

Patient Education

Anesthesia for Total Joint Replacement Surgery

Your wishes as well as those of your surgeon, as well as your baseline medical condition, are important in selecting this type of anesthesia and pain relief you will receive.

What are the types of anesthesia?

There are two categories of anesthesia used in total joint surgery: general and regional. Your anesthesiologist, in consultation with your surgeon, will determine the best type of anesthesia for you. Your anesthesiologist will take your desires into consideration whenever possible. All options will be discussed on the day of surgery, during your preoperative interview with the anesthesiologist.

- **General anesthesia** is the loss of consciousness, pain sensation and protective airway responses.
- **Regional anesthesia** includes spinal blocks, epidural blocks or peripheral nerve blocks. If you have regional anesthesia, your anesthesiologist places medication near a cluster of nerves to numb only the area of your body that requires surgery. Spinal and epidural blocks involve interrupting sensation from the legs or abdomen by placing local anesthetic medication in or near the spinal canal.

Your anesthesiologist, after reviewing your individual situation, will discuss any available options with you. If there is more than one type of anesthetic procedure available, your preference should be discussed with your anesthesiologist for the most appropriate anesthetic plan to be made. The preferred form of anesthesia for joint surgery is regional anesthesia.

If I receive regional anesthesia, does that mean I am awake during the surgery?

You may remain awake, or you may be given a sedative. You do not see or feel the actual surgery take place. Your anesthesiologist, after reviewing your individual situation, will discuss the appropriate amount of sedation for you. The term “conscious sedation” is used to describe a semi-conscious state that allows patients to be comfortable during certain surgical procedures. Sedation can be light, moderate or deep. During deep sedation, you will sleep through the procedure with little or no memory of the procedure room. You might be sleeping until the medications wear off.

How is the epidural or spinal block performed?

A spinal or epidural block is given in the back. You will either be sitting up or lying on your side. Before the block is performed, your skin will be cleansed with an antiseptic (bacteria-killing) solution. The anesthesiologist will use local anesthesia to numb an area of your back. Another needle is then used to introduce either an anesthetic (in the case of a spinal) or a small plastic tube (in case of an epidural). The needle is removed after the anesthetic or catheter is in place. The medication given bathes the nerves and blocks out the pain. After your anesthesiologist has performed the spinal or epidural block, you will generally feel numbness and may notice that your legs will become weak to the point where you may not be able to move them. This is normal.

What are the choices for pain relief after surgery?

- **IV or oral pain medications:** Pain-relieving medications that are injected into a vein or taken by mouth will help to dull your pain but may not eliminate it completely. These medications are usually prescribed by your surgeon.
- **Local anesthesia:** Other pain-relieving medications may be injected into the surgical incision by your surgeon. These medications are local anesthetics. They provide numbness or loss of sensation in one specific area.
- **Peripheral nerve blocks:** Single injection or nerve catheters can be used to reduce the pain after surgery. Local anesthetics and other drugs are used for these procedures to reduce or “block” pain and other sensation over a wider region of the body.

How is a peripheral nerve block performed?

The block is administered at an appropriate location to provide pain relief (analgesia) after surgery. Before the block is performed, your skin will be cleansed with an antiseptic solution. The anesthesiologist will use local anesthesia to numb the area where the peripheral nerve block will be administered. A special needle or catheter is placed near the cluster of nerves that need to be numbed. The needle is used to temporarily obtain muscle twitches in the leg where surgery has occurred. Local anesthetic is used to bathe the nerves and block out pain. If you require pain control for more than 24 hours after surgery, your anesthesiologist can place a continuous catheter to allow the continuous delivery of pain-relieving medications. After the catheter is removed, sensations will return to normal, typically within a few hours.

Femoral nerve block

The femoral nerve provides sensation and motor functions to the front of the thigh and knee. This block is commonly used for procedures that cover this area (such as surgery of the knee or hip). To receive a femoral nerve block, you will be positioned lying on your back. Your anesthesiologist will clean your groin area with an antiseptic solution, and may inject some local anesthesia into the skin – this may cause a slight burning or pressure sensation. Your anesthesiologist will then carefully insert and advance a needle and inject local anesthesia to numb the nerves. A nerve stimulator is generally used to help your anesthesiologist determine the appropriate location to inject the local anesthetic. You may feel the muscles in your leg twitch. This is normal. Your anesthesiologist may insert a small, flexible catheter to allow for continuous injections or infusions of local anesthesia. The needle is removed and only the catheter remains at the end of the procedure if this is the case.

Risks and benefits of regional anesthesia

What are the benefits of a regional block?

Frequently, there is less nausea from regional blocks and patients generally awaken faster after regional blocks. Regional blocks also can be used to reduce the pain after surgery. Generally, regional nerve blocks and catheters will provide better pain control than intravenous or oral narcotics.

What are the risks of a regional anesthesia block?

Like any other medical procedure, there are risks associated with regional anesthesia. Complications or side effects can occur, even though you are monitored carefully and your anesthesiologist takes special precautions to avoid them. To help prevent a decrease in blood pressure, fluids may be administered intravenously. Although not common, a headache may develop following the block procedure. By holding as still as possible while the needle is placed, you may help to decrease the likelihood of a headache. The area where the nerve block was administered may be sore and tender for a few days. These discomforts, if they do occur, often disappear within a few days. If they do not disappear or become severe, additional treatments are available.

How common is nerve injury after a regional block?

Nerve injury after a regional block is a rare occurrence, which can occur anywhere from 1 in 4,000 blocks to 1 in 200,000 blocks depending on the type of block and specific risk factors. It can be related to direct needle injury of the nerve or to secondary complications like bleeding or infection. To prevent nerve injury, please inform your anesthesiologist if you experience any sharp or radiating pain during needle placement or injection. If you experience any new symptoms like tingling, numbness or motor dysfunction after a nerve block has already worn off, you should seek medical attention immediately because this can be a sign of secondary damage by hematoma or infection. Because recovery of nerve function depends on timely initiation of diagnosis and treatment, do not take any unexpected changes lightly.

Can the epidural or regional block catheter become infected?

Every time a foreign body like a needle or catheter is introduced into your body, there is the risk of infection. Bacteria can enter the body through the primary puncture or along the catheter site. The risk of infection increases over time but the chance of a serious infection leading to abscess formation and requiring surgical intervention or damage to the nerve secondary to an infection is extremely rare. Your catheter will be removed two days after surgery to minimize the risk of infection.