

General anesthesia

Overview

General anesthesia is a combination of medications that put you in a sleep-like state before a surgery or other medical procedure. Under general anesthesia, you don't feel pain because you're completely unconscious. General anesthesia usually uses a combination of intravenous drugs and inhaled gasses (anesthetics).

General anesthesia is more than just being asleep, though it will likely feel that way to you. But the anesthetized brain doesn't respond to pain signals or reflexes.

An anesthesiologist is a specially trained doctor who specializes in anesthesia. While you're under anesthesia, the anesthesiologist monitors your body's vital functions and manages your breathing.

In many hospitals, an anesthesiologist and a certified registered nurse anesthetist (CRNA) work together during your procedure.

Why it's done

Your anesthesiologist or nurse anesthetist, along with your doctor, will recommend the best anesthesia option for you based on the type of surgery you are having, your overall health and your individual preferences. For certain procedures, your team may recommend general anesthesia. These include procedures that may:

- Take a long time
- Result in significant blood loss
- Expose you to a cold environment
- Affect your breathing (particularly chest or upper abdominal surgery)

Other forms of anesthesia, such as light sedation combined with local anesthesia (for a small area) or regional anesthesia (for a larger part of your body), may not be appropriate for more involved procedures.

Risks

General anesthesia is overall very safe; most people, even those with significant health conditions, are able to undergo general anesthesia itself without serious problems.

In fact, your risk of complications is more closely related to the type of procedure you're undergoing and your general physical health, rather than to the type of anesthesia.

Older adults, or those with serious medical problems, particularly those undergoing more extensive procedures, may be at increased risk of postoperative confusion, pneumonia, or even stroke and heart attack. Specific conditions that can increase your risk of complications during surgery include:

- Smoking
- Seizures
- Obstructive sleep apnea
- Obesity
- High blood pressure
- Diabetes
- Stroke
- Other medical conditions involving your heart, lungs or kidneys
- Medications, such as aspirin, that can increase bleeding
- History of heavy alcohol use
- Drug allergies
- History of adverse reactions to anesthesia

These risks are more generally related to the surgery itself rather than the anesthesia.

Anesthesia awareness

Estimates vary, but about 1 or 2 people in every 1,000 may be partially awake during general anesthesia and experience what is called unintended intraoperative awareness. It is even rarer to experience pain, but this can occur as well.

Because of the muscle relaxants given before surgery, people are unable to move or speak to let doctors know that they are awake or experiencing pain. For some patients, this may cause long-term psychological problems, similar to post-traumatic stress disorder.

This phenomenon is so rare that it's difficult to make clear connections. Some factors that may be involved include:

- Emergency surgery
- Cesarean delivery
- Depression
- Use of certain medications
- Heart or lung problems
- Daily alcohol use
- Lower anesthesia doses than are necessary used during procedure
- Errors by the anesthesiologist, such as not monitoring the patient or not measuring the amount of anesthesia in the patient's system throughout the procedure

How you prepare

General anesthesia relaxes the muscles in your digestive tract and airway that keep food and acid from passing from your stomach into your lungs. Always follow your doctor's instructions about avoiding food and drink before surgery.

Fasting is usually necessary starting about six hours before your surgery. You may be able to drink clear fluids until a few hours prior.

Your doctor may tell you to take some of your regular medications with a small sip of water during your fasting time. Discuss your medications with your doctor.

You may need to avoid some medications, such as aspirin and some other over-the-counter blood thinners, for at least a week before your procedure. These medications may cause complications during surgery.

Some vitamins and herbal remedies, such as ginseng, garlic, Ginkgo biloba, St. John's wort, kava and others, may cause complications during surgery. Discuss the types of dietary supplements you take with your doctor before your surgery.

If you have diabetes, talk with your doctor about any changes to your medications during the fasting period. Usually you won't take oral diabetes medication the morning of your surgery. If you take insulin, your doctor may recommend a reduced dose.

If you have sleep apnea, discuss your condition with your doctor. The anesthesiologist or anesthetist will need to carefully monitor your breathing during and after your surgery.

What you can expect

Before the procedure

Before you undergo general anesthesia, your anesthesiologist will talk with you and may ask questions about:

- Your health history
- Your prescription medications, over-the-counter medications and herbal supplements
- Allergies
- Your past experiences with anesthesia

This will help your anesthesiologist choose the medications that will be the safest for you.

During the procedure

Your anesthesiologist usually delivers the anesthesia medications through an intravenous line in your arm. Sometimes you may be given a gas that you breathe from a mask. Children may prefer to go to sleep with a mask.

Once you're asleep, the anesthesiologist may insert a tube into your mouth and down your windpipe. The tube ensures that you get enough oxygen and protects your lungs from blood or other fluids, such as stomach fluids. You'll be given muscle relaxants before doctors insert the tube to relax the muscles in your windpipe.

Your doctor may use other options, such as a laryngeal airway mask, to help manage your breathing during surgery.

Someone from the anesthesia care team monitors you continuously while you sleep. He or she will adjust your medications, breathing, temperature, fluids and blood pressure as needed. Any issues that occur during the surgery are corrected with additional medications, fluids and, sometimes, blood transfusions.

After the procedure

When the surgery is complete, the anesthesiologist reverses the medications to wake you up. You'll slowly wake either in the operating room or the recovery room. You'll probably feel groggy and a little confused when you first wake. You may experience common side effects such as:

- Nausea
- Vomiting
- Dry mouth
- Sore throat
- Muscle aches
- Itching
- Shivering
- Sleepiness
- Mild hoarseness

You may also experience other side effects after you awaken from anesthesia, such as pain. Your anesthesia care team will ask you about your pain and other side effects. Side effects depend on your individual condition and the type of surgery. Your doctor may give you medications after your procedure to reduce pain and nausea.

By Mayo Clinic Staff

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