

# Total Knee Replacement

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Total knee replacement is one of the most common surgeries in the United States. A physician anesthesiologist will help you through the surgery. You will start with an assessment before your operation (preoperative assessment), and your anesthesiologist will work with you and your surgeon to choose the best type of anesthesia for the surgery. After the surgery, the anesthesiologist and surgeon will do their best to make sure you have as little pain as possible while also making sure your leg motion and walking ability are the best they can be.

## Before your Surgery

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### The Preoperative Assessment:

- Your anesthesiologist will go over your last food and fluid intake, allergies, anesthesia history, medications, and medical history.
  - You may have clear liquids up until 2 hours before surgery.
- Your anesthesiologist will examine your mouth & neck and listen to your heart and lungs.
- You will be given some preoperative medications to help with pain control after the surgery.
- You may have blood drawn or other tests such as an EKG to get you ready for surgery.

It is very important to answer all questions honestly and as completely as you can. The anesthesiologist uses this information to plan your care, so it is important to be as truthful as possible. If you take a lot of medications, have a long list of allergies, or have specific questions about your anesthesia care, it might be helpful to make a list and bring it with you on the day of your surgery.

During a total knee replacement, your knee joint is taken out and replaced with metal and plastic parts. This will be painful, and the pain can last for days to weeks. At the same time, it is important to get up and walk after surgery to help with recovery. It is also very important to start physical therapy. Pain can interfere with your mobility and delay your recovery, so your surgeon and anesthesiologist take pain relief very seriously.

Opioids (narcotics) have traditionally been used for pain relief after surgery. Unfortunately, opioids have many unwanted side effects including drowsiness, slowed breathing, constipation, nausea, vomiting, itching, and difficult urination in addition to

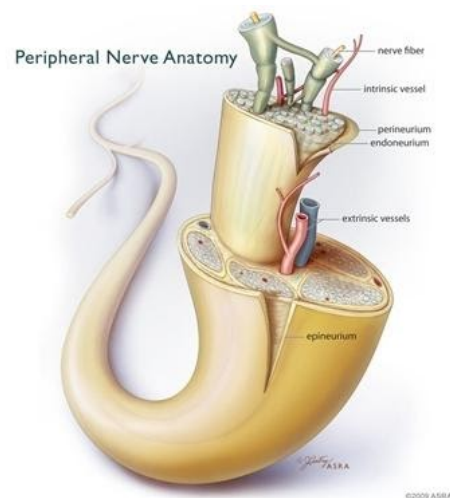


the potential for addiction. Other pain medicines may be mixed in with opioids (multimodal analgesia) in order to reduce unwanted side effects while still relieving pain after surgery.

As long as your anesthesiologist feels it is safe, you will receive two preoperative nerve blocks to help with pain after surgery and decrease the need for opioid pain medications given their potential side effects. To understand how nerve blocks work, it's helpful to what nerves are and what they do.

## What Are Nerves?

- Nerves are the body's communication system. They carry messages back and forth between the brain, spinal cord, and the rest of the body.
- The brain controls the body by sending signals along nerves to tell the body what to do. Signals carrying information about touch, taste, smell, and other sensations travel from the body to the brain.
- When part of your body is hurt, signals travel along nerves to the brain, and you feel pain.
- Nerves travel throughout the body in small bundles. You can think of nerves as the body's telephone lines or television cables.



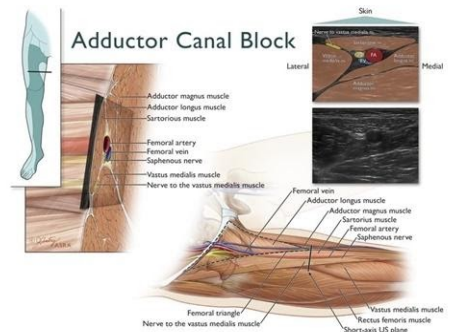
## What Is a Nerve Block?

- A nerve block is a way to block the signals that travel along nerves.
- Your anesthesiologist can inject local anesthetic (“numbing medications”) near the nerves. The medication blocks the signals and keeps the pain sensation from reaching the brain.
- Nerve blocks do not block 100% of the pain after surgery, but can greatly reduce the amount of pain and therefore the amount of pain medications you need afterwards.
- Your nerve blocks will be performed in the preoperative area.
- You will be given IV medications to improve your comfort during the nerve blocks.



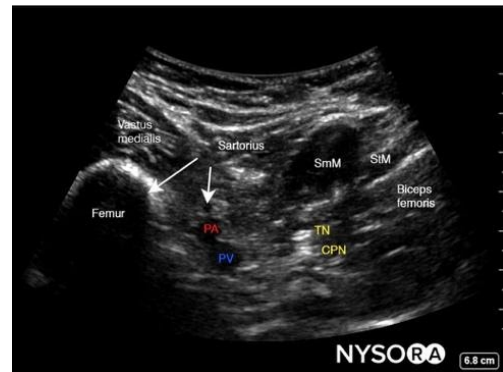
## Adductor Canal (Saphenous Nerve) Block

- For this block, you will be lying on your back with your leg opened out and your knee slightly bent.
- Your skin will be cleaned.
- An ultrasound will be used by your anesthesiologist to find the nerve as it travels through your thigh.
- The block needle will then be placed near the nerve. Ultrasound is used to make sure the needle is in the right place. Local anesthetic will then be injected. Adductor canal blocks are much less likely to cause muscle weakness after surgery than other types of blocks.



## IPACK (Interspace between the popliteal artery and capsule of the knee) block

- Your leg will remain in the same position for this block as it was for the adductor canal block.
- Your anesthesiologist will find the correct location using ultrasound and inject local anesthetic.
- It takes 15-20 minutes for the full effect of the local anesthetic.
- The numbing medication can last for up to 24 hours or more depending upon how quickly your body uses the medication.



# Anesthesia for the Operating Room

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## Spinal Anesthesia

Most likely, you will receive a spinal block for your knee replacement. With a spinal block, your anesthesiologist puts numbing medicine into the spinal fluid but not the spine itself. The procedure will be performed in the operating room where you will be placed on monitors, positioned sitting up, and have your back cleaned. Next, your anesthesiologist will place a drape on you and feel your back for the best spot for the block. Then, your skin will be numbed with local anesthetic. You will be asked to arch your back like an angry cat to make it easier to place the small spinal needle in the right place. Try not to move during the block. When the needle is in the right spot, local anesthetic will be injected. The needle will be removed, and the lower part of your body will go numb within a few minutes.

You don't have to stay awake for the surgery when you have a spinal block. After the block is in place, the anesthesiologist can give you medicine to make you sleepy. The level of sedation can range from mild, where you are relaxed but aware of your surroundings, to deep, where you are completely asleep but breathing on your own without the need for a breathing tube. You and your anesthesiologist can discuss how much or how little sedation you want. You can always ask for more if you need it. Regardless of the level of sedation, your anesthesia care team will monitor you throughout the surgery.

In addition to numbing your legs during the surgery, a spinal block may help with pain relief long after surgery although the numbness usually wears off after 2 or 3 hours. Spinal anesthesia has been shown to have less postoperative nausea and vomiting than general anesthesia. In addition, there is data to support a slight decreased incidence of blood clots with spinal anesthesia after joint replacement surgery.

## General Anesthesia

General anesthesia makes you completely unconscious for the surgery. Even though we call it "sleep", general anesthesia is really like a coma. In the OR, you will move from the transport bed to the operating table and monitors will be put on. Your anesthesia care team (Anesthesiologist and CRNA) will record your vital signs before you go to sleep. You will be given a mask with oxygen to breathe. Then we will give you medicine through your IV to begin the anesthesia and will insert a breathing device after you are unconscious. We will continue to give you anesthetic medicine, either through the IV or in the gas you breathe, the whole time you are in surgery. When the surgery is over, you will stop receiving anesthesia and you will wake up. Your anesthesia care team will carefully monitor you throughout the entire surgery.



# After your Surgery

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After surgery, you will be taken to the recovery area. The anesthesia care team will tell the recovery nurse how the surgery went, and will then leave you in his or her care. The nurse will monitor you in the recovery area to make sure there are no problems. He or she can call an anesthesiologist anytime if needed. If you had a nerve block or spinal your legs may still be weak or numb right after surgery until the numbing medication wears off. Your anesthesiologist may continue to be involved in your care after surgery to help with pain management.

