

## Dr. Phil Zeltzman, DVM, DACVS, CVJ

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Thanks to the efforts of our forefathers, we can perform better surgery thanks to better monitoring, safer anesthesia and better drugs.

### Better Monitoring

A few decades ago, ensuring that a patient was alive during anesthesia was limited to using your senses: observing gum color, feeling pulses, watching the chest move. More recently, we borrowed from human medicine and started using EKG machines to monitor the heart. Today, most modern clinics can also measure oxygen levels, blood pressure, temperature, heart rate, and occasionally CO2 levels.

### Better Drugs

There is no question that the anesthesia drugs we use today are safer than those used a few years ago. By combining several drugs, we can provide multiple benefits to the patient, while using lower dosages of each one. This is called balanced anesthesia. For example, when we do fancy orthopedic surgery on a pet's knee, we might combine:

- An anti-inflammatory drug, which helps decrease pain
- A pain killer, similar to morphine
- Special IV fluids with two or three pain medications
- An epidural
- A medication injected into the joint to numb the knee (similar to what you'd get at the dentist)

In turn, using such a "cocktail" allows us to use less anesthesia gas during the procedure, which again makes the anesthesia safer.

### Better Procedures

Surgery procedures keep getting better. There are some really smart people out there who always seem to come up with newer, better and quicker procedures. In addition, many orthopedic patients now benefit from specialized physical therapists, which help them recover better and faster.

### Better Surgeons

Although family vets can perform many surgeries, the advent of specialized veterinary surgeons has provided another option for advanced surgery. Becoming a board-certified surgeon (like yours truly) requires going through vet school (8 years), a 1 year internship and a 3 year surgery residency. After fulfilling multiple requirements, residents need to pass a difficult exam. Only then can they be called board-certified surgeons.

In some cases, we can save lives or limbs when it wasn't possible a few years ago. We can now place stents to widen narrow areas (e.g. the windpipe) and replace joints (hips, elbows, and knees). We can often help paralyzed pets walk again and reconstruct shattered bones to save a leg. We can place tiny cameras inside body cavities for minimally invasive procedures (in joints, chest, and abdomen).

### Better Equipment

As the profession advanced, equipment has become more sophisticated. Although we still need "good hands" and good skills, many of these medical advancements depend on better equipment. Surgeons' equipment has evolved from hacksaws and hand drills, to a variety of electricity or compressed gas-powered instruments.

Suture materials have become safer and more efficient as our needs have changed. Many years ago, suture materials included silk or animal hair and intestine. Today they are made of nylon and a variety of dissolvable materials. Even the instruments themselves have evolved. These days, left-handed surgeons don't have to struggle using right-handed instruments, as manufacturers make specialized instruments just for lefties.

The end-result? Patients who are anesthetized with safer drugs and better monitored logically have a better outcome. Although pet owners are often concerned about anesthesia risk, the death rate under anesthesia these days is a fraction of 1%. These recent statistics encompass all patients, from perfectly healthy to extremely sick.

Such progress allows us to push the limits of what we thought possible a few years ago.

*If you have any questions or concerns, you should always visit or call your veterinarian - they are your best resource to ensure the health and well-being of your pets.*