

# AN ANESTHETIC PRIMER FOR THE BELGIAN OWNER

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Having your beloved Belgian go under anesthesia can be a nerve-wracking experience. Understanding exactly what will take place and what questions to ask may help ensure your dog's safety and your peace of mind.

What questions should be asked before you agree to anesthesia?

1. Is anesthesia really necessary for this procedure? Look for a veterinarian who is willing to work with you on this. Some procedures CAN be done in the awake patient. With a local anesthetic, some wounds can be sutured, a skin biopsy taken, small tumors removed. OFA films can be done in awake dogs, but the dog must be cooperative enough to lie on his back with his hind legs stretched all the way out and rotated in. And he must be STILL. Some dogs just won't go for this without sedation.
2. What kind of pre-anesthetic screening is done? At a minimum, in a healthy young dog, a physical exam should be done, along with a history of the dog's general health, recent medications, drug allergies, vaccinations and any recent insecticide exposure. Depending on the dog's age and history, blood work may be necessary before anesthesia.
3. Have you done anesthesia on Belgians before? While there is no definitive proof that Belgians as a breed are more sensitive to anesthesia, there is certainly enough anecdotal evidence to make us very cautious. Belgians, as a breed, tend to be lean, active dogs with little body fat. This combination of traits may make them susceptible to relative overdoses, if the anesthetic is given strictly by body weight or given too quickly without letting the dog settle down. In other words, a thin dog that will fight going under, may need a lower dose than he seems to!
4. What kind of anesthetic will be used? There are many different drugs that may be safely used for anesthesia, and the selection is subject to each individual veterinarian's experiences and preferences.

## COMMONLY-USED DRUGS

Keeping in mind that new, better drugs are coming along all the time, here is a list of some of the drugs that are commonly used in the average practice.

### ATROPINE (or GLYCOPYRROLATE)

These drugs are used as pre-anesthetics to prevent the heart from slowing down during anesthesia and to dry up the excess saliva that sometimes results with anesthesia. Atropine should not be given to an animal with signs of congestive heart failure.

### ACEPROMAZINE

Commonly called ACE, this drug is often used in pill form for dogs that have storm anxiety or car sickness. It is used as a pre-anesthetic to sedate the patient, control nausea, and to protect against some heart arrhythmia. Ace dilates the blood vessels so it may lead to lowered body temperatures which slow recovery. This drug also lowers the blood pressure and the seizure threshold. **THIS DRUG SHOULD NOT BE USED IN EPILEPTICS OR PATIENTS IN SHOCK.**

It has been suggested that the manufacturer's dose be reduced by 50% or more when used as a pre-anesthetic. It should also be used with extreme caution in older dogs, neonates and dogs with liver problems.

Belgians seem to be particularly sensitive to the effects of Acepromazine. I get more calls about problems with this drug than any other. When given just a drop of Acepromazine with their preanesthetic meds, some Belgians are still unable to stand 18 hours later and require IV fluids to get them back up and going. I'd avoid this drug if at all possible and do not use it for any dogs in my practice except in the oral form.

### BARBITURATES (Pentobarbital, Nembutal, Thiopental, Pentothal, Thiamylal, Biotal, Surital, Brevital).

These drugs are given intravenously to allow intubation. During intubation, a tube is inserted into the windpipe so that the patient is ensured of a clear airway. Oxygen and anesthetic gas are then given through the tube. Respiratory depression can be a problem with this class of drugs, the dog may even stop breathing on its own when they are first administered. It is **CRUCIAL** that dogs on this kind of anesthesia have an endotracheal tube in and be on oxygen, so that they can be ventilated if need be.

Barbiturates may also cause a decline in heart function and blood pressure immediately after injection. They can also cause irregular heartbeats and even cardiac arrest, especially if the patient is stressed or excited. If these drugs accidentally get outside the vein during injection, they can cause tissue damage.

Animals awoken from barbiturate anesthesia when the drug leaves the brain and disperses into the body fat. Over time, the drug exits the body by way of the liver and kidneys. So thin animals, and those with liver or kidney problems, may have prolonged recoveries. Sight hounds have a proven increased sensitivity to these drugs, because they are very low in body fat and their livers have some problems processing barbiturates. I, personally, don't use Barbiturates anymore.

### DOMITOR (Medetomidine)

Domitor is a sedative analgesic drug which is useful for short procedures like taking X-rays or minor surgery. It should not be used in patients with heart, liver, or kidney disease nor in dogs that are very debilitated or in shock. It always doesn't work well (sometimes not at all!) in dogs that are very stressed or agitated. It works best if you give it and then put the dog in a quiet, dark place to get sleepy.

Adverse effects can include slow heart rate and breathing, excitation rather than sedation, vomiting, and recurrence of sedation after recovery.

While it can be given intravenously, I prefer to use the intramuscular route only. The big advantage of this drug is that it can be reversed with Antisedan so that when the procedure is done the dog can be up and near normal in a very short time. I've used this drug for quite a few Belgians and it has worked well for doing OFA films.

### ISOFLURANE

This gas anesthetic is commonly used today, and although it is expensive, its wide margin of safety compared to the older Metophane and Halothane, make it the drug of choice for most patients. Because 99% of Isoflurane leaves the body through breathing, animals begin to wake up almost as soon as the gas is turned off. Isoflurane doesn't depress the heart and doesn't have to be stored in the fat or processed by the liver or kidneys.

Geriatric or ill patients can be masked down with Isoflurane in minutes, then

intubated and maintained on Iso during surgery. Animals usually begin to wake in 1-2 minutes once the isoflurane is turned off. It may be difficult to find a mask that fits the long, pointy Belgian face!

**KETAMINE (KETASET)** Ketamine has a wide margin of safety when used for anesthesia. Given along with Valium, Ketamine gives a quick, smooth induction in about 1 minute. Ketamine does not depress the heart rate, and while some animals seem to hold their breath, their oxygen levels usually remain adequate.

**KETAMINE SHOULD NOT BE USED IN EPILEPTIC DOGS.**

Rough recoveries with thrashing and screaming can sometimes be a problem with Ketamine, so patients should be carefully monitored. This excitement generally lasts only a few minutes. Recovery from Ketamine and Valium anesthesia usually occurs in 2-6 hours in young, healthy animals.

**PROPOFOL (Rapinivet):**

This sedative-hypnotic drug has now become the “drug of choice” in many practices. Propofol can be used alone for short procedures or as an induction agent before gas anesthesia. A single dose last only about 5 to 7 minutes as this drug is rapidly eliminated from the body. It does not accumulate in the tissues so it is safe to repeat doses. Animals generally recover smoothly and are normal very quickly without evidence of a “drug hangover”. Propofol’s rapid elimination makes it safe even for animals with liver disease. It can be used without fear of triggering seizures in epileptic patients.

Propofol can depress heart function and breathing, though it does not cause cardiac arrhythmia. An endotracheal tube should be in place in case ventilation is needed. If given too rapidly or at too high a dose this drug can cause respiratory arrest. There has been a study showing prolonged recoveries in Greyhounds (47 minutes as opposed to 7 minutes in mixed breeds) but I have not seen this reported in Belgians.

**SERVOFLURANE**

This inhalation anesthetic is very similar to Isoflurane. It is quickly expelled from the body just by breathing so it’s very safe, even for elderly or ill animals. Recovery times are reportedly even quicker than those with Isoflurane.

**VALIUM (Diazepam)**

This drug is usually used together with Ketamine. Valium calms the patients, helps prevent seizures, and relaxes the skeletal muscles. Valium is one of the safest of preanesthetics, and while it must be used with caution in patients with liver problems, it is very useful for anesthesia in the elderly or high-risk patient.

### XYLAZINE (Rompun)

Xylazine is a potent sedative and muscle relaxer. It is also associated with a "higher incidence of anesthetic complications and death than any other commonly used preanesthetic" (1) It is often combined with Ketamine for general anesthesia.

The advantage to Rompun is that it can be given in the muscle, and occasionally, a patient is so intractable that hitting a vein or masking down is not an option. Also, the drug Yohimbine can be given to reverse the effects of Rompun.

Rompun slows the heart and may cause irregular heartbeats and low blood pressure. It may cause greatly depressed breathing, gastric bloating, and vomiting, prolonged deep sleep. This drug should not be used in dogs with heart, lung, liver or kidney problems, and I have serious reservations about its use in any patient. EVER.

So how can you do your best to insure a safe anesthetic for you Belgian?

Look for a veterinarian who is willing to do procedures without anesthesia if possible and who does appropriate pre-anesthetic screening. While it may prove difficult to find a veterinarian who has much experience with Belgians, look for someone who will listen seriously to your concerns and tell them that Belgians seem to handle anesthesia much like sight hounds.

As far as which anesthetic is used, each patient must be evaluated individually. In my experience, (22 years) the safest way to induce anesthesia for the majority of patients is to give Valium and Ketamine intravenously, intubate the dog, and maintain it on Isoflurane. An alternative, especially for the sick or elderly patient, is to mask the dog down with Isoflurane, and then intubate and maintain on Iso.

I've used the Valium, Ketamine, Isoflurane combination on my own Belgians, my elderly, diabetic Sheltie who has kidney failure, on a 14 year old who had heart failure, kidney failure and a huge infected uterus--in fact, I use this combination of anesthetic for 99% of the procedures I do.

Anesthesia is a state of controlled and reversible unconsciousness, and while nothing can make it 100% safe for every patient, you and your veterinarian can work together to make it the safest experience possible.

