

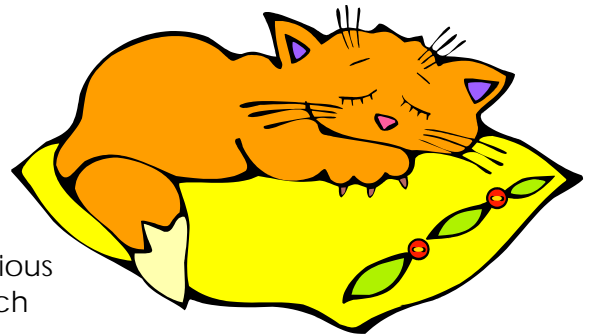
ANESTHESIA IN PETS



Many pet owners worry unnecessarily about anesthesia in their pets. Although anesthesia can never be completely free of risk, today's modern anesthetics make that risk very small. The same anesthetics that allow complicated surgeries such as heart and kidney transplants to be done on humans are used in pets as well. Even very frail animals can usually be anesthetized safely. In general, the risks from NOT performing a needed procedure, such as dental cleaning or tumor removal, are much higher than the risk from the anesthesia.

SAFETY BEGINS WITH SCREENING TESTS

We use preoperative examination, blood testing, ECG heart screening and radiographs (X-rays) to help us determine whether a procedure will be safe for your pet before it is performed. Even young and apparently healthy animals can have serious organ dysfunctions which are not evident without such testing.



Blood testing is done prior to anesthesia to insure that the kidneys and liver are functioning properly. These are the organs that have to process anesthetic drugs. It is rare for blood testing to prompt us to cancel a procedure but it is common for us to adjust the drugs used or the type and rate of IV fluids in order to make anesthesia safer.

An ECG (electrocardiogram) before anesthesia is recommended to diagnose an abnormal heart rhythm, which could affect the safety of a procedure. The most common reason for death under anesthesia is an undiagnosed heart problem. Although we have all our patients on ECG monitors during their procedures, the goal is to find heart abnormalities *before* we administer the anesthesia. We postpone or cancel half a dozen procedures every year because of unexpected findings on ECG.

Many people assume that young animals are at low risk for heart abnormalities. It's actually young patients with genetic forms of heart disease that are at highest risk.

Many people assume that young animals are at low risk for heart abnormalities. Some forms of heart rhythm disturbance become more common with age but it's actually young patients with genetic forms of heart disease that are at highest risk, especially in cats. Like the teenager who collapses on

Caring People Helping Pets

2082 Cheyenne Court, Grafton, WI 53024 • phone: 262-375-0130 • fax: 262-375-4196 • www.bestfriendsvet.com



the basketball court, a sudden irregular rhythm under stress, such as exercise or anesthesia, can be fatal. ECG screening saves lives.

Some breeds of both cats and dogs have risk for specific heart, liver or kidney abnormalities and require extra testing. Bile acids testing for liver dysfunction, blood clotting tests and ProBNP heart muscle enzyme levels are examples. If your pet has extra risk, such testing may need to be done prior to surgery day so we have results back in time.

WHO IS ADMINISTERING THE ANESTHETIC TO YOUR PET? ARE THEY QUALIFIED?

Here at Best Friends, anesthesia is always administered by certified and licensed veterinary technicians or the doctors. This ensures safety and proper dosing. IV fluids are usually given, except for very brief procedures, to ensure your pet's full recovery. During anesthesia your pet will be monitored closely for blood oxygen levels, heart rate, respiration, blood pressure and temperature.

Monitoring is getting more sophisticated all the time. The equipment is becoming smaller and smaller, so we can carry it around easily from prep room to surgery to recovery. Some of our monitors talk directly to our tablet computers. We also move a customized emergency drug sheet around with each patient, so if problems occur we have the dosages of emergency drugs handy for use.

A well-trained technician knows how to interpret what the anesthetic monitors are showing on the screen, and she knows how to respond if something isn't right. Some of the side effects of anesthesia include hypothermia, hypotension (low blood pressure) and decreased breathing. It's easy to manage those side effects but we have to be paying attention.

With proper care and monitoring, your pet should go home after anesthesia just as perky and healthy as when he arrived at the hospital, whether he or she is 16 months or 16 years of age.



This is Ginger. Her pre-anesthetic blood testing for her spay showed her kidneys were failing. Surgery was postponed and she was started on a kidney diet. Her kidney function improved and she was spayed a month later. Golden retrievers like Ginger are at risk for a genetic form of kidney disease. Just because a patient is young doesn't mean he or she is healthy!

Visit our website or YouTube channel, BFVC, to watch the following videos

Benefits & Risks of Spaying/Neutering Dogs:

<http://www.youtube.com/watch?v=4IirBpqb0BE>

Benefits & Risks of Dental Cleaning in Dogs:

<http://www.youtube.com/watch?v=-CpTx6O3sPc>

Benefits & Risks of Spay/Neuter & Declaw Surgeries in

Cats: <http://www.youtube.com/watch?v=elfc5ldUCss>

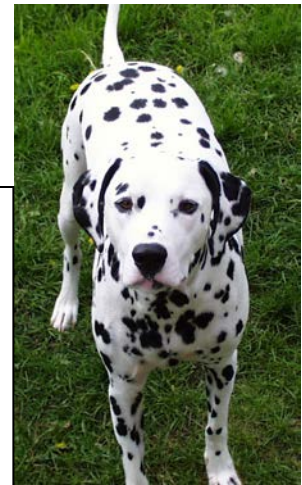
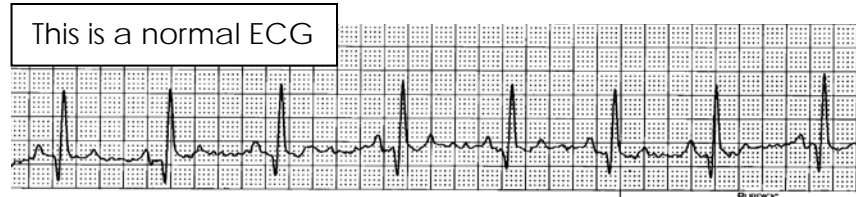
Benefits & Risks of Dental Cleaning in Cats:

<http://www.youtube.com/watch?v=U75BPDMnIOA>

TEN WAYS TO MAKE ANESTHESIA SAFER

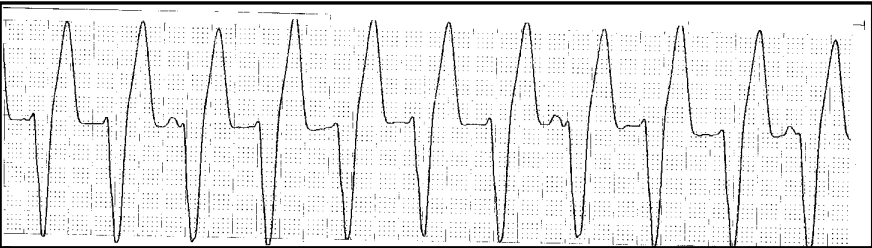


1) **ECG** – electrocardiogram. This simple test can diagnose heart problems that may make anesthesia much more risky.



This is Toby's very abnormal ECG the morning of his procedure. Instead of dental work, Toby was rushed to the emergency clinic, where he was started on heart medications. Toby lived 4 more years instead of dying under anesthesia that day.

This is Toby, an 8 year old Dalmatian presented for dental work. He had a normal physical exam with a normal heart rate of 120. He had a normal ECG 6 months prior. Between then and the day he came in, his heart had changed.



2) **Intravenous fluids.** Inserting a catheter into a vein lets us drip fluids into the bloodstream throughout a procedure. These extra fluids help maintain blood pressure during anesthesia. Low blood pressure, hypotension, is the most common side effect of anesthetic drugs.

Having a catheter in place allows us to quickly administer emergency medications, should the need arise. The fluids we give also prevent dehydration in pets who will be off food and water for the day. Well-hydrated patients metabolize anesthetics more rapidly and flush them out of their systems more easily – thus they recover faster.

3) **Blood pressure monitoring.** Since low blood pressure is the most common complication of anesthesia, monitoring for it lets us provide extra fluids and medications to counteract the problem. We continue to monitor until the pet is awake and the blood pressure is normal.

4) **Customize the anesthesia plan.** There are many different anesthetic drugs, each with their own benefits and risks. One size does not fit all when it comes to anesthesia. We carefully plan each patient's procedure in order to minimize risk and maximize pain

control. Pre-anesthetic testing allows us to evaluate and adjust our protocols when needed.

5) Combat hypothermia. The second most common side effect of anesthesia is low body temperature. We monitor pets' temperatures during and after surgery, and provide warmth as needed. Warm air blankets, reflectance heaters, warm IV fluids, heating pads, and caps and socks to prevent heat loss through the head and feet are just some of the ways we can supplement warmth. Cold patients metabolize drugs slowly and are prone to blood clot formation, causing embolisms and strokes.

6) Anxiety management. The more anxious the pet, the more adrenaline is in its system and the higher the dosages of anesthetics will be needed. When clients **administer antianxiety medication prior to their pets' procedures** those animals need less gas anesthesia and wake up more quickly. They also require less pain medication. Of course, the experience is also a lot less frightening for them!

7) Pain management. When pain is managed well, we need less anesthesia, which means greater anesthetic safety and a quicker recovery. Pain management also reduces the risk of post-op complications, including licking or chewing incisions, anorexia, hypotension, blood clot formation, infection and prolonged healing time. It's also the humane thing to do. **Pain medication works best when started ahead of surgery day.**

8) Compensate when a pet is overweight. Overweight pets are more prone to hyperthermia (overheating), respiratory difficulties and slow metabolism of anesthetics. The more obese the pet, the higher the anesthetic risk, which can change our monitoring protocol and what drugs we choose.

9) Plan ahead for complications. Emergency drug sheets, drawing up medications ahead of time in case they are needed, obtaining consent for various levels of resuscitation if needed, and assigning risk levels based on age and physical condition ensure we are prepared with a protocol in place in case something goes wrong.

10) Take breed risks and age into account. Some breeds have risk for bleeding disorders, others for specific heart, kidney or liver conditions. Very young and very old pets have different risks. Tests for clotting time, Cerenia™ to reduce risk for aspiration pneumonia in brachycephalic (short-nosed) pets, having a doctor intubate brachycephalic patients to examine their airways, and being aware of patient risks due to breed, age and overall health are all key factors in making a procedure as safe as possible.

Pain and antianxiety medications must be picked up at least two days prior to your pet's procedure.

If you have further concerns about anesthesia in your pet, we would be happy to discuss the risks and benefits of any procedure with you and explain the exact protocol that will be used. Please let us know!