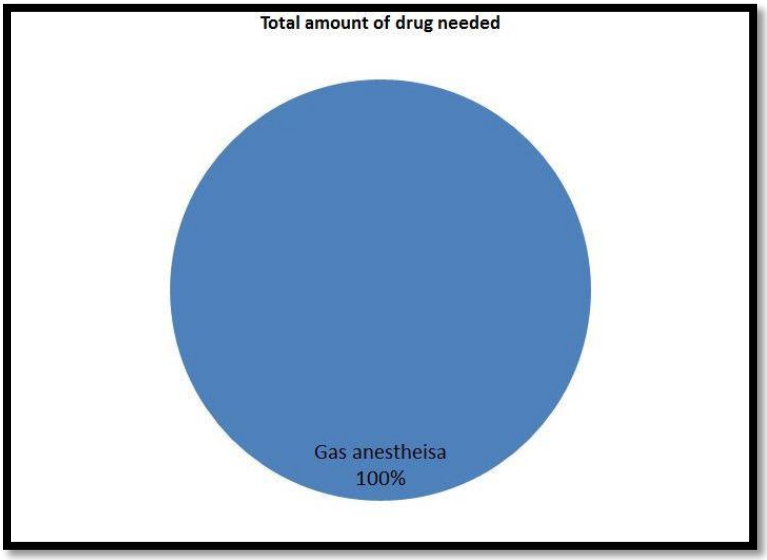
Multi-modal Anesthesia and Pain Management

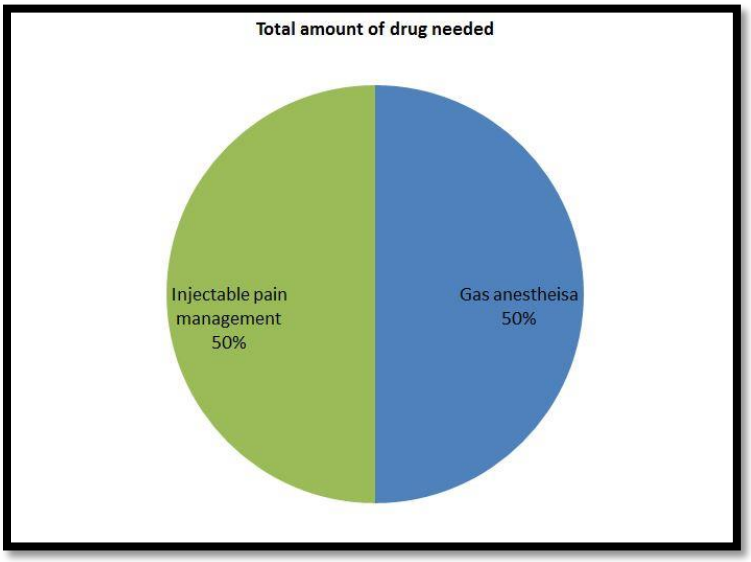
At Cedar Grove Veterinary Services, we employ what is known as Multi-Modal Anesthesia and Pain Management (MMAPM) for our surgical and sick patients. MMAPM may sound daunting but is actually very simple. So, what exactly is MMAPM?

The easiest way to describe a multi-modal approach to anesthesia and pain management is as follows: by using a number of different medications for anesthesia and pain management the amount of each medication you need to use goes down. Being able to utilize less of each type of medication makes anesthesia safer and keeps your pet more comfortable during recovery. Each of the medications are given individually allowing us to assess their effects and adjust the amount and need of subsequent medications that would be administered.

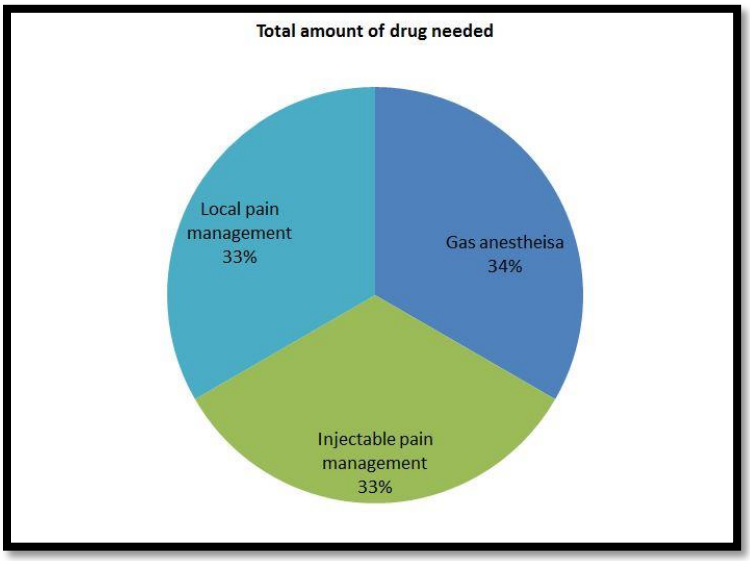
If we were to only use a gas anesthetic agent to anesthetize your pet for surgery we would need to use a large amount to reach a deep enough state of unconsciousness for surgery. This can have many negative effects on the patient's blood pressure and leaves them in considerable pain as gas anesthesia does not affect the perception of pain.



However, if we were add an injectable pain medication to specifically block receptors in the tissue and within the spinal cord we can reduce the amount of gas anesthesia we would have to use which would lower its negative effects. Also, we would be providing your pet some pain relief.

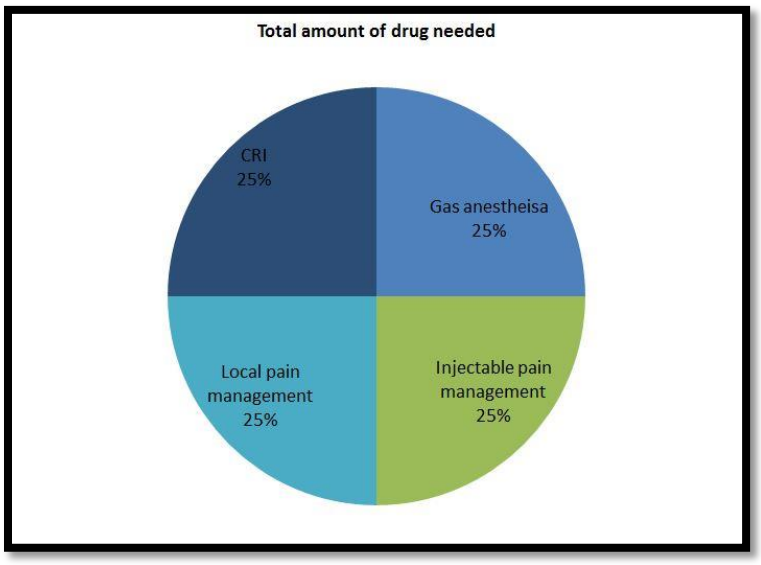


Now, if we were to add a local anesthetic agent we would then be able to reduce the amount of the other drugs we are using. Local anesthesia numbs a specific area. This is what your dentist does when you are having dental work done.

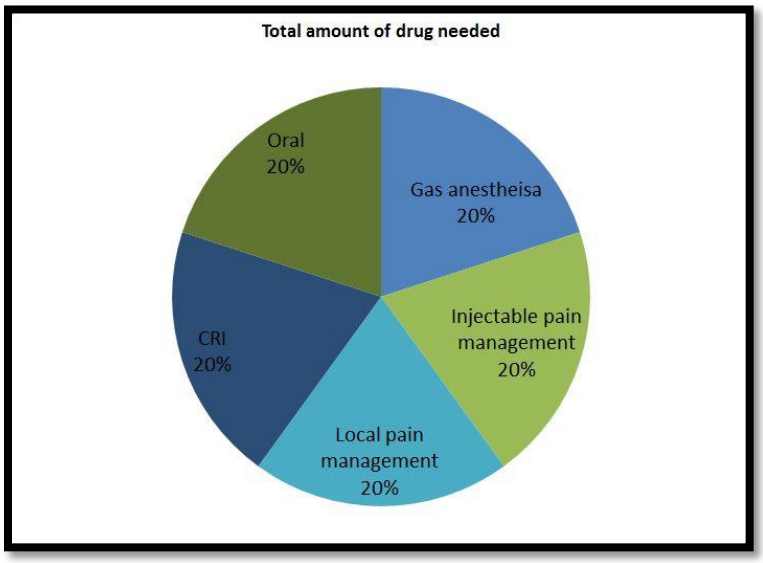


Adding a Constant Rate of Infusion (CRI) of pain blocking medications is a wonderful addition for complicated surgical procedures or painful abdominal illnesses. We utilize a fluid pump to administer

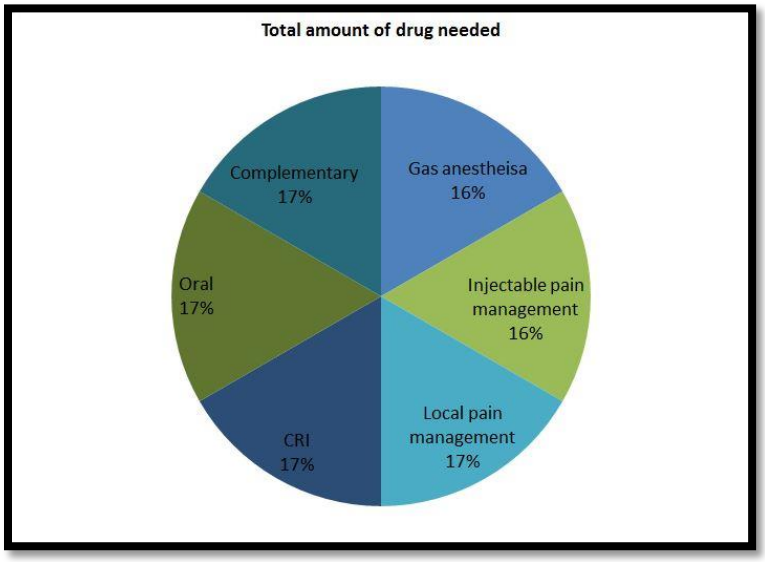
pain medications with intravenous (IV) fluids at a set amount per hour to provide consistent pain control over the course of the hour every hour as it is needed.



Oral pain medications, with or without anesthetic agents, can be given prior to anesthesia and surgery which again reduces the amount of drugs needed and helps minimize a phenomenon known as "Wind-up". For anticipated highly painful procedures, owners may be instructed to start the medications (occasionally multiple drugs) a few days prior to surgery. We will send home oral pain medications to be given after surgical procedures to help keep your pet comfortable during the recovery period.



Complementary pain management can include acupuncture and laser therapy. Acupuncture can be done both at the time of surgery and afterwards. Laser therapy can be done after surgery. Other options include heat therapy and cold therapy. In order to do this you would apply either a warm compress or a cool compress to the surgery site with a light pressure wrap (if possible) for several minutes several times a day.



At Cedar Grove Veterinary Services, we pride ourselves in providing several different forms of pain management for our patients and especially our surgical patients to keep them comfortable while still using the least amount of each drug possible to reduce the adverse effects of each drug. The most common anesthetic agent we use is gas anesthesia; however incorporating other forms of pain management allows us to reduce the amount of the gas anesthesia we use.

There are several different types of local anesthesia options including regional tooth blocks, line blocks at surgery sites, nerve blocks and infusion blocks. Regional tooth blocks are very similar to what your dentist does. A line block is local anesthesia under the skin at the surgery site to numb the skin prior to the veterinarian making their incision. Nerve blocks are very similar to regional tooth blocks however they ae used in other areas of the body targeting specific tissues. When we do a nerve block the patient will not be able to feel anything below the site that we are blocking. Infusion blocks are injections of a local anesthetic agent into an open wound or surgery site and then diffusing throughout the entire area. We can also utilize joint injections, primarily in our orthopedic work. Most of our local blocks last a few hours.

We utilize CRIs most commonly on surgical patients that are undergoing longer more extensive surgeries; such as any of our orthopedic surgeries as well as exploratory surgeries. Typically we start the

patient on the CRI prior to surgery and then continue the CRI during and after surgery for several hours. We utilize several different types of medications in the fluid bags for the CRIs depending on the needs of the patient. By using the CRI we are able to drastically reduce the amount of gas anesthesia we use on patients undergoing longer surgeries. Reducing the gas anesthesia will make the overall anesthesia safer and allow your pet to tolerate the longer procedure better.

Oral pain medications, such as gabapentin, can be given at home before you even bring your pet to the clinic helping to reduce the patients pain and anxiety while staying at the. Gabapentin has dual effects of pain control and mild sedation in our patients and is easy to administer making it a frequently used medication both before and after surgery.

Often, we will also provide additional oral pain medications such as non-steroidal anti-inflammatory drugs (NSAIDs) once they have returned home after surgery. This will allow them to remain more comfortable at home. When they are comfortable and quiet at home they will recover from surgery faster. Withholding pain medications because your pet is going to be too active after surgery will not help them recover faster. If they are too active we can prescribe a mild sedative to keep them calmer and allow the pain medications to work to the best of their abilities.

Complementary pain management includes acupuncture, laser therapy, heat therapy and cold therapy. Heat therapy will help relieve stiffness and muscle spasms. It will also help increase blood flow to the painful area which will help speed up healing. Cold therapy allows us to numb the site and reduce swelling and inflammation in that area.

To further illustrate the concepts highlighted, we have pictures of two dogs that have recently had surgery. On the left we have a dog that is showing us signs of pain by being in what is known as the prayer pose where they are positioned with their rear end up in the air and their front legs and head are lowered onto the floor. After seeing this posture, we administered additional pain medications. On the right we have a dog that is receiving a CRI as well as other pain medications. This dog is clearly resting comfortably.

Prayer Pose

Receiving a CRI