

# Shoulder Surgery

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The shoulder is the body's most flexible joint and allows you to move your arm in all directions. Unfortunately, this also makes the shoulder particularly vulnerable to injury. Common shoulder injuries include tears in the rotator cuff muscles (muscles around the shoulder), partial or complete dislocations of the shoulder socket, and collarbone fractures. In severe cases of osteoarthritis (a form of arthritis affecting the cartilage of your joints) and in situations of severe injury, such as fracture of the upper arm bone (humerus), a partial or total surgical replacement of the shoulder joint is necessary. Hundreds of thousands of these procedures, known as shoulder arthroplasty, have been performed for osteoarthritis since the early 2000s, and this number seems to be on the rise.

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 you are ready to start physical therapy and rehabilitation.

## 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 your 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.



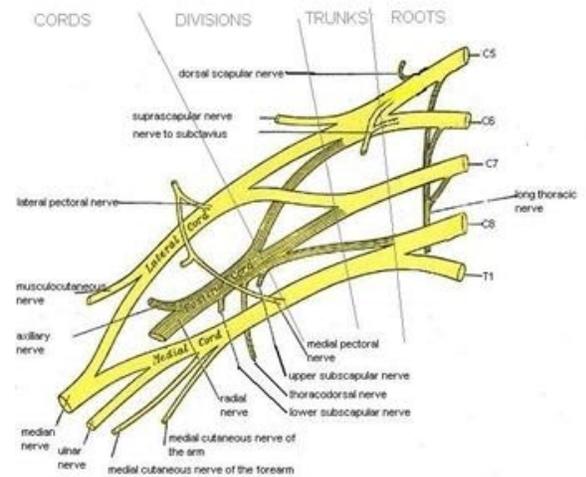
Many shoulder injuries can be addressed through less invasive shoulder procedures done through a small camera placed through very small incisions. This procedure is known as shoulder arthroscopy and is often used to treat a frozen or dislocated shoulder, rotator cuff injuries, or a fracture of the shoulder blade (scapula). Most of these surgeries are performed on an outpatient basis. Pain after shoulder surgery is completely “normal” and to be expected. Fortunately, you have a number of options for pain relief. Your physicians will likely use different types of pain medicines around the clock, known as multimodal analgesia, to provide ongoing pain relief not only during the procedure, but also through your recovery.

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 given alongside 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 and needed, you will receive a preoperative nerve block 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 know 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.
- The nerves that supply the shoulder are part of the brachial plexus (see picture).

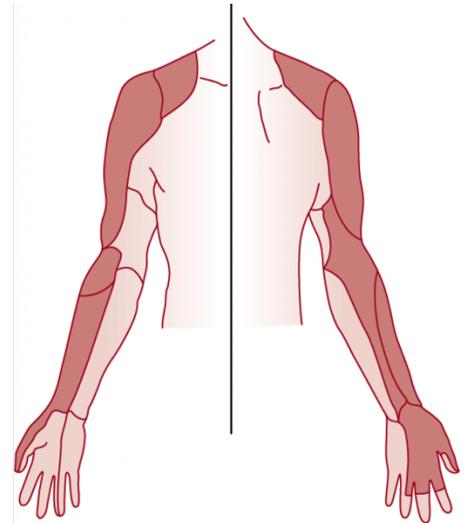


## What Is a Nerve Block?

- 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.
- Nerve blocks have several advantages in shoulder surgery. Namely, nerve blocks provide better pain relief after surgery than the combination of general anesthesia and systemic pain-relieving medications such as opioids that are given after surgery. This is because the pain relief provided by nerve blocks is much more specific to the location of the pain.
- Your nerve block will be performed in the preoperative area.
- You will be given IV medications to improve your comfort during the nerve block.

## Interscalene Block

- This block is used to numb the shoulder and arm and is the most common type of nerve block used for shoulder surgeries.
- This block can provide up to 72 hours of pain relief in the shaded area.
- For this block, you will lie on your back with your back slightly elevated and your head turned away from the shoulder that will be receiving the block. Alternatively, you may be asked to lie on your side to receive the block.
- Your skin will be cleaned.
- An ultrasound will be used by your anesthesiologist to find the nerve as it travels through your neck.
- The block needle will then be placed near the nerves. If you feel any sensation or pain in your arm, please let your anesthesiologist know, so that the needle may be repositioned. Ultrasound is used to make sure the needle is in the right place. Local anesthetic will then be injected.
- This block will cause numbness and weakness in the hand, arm, and shoulder. Be careful!



# Anesthesia for the Operating Room

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## 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. The breathing device will be removed. Your anesthesia care team will carefully monitor you throughout the entire surgery.

Common side effects after general anesthesia include nausea, vomiting, sore throat, or hoarseness. More rare side effects can include injury to the teeth, tongue, or lips, nerve injury, problems with the heart or lungs, allergic reactions to medications, seizure, stroke, and death.

## 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, your arm, shoulder, and hand 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.

