

Types of Anesthesia

During surgery, you will be given some form of anesthesia, which are medicines given to relieve pain and sensation during surgery. Before surgery, you will meet with the physician anesthesiologist or nurse anesthetist. The anesthesiologist will review your medical condition and history to plan the appropriate anesthetic for surgery.

There are various forms of anesthesia. The type of anesthesia you get will depend on the type of surgery and your medical condition. Sedatives (to make you sleepy) and analgesics (to ease the pain) may also be used as part of the anesthesia process. The different types of anesthesia include the following:

Local Anesthesia

Local anesthesia is an anesthetic agent given to temporarily stop the sense of pain in a particular area of the body. You remain conscious during a local anesthetic. For minor surgery, a local anesthetic can be given via injection to the site, or allowed to absorb into the skin. However, when a large area needs to be numbed, or if a local anesthetic injection will not penetrate deep enough, doctors may use other types of anesthesia.

Regional Anesthesia

Regional anesthesia is used to numb only the portion of the body that will undergo the surgery. Usually an injection of local anesthetic is given in the area of nerves that provide feeling to that part of the body. There are several forms of regional anesthetics:

Spinal anesthetic. A spinal anesthetic is used for lower abdominal, pelvic, rectal, or lower extremity surgery. This type of anesthetic involves injecting a single dose of the anesthetic medicine into the area that surrounds the spinal cord. The injection is made into the lower back, below the end of the spinal cord, and causes numbness in the lower body. This type of anesthesia is most often used in orthopedic procedures of the lower extremities.

Epidural anesthetic. The epidural anesthetic is similar to a spinal anesthetic and is commonly used for surgery of the lower limbs and during labor and childbirth. This type of anesthesia involves continually infusing an anesthetic medicine through a thin catheter (hollow tube). The catheter is placed into the space that surrounds the spinal cord in the lower back, causing numbness in the lower body. Epidural anesthesia may also be used for chest or abdominal surgery. In this case, the anesthetic medicine is injected at a higher location in the back to numb the chest and abdominal areas.

General Anesthesia

General anesthesia is an anesthetic used to induce unconsciousness during surgery. The medicine is either inhaled through a breathing mask or tube, or

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given through an intravenous (IV) line. A breathing tube may be inserted into the windpipe to maintain proper breathing during surgery. Once the surgery is complete, the anesthesiologist ceases the anesthetic and you are taken to the recovery room for further monitoring.

About Your Anesthesiologist

Anesthesiologists are the doctors trained to administer and manage anesthesia given during a surgical procedure. They are also responsible for managing and treating changes in your critical life functions--breathing, heart rate, and blood pressure--as they are affected by the surgery being performed. Further, they diagnose and treat any medical problems that might arise during and immediately after surgery.

Before surgery, the anesthesiologist will evaluate your medical condition and formulate an anesthetic plan that takes your physical condition into account. It is vital that the anesthesiologist knows as much about your medical history, lifestyle, and medicines, including over-the-counter and herbal supplements, as possible. Some particularly important information he or she needs to know includes the following:

Reactions to previous anesthetics. If you have ever had a bad reaction to an anesthetic agent, you need to be able to describe exactly what the reaction was and what your specific symptoms were. Give the anesthesiologist as much detail as possible, such as you felt nauseated when you woke up or the amount of time it took you to wake up.

Current herbal supplements. Certain herbal products, commonly taken by millions of Americans, may cause changes in heart rate and blood pressure, and may increase bleeding in some patients. The popular herbs ginkgo biloba, garlic, ginger, and ginseng may lead to excess blood loss by preventing blood clots from forming. In addition, St. John's wort, and kava kava, may prolong the sedative effect of the anesthetic. The American Society of Anesthesiologists advises anyone planning to have surgery to stop taking all herbal supplements at least 2 to 3 weeks before surgery to rid the body of these substances.

Any known allergies. Discussing any known allergies with the anesthesiologist is very important, as some anesthetic drugs trigger cross-allergies, particularly in people who have allergies to eggs and soy products. Allergies to both foods and drugs should be identified.

All recent and current prescription and over-the-counter medicines. It is also important to let your surgeon and anesthesiologist know about both prescription medicines and over-the-counter medicines you are taking, or have recently taken. Certain prescription medicines, such as coumadin, a blood thinner, must be discontinued for some time before surgery. In addition, as many people take a daily aspirin to prevent heart attack, and certain dietary supplements, doctors need to be aware of these habits, as they can prolong bleeding and interfere with medicines used by anesthesiologists.

Cigarette smoking and drinking alcohol. Cigarette smoking and alcohol can affect your body just as strongly (and sometimes more strongly) than many prescription medicines you may be taking. Because of the way cigarettes and alcohol affect the lungs, heart, liver, and blood, these substances can change the way an anesthetic drug works during surgery. It is important to let your surgeon and anesthesiologist know about your past, recent, and current consumption of these substances before surgery. Undergoing surgery can be a good motivator to quit smoking. Most hospitals are smoke-free and doctors, nurses, and other health professionals will be there to give you support. In addition, you will heal and recover faster, especially in the incision area, or if your operation involves any bones. Smoking cessation before surgery also decreases pulmonary complications after surgery, such as pneumonia. Quitting smoking also reduces your risk of heart disease, lung disease, and cancer.

Use of street drugs (such as marijuana, cocaine, or amphetamines). People are often reluctant to disclose the use of illegal drug, but you should remember that all conversations between you and your surgeon and anesthesiologist are confidential. It is crucial that he or she know about your past, recent, and current use of these substances, as these drugs can effect healing, and responses to anesthesia. It is important to keep in mind that the only interest your doctor has in this information is learning enough about your physical condition to provide you with the safest anesthesia possible.

Meeting the Anesthesiologist Before Your Surgery

Because anesthesia and surgery affect every system in the body, the anesthesiologist will conduct a preoperative interview. Sometimes this is done in person; in other cases, the anesthesiologist will interview you over the phone. During this interview, the anesthesiologist will review your medical history, as well as discuss the information mentioned above. He or she will also inform you about what to expect during your surgery and discuss anesthetic choices with you. This is also the time to discuss which medicines should be stopped, and which can continue before

surgery, as well as when to stop eating before the surgery.

If you have not personally met during the preoperative interview, the anesthesiologist will meet with you immediately before your surgery to review your entire medical history as well as results of any medical tests previously conducted. By this time, he or she will have a clear understanding of your anesthetic needs.

How are pre-existing medical conditions handled during surgery?

If you have a pre-existing medical condition, such as diabetes, asthma, heart problems, or arthritis, your anesthesiologist will have been alerted to this and will be well-prepared to treat these conditions during your surgery, as well as immediately afterward. Anesthesiologists are trained to handle sudden medical problems related to the surgery, as well as any chronic conditions that may need attention during the procedure.

How is my condition monitored during surgery?

Monitoring is one of the most important roles the anesthesiologist handles during surgery. Second-by-second observation of even the slightest changes in a wide range of body functions gives the anesthesiologist a tremendous amount of information about your well-being. In addition to directing your anesthesia, the anesthesiologist will manage vital functions, such as heart rate, blood pressure, heart rhythm, body temperature, and breathing. He or she will also be responsible for fluid and blood replacement, when needed. Sophisticated technology is used to monitor every organ system and its function during surgery.

Reference

[Schaum's Outline of Basic Electrical Engineering](#)

[It Looked Good on Paper: Bizarre Inventions, Design Disasters, and Engineering Follies](#)