, long or performed in an emergency

NB: The Royal College of Anaesthetists website has more information in regard to the risks associated with having an anaesthetic:

www.rcoa.ac.uk/patientinfo

The risks of anaesthesia can be separated into **side-effects** and **complications**:

Side effects: secondary effects of drugs or treatments, often anticipated but sometimes unavoidable. Unpleasant side effects do not usually last long; some are best left to wear off and others can be treated. Examples include nausea and vomiting after pain-relieving medication.

Complications are unexpected and unwanted events due to a treatment. Examples would be an unexpected allergy to a drug or damage to your teeth caused by difficulty in placing a breathing tube.

Risks can be specific to general anaesthesia only (GA), regional anaesthesia only (RA) or can occur in both (see chart on next pages). In general terms, the more complicated the anaesthesia and surgery is, with the use of many drugs and drug combinations, the more chances there are of complications and side-effects.

Interpreting words and numbers

People vary in how they interpret words and numbers. The following scale can be used to put the occurrences of risks associated with anaesthesia into context with a numerical value:

Very Common:

1:10 (10^1) 1 in every 10

Common:

1:100 (10^2) 1 in every 100

Uncommon:

1:1000 (10^3) 1 in every 1000

Rare:

1:10,000 (10^4) 1 in 10 thousand

Very rare:

1: 100,000 (10^5) 1 in 100 thousand

Or: The risk of something happening to one in a 100 people means that **it will not happen** to 99 of them.

NB: The risks associated with general anaesthesia are documented in Leaflet 2.

Risks of spinal anaesthesia

Spinal anaesthesia is performed for many operations at the Care UK NHS Treatment Centres and so it is important to consider some of the potential complications which again will be discussed with you by your anaesthetist. These include:

I) Very Common and Common (1:10 to 100)

- **Low Blood Pressure** – It is normal for your blood pressure to be reduced as the spinal takes effect. It may make you feel light-headed and nauseated and is a higher risk in patients who normally have high blood pressure, on treatment. Intravenous fluids via the drip and medication given intravenously will help restore your normal blood pressure
- **Itching** – This can occur as a result of the use of morphine and morphine-like drugs in combination with local anaesthetics in the spinal injection. It can occur in the operating theatre or afterwards in recovery or the ward. Medication is available to help reduce the symptoms which is given intravenously
- **Difficulty passing urine** – You may find it difficult to empty your bladder normally for the duration of the spinal block but your bladder function will return to normal after the spinal wears off.
 - You may require a urinary catheter to be placed into your

bladder temporarily, either while the spinal is wearing off or as part of the surgical procedure

- The placement of a urinary catheter may be more common in patients who have a history of prostatic problems or urinary symptoms of retention, incontinence or recurrent urinary infection
- Modern local anaesthetic drugs and techniques reduce the incidence of urinary retention post-operatively after spinal anaesthesia
- **Pain during the injection** – pain felt in the back during the procedure can occur despite the local anaesthesia given and the anaesthetist will be able to use more if this discomfort is not tolerated. NOTE: You should tell your anaesthetist immediately if you feel pain or pins and needles in either of your legs or bottom area during the spinal procedure, as this may indicate that the needle is not quite in the right place and may result in irritation or damage to a spinal nerve if the needle is not repositioned

II) Uncommon (1:1000)

- **Failure to perform the spinal or the spinal not working satisfactorily** – a general anaesthetic may be required in this uncommon situation as previously discussed.

- **Headaches** – There are many causes of headache, including the anaesthetic, the operation, dehydration, anxiety, but most will get better within a few hours and treated with standard pain relieving medication.

- A severe headache can occur after a spinal anaesthetic, maybe not immediately but the next day, and if this does occur, your nurses should ask your anaesthetist or the anaesthetist on-call to come and see you.

- It may be caused by the spinal injection itself causing a 'post-dural puncture headache' (PDPH) but this is far more common with epidurals than with spinal anaesthetics, where very thin, pencil-point needles are being used.

- The risk of a PDPH is less than 1:500 but can be very severe, limit your ability to mobilise after your operation and be difficult to treat with standard medication.

- You may need special treatment such as an epidural to settle the headache but this will be decided by the anaesthetist when they come to review you.

- **Backache** – The risk of developing long-term problems with back pain following a spinal anaesthetic is very low and there is very little evidence linking spinals to worsening back pain, even in patients who have chronic low back symptoms of pain and immobility.

III) Rare and very rare (1: 10,000 to 100,000)

- **Nerve Damage** – This rare complication of spinal anaesthesia results in either a temporary loss of sensation with or without paraesthesia ('pins and needles') in either one or both legs, or part of the legs or the bottom area (risk approximately = 1:2000).

It can sometimes also cause muscle weakness in the legs. When these symptoms do occur, the vast majority of them will resolve over a period of a few days to weeks and usually result in a full recovery.

However, permanent sensory loss and loss of motor (muscle) function has been associated with spinal anaesthesia but this would be classed as a very rare risk (approximately = 1:20,000 for permanent sensory loss; 1:200,000 for permanent motor dysfunction).

It should be noted that sensory and motor loss of function can be associated with the surgical procedure itself and this would have been discussed with you as part of the surgical consent.

Factors increasing the risk of nerve damage due to spinal anaesthesia include:

- performing the procedure asleep so that the patient cannot report symptoms occurring in the lower limbs during the spinal procedure

- infection – a strict aseptic technique when performing the spinal reduces the risk of infection which can have serious complications such as meningitis, epidural abscess formation and nerve damage
- bleeding and haematoma formation – we would not be performing the spinal anaesthesia if the patient's blood did not clot properly or if their anti-coagulant medication had not been stopped appropriately. It should be noted that it is safe to perform spinal anaesthesia if the patient is taking low-dose (75mg) aspirin daily

- **Severe cardiovascular dysfunction / cardiac arrest** – a controlled, minimal drop in blood pressure is very common after a spinal injection but a more severe dysfunction of the heart as a consequence of the injection can occur - this would be classed as a very rare risk.

In this situation, a very significant drop in the blood pressure and a severe slowing of the pulse rate occurs which, if not treated quickly, may result in cardiac arrest.

If this were to occur, it would most likely happen very soon after the spinal injection is administered and appropriate treatment would be given immediately.

It is very unusual for this to happen in patients who do not have significant cardiovascular disease

already. In this situation, these patients would have been formally assessed in the outpatient clinic and would certainly have been deemed to be not suitable to have a spinal anaesthetic; they may well have been deemed not be suitable to have their anaesthetic at the treatment centre at all because they would probably require specialist post-operative facilities which are not possible in our clinical setting.

- **Severe Allergic Reaction / Anaphylaxis** - There is a very small risk [less than 1:10,000] of developing a severe allergic reaction to one of the medications injected as part of the spinal anaesthetic. A local anaesthetic agent and one or two strong painkilling drugs are the only drugs injected into the spinal fluid during a spinal anaesthetic. These medications are very low risk for the development of allergic complications. Local anaesthesia is also used in the skin prior to the spinal injection. The antiseptic agent used to clean the skin prior to performing the spinal anaesthetic, chlorhexidine in alcohol, does have the potential for causing an allergic reaction, albeit rarely. It is therefore important to inform the surgeon or the anaesthetist before going to theatre if you have suffered a skin reaction or a more serious allergic reaction to any skin preparation agent used during a previous surgical episode you may have undertaken.

