

Canine Anesthesia

- Anesthesia is useful for many things, including performing surgery or biopsy procedures, taking x-rays, and performing dental procedures.
- Your veterinarian may select local anesthesia, injectable general anesthesia, or inhaled general anesthesia to keep your pet pain-free during surgical or diagnostic procedures.
- Your veterinarian is extensively trained in performing anesthesia and will take every possible precaution to help ensure that your pet awakens safely.

What Is Anesthesia?

Anesthesia is defined as the “loss of ability to feel pain.” However, the term *anesthesia* is more commonly used to refer to a state of deep sedation or unconsciousness during which a patient is unable to feel pain.

Two forms of anesthesia are used in dogs. For some patients, *local anesthesia* is an option. This involves injecting the medication into a specific place in the skin (or applying it onto an area of the skin) to induce temporary localized numbness, allowing the veterinarian to perform a brief procedure. The affected area can include the skin, underlying muscles, and nerves. The medication used for local anesthesia does not cause the patient to fall asleep; when deep sedation or unconsciousness is required, *general anesthesia* is a better option. Medications used for general anesthesia are available in many forms. Some are administered by injection, whereas other forms are inhaled through an anesthetic mask or breathing tube that is connected to an anesthesia machine.

When Is Anesthesia Used?

Anesthesia has many uses in dogs. Local anesthesia may be an option if your veterinarian needs to remove a small growth on your dog’s skin, perform a biopsy of a growth or an area of skin, use stitches to close a small cut or wound, or perform any type of minimally painful procedure during which unconsciousness is not required.

General anesthesia is used for more invasive types of surgeries or for procedures likely to be very painful. Examples include repairing a broken bone or performing surgery involving the abdominal or chest cavities.

Surgery is not the only time when anesthesia is recommended. Dogs generally require anesthesia or very heavy sedation before dental cleanings, dental x-rays, or complete dental examinations. Anesthesia is sometimes used for taking x-rays of other areas of the body, especially if the patient is in pain and positioning for x-rays would result in more pain. General anesthesia tends to cause muscle relaxation, which has additional advantages when x-rays of the body are required.

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Sometimes, local anesthesia and general anesthesia are used together for the same procedure. For example, some veterinarians use general anesthesia to place the patient into a state of unconsciousness, then inject a local anesthetic agent into the skin and underlying tissues where surgery will be performed. The numbing effect of the local anesthetic can reduce the amount of pain that the patient experiences when he or she eventually wakes up from general anesthesia.

How Is Anesthesia Performed?

Pre-anesthetic Evaluation

Your veterinarian may recommend a pre-anesthetic evaluation before placing your pet under general anesthesia. This process is generally not necessary for local anesthesia. The pre-anesthetic evaluation may include a physical examination to ensure that your

pet is healthy enough for anesthesia. Pre-anesthetic blood work may also be recommended to help identify medical problems that may increase the risks associated with surgery or anesthesia. Pre-anesthetic blood work can help identify medical conditions such as infection, anemia (a low number of red blood cells), low blood sugar, inadequate blood-clotting ability, liver disease, or kidney disease.

If your pet has any preexisting medical issues, such as a heart problem, your veterinarian may recommend additional testing to determine if any precautions are recommended or if anesthesia should be postponed or cancelled due to health reasons.

Some practices perform the pre-anesthetic evaluation on the day of anesthesia. However, some veterinarians perform this testing a few days or weeks before the procedure is scheduled. This is a common practice before performing an elective surgical procedure such as a dental cleaning, spay surgery, or castration surgery.

Inducing and Maintaining General Anesthesia

The process of sedating a patient and preparing him or her for entering general anesthesia is called *induction*. Once induction is accomplished, the patient is maintained under general anesthesia until the procedure (surgery, x-rays, biopsy, dental cleaning, or other procedure) is completed and the patient is permitted to awaken.

Induction generally begins with administration of a sedative. This helps relax the patient so that the rest of the induction activities can proceed. During this time, an intravenous catheter may be placed to begin administration of intravenous fluids. Once the patient is relaxed, additional medications are given to induce a deeper level of sedation, leading to general anesthesia. If injectable anesthetic medication is used, this medication is continued until the patient is permitted to wake up. If inhalant anesthesia is chosen, a breathing tube is inserted into the patient's main airway (or sometimes an anesthetic mask is placed over the mouth and nose) and connected to a machine that delivers a carefully calculated mixture

of oxygen and inhalant anesthetic. The patient inhales this mixture until the procedure is completed and the patient is permitted to awaken.

Both methods of general anesthesia (injectable or inhaled) will safely keep your pet asleep and pain-free. Whichever method of anesthesia is chosen, your veterinarian will take every precaution to help ensure that your pet remains healthy and awakens safely from anesthesia. Veterinary technicians observe and monitor patients that are under general anesthesia. Additionally, monitoring equipment is generally used to constantly measure heart rate, breathing, oxygen use, and blood pressure. When the procedure is completed, the anesthetic agent is discontinued and the patient is monitored until he or she is fully awake and recovered from anesthesia.

What Are the Benefits and Risks of Anesthesia?

Keeping patients pain-free during surgery is an important goal of anesthesia, but there are many other purposes for anesthesia. If a dog has an injury that is too painful to be examined while the dog is awake, anesthesia may be the best way to facilitate a thorough examination. Additional procedures, such as placing a splint or cast on a broken leg, taking x-rays of a painful injury, or cleaning and dressing a serious wound can frequently be accomplished more efficiently if the patient is under anesthesia.

Many dental procedures, including dental cleaning, extracting an infected or broken tooth, taking dental x-rays, or performing dental restoration, are generally not possible without anesthesia.

As with any medical procedure, anesthesia is not without its risks. Some patients may react negatively to the anesthetic medication or experience fluctuations in heart rate, breathing, or blood pressure. Your veterinarian is extensively trained in performing anesthesia, and your veterinary care team will take every possible precaution to help ensure that your pet awakens safely. Be sure to address any questions or concerns with your veterinarian.