

Peripheral Nerve Block Explained

Comox Valley Hospital Department of Anesthesia 2022

What is a 'nerve block'?

A nerve block involves placing local anesthetic around a group of nerves to numb an area of the body- they are often performed for surgery on an arm or a leg.

There are many types of nerve blocks and each type is aimed at a different group of nerves. After the injection, your arm or leg will feel numb, heavy and immobile. You will feel no pain but will feel pushing or pulling as your arm or leg is moved for you.

A nerve block can be used on its own, instead of a general anesthetic or can be combined with sedation or general anesthetic.

During the injection (nerve block) you maybe:

- Fully awake
- Sedated

During the surgery you maybe:

- Fully awake
- Sedated
- Have a general anesthetic

What are the benefits of a nerve block?

- May be used to avoid a general anesthetic - this can be especially important if you have medical problems that put you at high risk for having a general anesthetic
- Less risk nausea and vomiting after surgery
- Better pain relief after surgery often lasting 12-48hrs
- Less need for strong pain medication during and after surgery
- Being able to leave hospital after surgery sooner

What are the risks of a nerve block?

As with all anesthetic techniques, **there is a possibility of unwanted side effects or complications with nerve block**. However, serious problems are uncommon with modern anesthetics. New equipment and techniques, training standards and more effective drugs have made it a much safer procedure.

Your anesthesiologist can discuss risks with you and help you make a decision on what type of anesthetic is best for you. Their recommendation is based on the type of surgery, your specific medical problems, as well as your preferences.

Common Complications and Side Effects:

- **Injection in the side of the neck often used for shoulder surgery:** hoarse voice, droopy eyelid, changes in your vision and possibly some shortness of breath. These side effects are common and go away as the block wears off.
- **Injection around the collar bone often used for arm surgery:** there is a rare risk: less than 1 in 1,000 risk (0.1%) of damage to the covering of the lung. This can lead to some degree of collapse of the lung – called a pneumothorax. Treatment depends on how big this is – it may cause no symptoms at all and just be noticed on a chest X-ray. If it is large, and you become short of breath, you may need a chest drain (a plastic tube) to help manage it.
- **All injection sites:** it is common to puncture a blood vessel – your anesthesiologist will put pressure over the area to stop any bleeding.

Uncommon and Rare Complications:

- There is a rare risk (0.03%) of having a seizure or another life-threatening event if local anesthetic is injected directly into the bloodstream. Your anesthesiologist will manage these promptly. They can tell you more about these very rare events.
- Nerve damage:
 - The risk of long-term nerve damage caused by a nerve block leading to altered or loss of sensation or muscle power is between 1 in 2,000 and 1 in 5,000 (0.05%-0.02%)
 - Very commonly, about 1 in 10 patients notices a prolonged patch of numbness or tingling in the area of the nerve block. These symptoms will resolve within six weeks in 95% of these patients, and within a year in 99 % of patients.
 - There is a risk of nerve damage after any operation regardless of the type of anesthetic technique used. This can be due to the operation, the position you lie in or the use of a tourniquet (a tight band on the upper arm, 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.

People vary in how they interpret words and numbers. This scale is provided to help.



How is a nerve block performed?

- You will have a needle to insert a thin plastic tube (**an IV**) into a vein in your hand or arm. This allows your anesthesiologist to give you fluids and any drugs you may need. You will also have **routine monitors** such as a blood pressure cuff applied.
- **A local anesthetic (numbing medicine) is injected first to numb the skin.** This **may sting** for a few seconds.
- Your anesthesiologist will use an **ultrasound** machine and/or a small machine that makes your arm twitch to locate the nerves.
- A needle is inserted through the numb area of skin and placed near the nerves and a further injection of local anesthetic is done.
- If you wish you **can have sedation medication** to make you feel relaxed or slightly drowsy prior to the injection.
- Most people find that the injection is **no more painful than having an IV inserted.**

What will it feel like when the nerve block starts to work?

Your arm will start to feel warm and tingly before finally feeling heavy and numb. The injection typically takes between 20 and 40 minutes to work. Your procedure will not start until your anesthesiologist is sure your nerve block is working. If the nerve block does not work fully, you will be offered more local anesthetic, additional pain relief or a general anesthetic.

What will it feel like when the surgery starts?

This depends on whether you are fully awake, have sedation or a general anesthetic in conjunction with your nerve block.

If you are fully awake you will notice:

- You will be positioned for the operation. You should tell your anesthesiologist if there is something that will make you more comfortable, such as an extra pillow or an armrest.
- You may be given oxygen to breathe, through a lightweight, clear plastic mask, to improve oxygen levels in your blood.
- You will be aware of the ‘hustle and bustle’ of the operating room, but you will be able to relax, with your anesthesiologist looking after you.
- You may listen to music during the operation.
- A screen will be positioned in a way that you cannot see the surgery being done to keep the area sterile.

If you have **sedation** during the operation, you will be relaxed and may be sleepy. You may snooze through the operation, or you may be awake during some or all of it. You may remember some, none or all of your time in the operating room - it all depends on the level of your sedation.

Minimal Sedation	Moderate Sedation	Deep Sedation
You will have a small amount of sedative medication. You will feel relaxed . You will be awake and talking normally. You will likely remember having your procedure.	You will have a moderate amount of sedative medication. You will feel very relaxed and sleepy . You will be sleepy but are able to talk normally and follow instructions. You may remember parts of your procedure.	You will have a higher dose of one or more sedating medications. You will sleep during most of your procedure. You will be sleeping and unlikely to talk. You are unlikely to remember much at all about your procedure.

If you have a **general anesthetic** you will not remember anything about the operation.

What will happen after the procedure?

During the time the block is working your arm or leg will **feel very heavy** and needs to be supported until your muscles start working again. You may need someone to help you carry out everyday tasks.

As the nerve block wears off you **may experience pins and needles** in your fingers. This is completely normal.

After having a nerve block you will not be fully aware where your arm or leg is – so it can be injured as a result. This numbness may commonly last up to 48 hours.

- **Take special care around heat sources**, such as fires, radiators, or stoves. You will not feel heat while your arm or leg is numb and you may burn yourself.
- **Avoid using any machinery** or domestic appliances. Injury is more likely while you have no sensation in your arm or leg.
- **Start taking your pain relief medicines before the block wears off**, as instructed by the hospital. This is important as the **pain can start quite suddenly**.

After having sedation you may not be able to think clearly and your judgment may be affected for up to 24hrs. During this time, you should:

- NOT be responsible for children
- NOT drive a vehicle or ride a bicycle
- NOT cook or use any machinery
- NOT drink alcohol
- NOT make any important decisions
- AVOID posting on social media/public forums.

If the feeling in your arm or leg has not returned to normal by 48hrs after your nerve block please call the hospital and ask to speak to the anesthesiologist on call.

Can I eat and drink before my nerve block?

You will be asked to **follow the same rules as if you were going to have a general anesthetic**. This is because it is occasionally necessary to change the anesthetic plan. The hospital will give you clear instructions about when to stop eating and drinking before your surgery.

Do I have to stay fully conscious?

Before the operation, you and your anesthesiologist will decide together whether you remain fully awake during the operation or would prefer to be sedated so that you are not so aware of the whole process or have a general anesthetic. The amount of sedation can be adjusted so that you are no longer anxious.

Will I see what is happening to me?

No. A screen is placed across your body at chest level to keep the surgical field sterile. This makes it so that you can't see the surgery.

Do I have a choice of anesthetic?

Yes. Your anesthesiologist will discuss choices with you.

There are uncommon reasons why you may not be able to have, or may be advised not to have, a nerve block. These include having:

- 'blood thinning drugs' that cannot be stopped or abnormalities of your blood clotting
- infection in the skin near the injection site or a high temperature
- certain lung conditions.

Can I refuse to have the nerve block?

Yes. If, following discussion with your anesthesiologist, you decide you do not want one or are still unhappy about having a nerve block, you can always say no.

Will I feel anything during the operation?

You will not feel pain during the operation but for some procedures **you may be aware of pressure** as the surgical team carry out their work. If you have a general anesthetic with your nerve block you will not be aware of anything during the procedure.

Further Questions:

Please discuss your questions when you meet your anaesthesiologist.

Disclaimer:

We try very hard to keep the information in this leaflet accurate and up-to-date, but we cannot guarantee this. We don't expect this general information to cover all the questions you might have or to deal with everything that might be important to you. You should discuss your choices and any worries you have with your medical team, using this leaflet as a guide. This leaflet on its own should not be treated as advice. It cannot be used for any commercial or business purpose.

References:

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