



the Department of Anesthesiology at Penn State Milton S. Hershey Medical Center—a team of skilled physicians, nurses, and technicians—provides comprehensive anesthesia care for surgical patients. While ensuring comfort and safety during your operation, our team is dedicated to providing pain management after your surgery. Each physician has a personal commitment to every patient during the stressful periods before and after surgery.

before Surgery

Patients scheduled for inpatient or outpatient surgery are seen quickly and conveniently in our pre-anesthesia clinic, located on the first floor of the hospital. For many patients, a health screening questionnaire may be the only information necessary prior to surgery. The pre-anesthesia clinic provides services that include a complete history and physical examination, EKG, laboratory studies, and chest x-ray. Consultation with an anesthesiologist at least two weeks prior to the scheduled surgery date is recommended for patients with complex medical problems. This is to provide time to optimize your medical condition.

During this consultation, your anesthesiologist will help you decide which type of anesthesia and which specific techniques and medications will be most appropriate. Your surgeon and anesthesiologist will review your medical records, consult with each other, and may order certain lab tests to ensure you are in the best possible condition before surgery. You will also have the opportunity to discuss your options available for pain control after your surgery. A nurse practitioner or physician's assistant also will conduct a physical exam.

Because of the level of detail required to completely prepare some patients for surgery, visits are scheduled by appointment and usually require approximately one to one and a half hours. Please bring an updated list of medications with drug, dosage, and time of day they are taken (include insulin, inhalers, eye drops, herbal supplements, and over-the-counter pain medications); past surgeries/medical problems and the results of any medical and cardiac testing completed within the last five years; allergies; names and telephone numbers of referring and primary physicians; and insurance cards.

the Day of Surgery

An admissions representative will contact you the day before surgery to confirm your scheduled time of arrival to the Medical Center. You will be asked to arrive a few hours before the time of your surgery. Upon arrival, you should register at Admissions. You will be escorted to the Same Day Unit, where you will be prepared for surgery. Please know that you will be asked multiple times for your name, site of surgery, and pertinent allergies. While this may seem repetitive, it supports our commitment to provide you quality and safe care. You will change into a gown, and a nurse will review your health information, your site of surgery, and the amount of time since you last ate or drank. Your nurse also will provide pre-operative teaching and address any special needs or concerns. You will have an intravenous (IV) line started, and your anesthesiologist will answer any last-minute anesthesia questions you may have.



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a Patient Guide to

Anesthesia

Arm and Hand Surgery

Hip and Knee Surgery

Shoulder Surgery

Foot and Ankle Surgery





types of Anesthesia

There are a variety of anesthetic techniques that are available to patients undergoing arm, hand, hip, knee, shoulder, foot, or ankle surgery at the Medical Center. The anesthesia team will prescribe a plan that considers your health issues, planned surgery, medications, and any preferences you may have. Frequently, two or more techniques are combined to take advantage of the best aspects that each offers. The team will help determine which forms of anesthesia are best for you during your pre-anesthesia clinic visit and on the morning of surgery.

Local Anesthesia

Very minor procedures, including drainage of joint fluid or stitches to close a cut, are performed under local anesthesia. The surgeon injects a local anesthetic, such as lidocaine, underneath the skin in the area of the procedure. During the procedure, you may feel some movement or tugging, but there should be very little sensation of pain.

Regional Anesthesia

While a minimal amount of local anesthesia underneath the skin is enough for minor procedures, larger operations, such as major joint surgery, require a dense block of pain sensation.

There are just a few major nerves to the arm, hand, hip, knee, shoulder, foot, and ankle. If these nerves are blocked, the entire arm or leg becomes numb—unable to feel pain or move—until the local anesthetic wears off. Nerves to the arm, hand, or shoulder can be blocked at the neck, just around the collar bone or at the arm pit. The actual nerve that is blocked depends on the area of the arm or leg where the surgeon will be working.

To perform an arm or leg block, the area of skin over the nerves is washed with an antiseptic solution. The skin over the nerves is numbed with a small dose of local anesthetic underneath the skin. A thin needle is attached to a nerve stimulator and advanced under the skin towards the nerve. The nerve responds to the tiny electric current from the stimulator, and the muscles move a bit. By checking which muscle is moving, the anesthesiologist can tell which nerves are closest. A solution of local anesthetic is then injected around the nerve. Muscle movement stops immediately, and the area controlled by that nerve becomes progressively numb over the next half hour.

If you stay overnight in the hospital, a plastic tube may be inserted along the nerve to allow pain medication to flow around the nerve for one or two days following the operation. This is called a peripheral nerve catheter and is popular with joint replacement surgery. Arm or leg blocks allow pain relief to continue for hours to days following surgery. The other extremities remain unaffected so that you can remain active on the afternoon of surgery. Heart, lung, bowel, and bladder function are not affected by a block.

Spinal Anesthesia

This form of anesthesia is sometimes used for lower abdomen or leg surgery. It is not used for arm, hand, or shoulder surgery. In adults, the spinal cord ends just below the lowest rib. The patient is lightly sedated with a medication such as Valium. The area of the lower back is cleaned with antiseptic, and a small injection of local anesthetic is used to numb the skin. A thin needle is passed through the numbed area until the needle is in the correct location. A measured dose of local anesthetic is injected, and the needle is removed.

Depending on the dose of the medicine and the position you are in, the area of numbness will range from the buttocks to the waist line or higher. The exact area of numbness is tested by finding where you cannot feel the coldness of an ice cube when applied to the skin.

Epidural Anesthesia

Epidural anesthesia is a popular form of pain control in joint surgery as well as labor and childbirth. The person either sits up or lies on one's side while the anesthesiologist slowly advances the needle to the correct location. A thin, plastic tube, or catheter, is placed through the needle into the epidural space. The needle is withdrawn, and two-inches of the catheter remain in the epidural space. The catheter is taped to the back and several doses of a local anesthetic are injected

through the catheter until the leg becomes numb. Following surgery, the catheter is connected to a pump containing a solution of local anesthetic to block most of the surgical pain, yet allows the person to move his legs. The epidural is typically removed just after surgery or on the day following surgery—a painless procedure, similar to removing an intravenous line.

Sedation

Patients are frequently concerned about seeing, hearing, or feeling things during surgery. Patients with a regional, spinal, or epidural anesthetic are generally sedated to the point of not being aware of their surroundings. This is not the same as a general anesthetic where the person has breathing assistance—usually with a ventilator. People who are sedated typically breathe on their own and do not have a breathing tube inserted into their windpipe.

General Anesthesia

Probably the most familiar type of anesthesiology, general anesthesia, involves injecting a drug through the intravenous line to make a person become unconscious. At the end of surgery, medications are injected to reverse the anesthetic before the person is transferred to the recovery room.

Advantages of general anesthesia include complete lack of awareness of events in the operating room.



after Surgery

People who undergo a general anesthetic will have their post-operative pain managed by their surgical team. Intravenous-Patient-Controlled Analgesia (PCA), or pain relief pumps, are often used to administer pain medicine on an as-needed basis. The pumps are carefully programmed to prevent the patient from administering more than a safe amount of pain medication. Although morphine is the most commonly used medication, there are several suitable alternatives for those who do not tolerate morphine.

People who have a nerve block or epidural will receive acute pain management services provided by the anesthesiology team. The team visits each patient twice per day and is available around-the-clock if a patient experiences medication side effects or other issues.

Epidurals and peripheral nerve catheters are generally left in place for one to three days following surgery. Adjustments in the rate and type of block medications are made to provide comfort while minimizing side effects. Other pain medications often are administered to enhance the effects of the nerve catheter. Before you are discharged from the hospital, your acute pain management team and your surgeon will design a plan for your ongoing pain relief.

We encourage you to ask your anesthesia team about what type of anesthetics are best for you. The team looks forward to working with you and your surgeon to ensure you have a positive anesthetic experience during your hospitalization.

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Milton S. Hershey
Medical Center

committed to your comfort – and good health.