



PART 1:

Feline Anesthesia: A Comprehensive Protocol Starts at Home

A Good Feline Anesthesia Experience Is Important

Visiting a veterinary hospital can be stressful for many cats, and owners may be hesitant or resistant to bring their cat to the hospital for annual examinations or even treatment of medical conditions. One survey showed that 33% of surveyed cat owners were stressed just thinking about taking their cat to the hospital, and 58% of owners reported feeling that their cat hates going.¹ Hospitals should work to alleviate such concerns by providing the least stressful experience possible to ensure every patient receives the medical care it needs and deserves.

Anesthesia may be required for diagnostic procedures or treatment, which can add an additional level of stress to the patient and owner. In addition, any adverse effects or perceived negative experience related to anesthesia or the procedure could cause the owner to lose confidence in the hospital and prevent future veterinary care. Therefore, patients, owners, and veterinary hospitals and their teams can all benefit significantly from improving the feline anesthetic experience. Such improvements could even potentially increase an owner's willingness to pursue additional procedures that could be beneficial to their cat's future health.

Anesthesia Starts & Ends at Home

Anesthesia should not be restricted to what happens in the hospital. The ultimate goal of patient preparation for anesthesia is to smartly manipulate brain chemistry through behavior modification, changes in environment, and pharmacological intervention so that, at the time of premedication, the cat is tranquil and fear-free. The process of anesthesia should start and end at home. Cats that are presented for a planned procedure may be at the hospital for an entire day, and due to the potential impact of stress on cardiovascular health, flexible preanesthetic protocols should be implemented to prepare patients for their visit.

Explore this 2-part article to see how Peaches benefited from implementation of a feline-friendly, low-stress anesthesia strategy that started and ended in his home. This multi-step strategy is outlined in

Figure 1.



▲ **FIGURE 1** The feline anesthesia hospital visit cycle

Patients, owners, and veterinary hospitals and their teams can all benefit significantly from improving the feline anesthetic experience. Such improvements could even potentially increase an owner's willingness to pursue additional procedures that could be beneficial to their cat's future health.



▲ **FIGURE 2** A fit-for-purpose cat carrier

Ideally, carriers should be made of hard plastic, with openings on the top and side, and constructed so the top can be easily removed.

THE CASE

Peaches, a 10-year-old, neutered male domestic shorthair cat, was scheduled for a comprehensive oral health assessment and dental treatment, if required. Because of his history of anxiety during veterinary visits, the veterinary team provided a previsit protocol that emphasized the importance of an anesthesia-begins-at-home approach to reduce stress.



Step 1: Peaches at Home

Starting 1 to 2 weeks before the scheduled visit, Peaches' owner was advised by the veterinary team to place his carrier in a location in the home where he likes to spend his time. Placing the carrier in a location in which the cat is familiar and comfortable can help the patient become accustomed to the carrier, thus helping to eliminate any anxiety associated with the carrier when used for the journey to the clinic. Treats can be periodically placed in the carrier to entice the cat to create a positive experience and association. To simulate the day of travel, the carrier door can be closed while the cat is inside, then reopened after the cat has been praised or given a treat.

It is important that cats be transported in a fit-for-purpose carrier. Ideally, carriers should be made of hard plastic, with openings on the top and side, and constructed so the top can be easily removed (**Figure 2**). Soft-sided mesh carriers are also acceptable. Bedding that the cat is familiar with or that has a familiar scent can also be placed in the carrier to ease anxiety (e.g. a blanket the cat lays on that has not been washed, a favorite toy, an item of clothing belonging to the owner). Bedding can also be sprayed with pheromones and the carrier treated with pheromone wipes. Fifteen minutes should be allowed between spraying or wiping the carrier and exposing the cat to the pheromone to allow for the alcohol base of the pheromone formulation to evaporate.

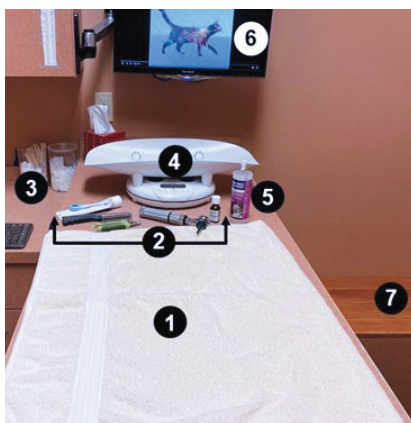
It was also emphasized to Peaches' owner to maintain their normal routine at home before the appointment for as long as possible to avoid anxiety escalating before arrival. Peaches was provided his normal meal the night before his visit. Any remaining food was removed in the morning. Water was available at all times prior to travel per the American Association of Feline Practitioners Anesthesia Guidelines.²

Gabapentin (20 mg/kg PO) was administered \approx 1 hour prior to travel for anxiety relief.³ Gabapentin, an analog of the neurotransmitter γ -aminobutyric acid, has good oral bioavailability (mean, 89%-95%) and is almost exclusively cleared by the kidney.^{4,5} It appears to work as a ligand of voltage-dependent calcium channels in the CNS, producing anxiolysis and sedation. Gabapentin can be administered with a small amount of wet food (ie, \leq 1 tablespoon) or treat. Decreased signs of stress during transportation and examination have been reported in cats after administration of gabapentin.⁶ A reduced gabapentin dose (6-10 mg/kg PO) should be used for patients with chronic kidney disease to avoid oversedation.⁷ Very fearful patients may benefit from an additional loading dose the evening before the appointment. For cats that experience motion sickness, administering maropitant (1-2 mg/kg PO) the night before the appointment is recommended.

Peaches was placed in his carrier and the door secured and left undisturbed for 10 to 15 minutes before departure to prevent him associating closure of the crate with travel. Because Peaches' owner followed the veterinary team's recommendations of previsit conditioning to help Peaches develop positive associations with the carrier, he learned that his carrier can be a safe place.



▲ **FIGURE 3** Hands and arms should be used on either side of the carrier to provide stability.



▲ **FIGURE 4** An example of a feline-friendly examination room: 1) warm towel to cover cold surfaces; 2) all equipment needed for the visit prior to patient's arrival; 3) plastic containers to avoid loud noises from metal; 4) a scale in the room rather than attempting to weigh patients in a treatment or waiting area; 5) pheromone spray to treat towels and other surfaces; 6) cat-specific music to soothe feline patients; 7) raised bench with a closed bottom where owners can sit and place carriers.



Step 2: Travel to the Clinic

Peaches' carrier was covered with a pheromone-treated towel, and the carrier was placed in the middle of the back seat of the vehicle and secured with a seat belt. The handle of the carrier should not be grasped during transportation, as this produces a swinging motion, which can scare the cat. Instead, the carrier should be held with both arms underneath it to provide stability (**Figure 3**). If the temperature outside is much different from room temperature, the vehicle should be heated or cooled to bring it to a comfortable temperature before the cat is loaded into the car.



Step 3: Arrival at the Clinic

Ideally, cats should wait in the car with their owners until an examination room is ready to avoid spending time in the lobby/waiting room area. The veterinary team and owner should communicate via phone/text regarding scheduling and performing this relocation in the quickest and least stressful way possible.



Step 4: Examination

Peaches was brought into a feline-friendly examination room (**Figure 4**), which should have:

1. A towel that has been pretreated with a feline pheromone spray.
2. All equipment required for a physical examination. This equipment should already be in the examination room before the patient's arrival to expedite the process and keep the veterinary team from leaving and reentering the room. Supplies include a rectal thermometer and lubricant, comb, nail clippers, and otoscope. One to two drops of essential oils can also be placed on a towel to try and soothe the patient (see **Suggested Reading**).
3. Plastic containers and lids to avoid sudden noises that can occur with metal containers.
4. A weigh scale. A scale in a common area outside the examination room increases the number of times the cat is handled, increasing the likelihood of exposing the cat to a stressor and the risk for escape.
5. Pheromone spray. The veterinary team should spray towels to be used in the examination room when opening the hospital and at lunchtime. For this particular patient, Feliway® was used, which has been shown to last 4 hours. If new towels need to be sprayed, 15 minutes should be allowed for the alcohol component of the spray to evaporate prior to using the towel or exposing the patient to the treated surface (see **Suggested Reading**).
6. Cat-specific music to help soothe patients. Based on published research, David Teie's *Music for Cats* is recommended and can be played in the examination room^{8,9} (also see **Suggested Reading**).
7. A raised bench to place a cat carrier on and for an owner to sit on. There should be no spaces in the examination room under which cats can hide. The carrier can be left open as a safe place for them to retreat.

The veterinary team clarified with the owner whether the at-home protocols were followed. If an owner was unsuccessful at administering the previsit medication to the cat, a team member can administer it at the hospital. In such situations, the patient should be left undisturbed while the drug is absorbed and allowed to take effect. A physical examination can be performed once the cat has become sedated.

The dental procedure to be performed and anesthesia were then discussed with Peaches' owner. Any questions an owner has can be answered at this time (e.g. number of extractions, will it hurt).

This article was created equally by **Sheilah Robertson, BVMS (Hons), PhD, DACVAA, DECVA, DACAW, DECAWBM (WSEL), CVA, MRCVS; Jenny Salpeter, DVM; and Kirby Pasloske, BSc (Hons), DVM, DVSc, DACVCP, MANZCVSc.**



Sheilah Robertson, BVMS (Hons), PhD, DACVAA, DECVA, DACAW, DECAWBM (WSEL), CVA, MRCVS
Courtesy Professor,
University of Florida
Senior Medical Director,
Lap of Love Veterinary Hospice



Jenny Salpeter, DVM
Brick City Cat Hospital
702 Magnolia Ave
Ocala, FL 34471



Kirby Pasloske, BSc (Hons), DVM, DVSc, DACVCP, MANZCVSc
Jurox (Canada) Inc.

Conclusion

A comprehensive, low stress anesthetic protocol that begins at home is critical to ensure a smooth veterinary visit for everyone. A good overall experience for Peaches and his owner will encourage future clinic visits and improved lifelong healthcare. Satisfied clients may also recommend your hospital to other cat owners and leave a positive review on social media.

Because the owner followed the recommended protocol, Peaches was calm upon arrival, allowing for a complete physical examination and preoperative blood work. The examination and blood work confirmed Peaches was fit to proceed with his dental examination. An anesthetic and analgesic protocol was created, which will be discussed in part 2 of this article, in which Peaches will resume his hospital visit at the premedication step (**Step 5**) of the feline anesthesia hospital visit cycle (**Figure 1**, first page).

References

1. Volk JO, Felsted KE, Thomas JG, Siren CW. Executive summary of the Bayer veterinary care usage study. *J Am Vet Med Assoc.* 2011;238(10):1275-1282.
2. Robertson SA, Gogolski SM, Pascoe P, Shafford HL, Sager J, Griffenhagen GM. AAFP feline anesthesia guidelines. *J Feline Med Surg.* 2018;20:602-634.
3. van Haaften KA, Forsythe LRE, Stelow EA, Bain MJ. Effects of a single preappointment dose of gabapentin on signs of stress in cats during transportation and veterinary examination. *J Am Vet Med Assoc.* 2017;251(10):1175-1181.
4. Siao KT, Pypendop BH, Ilkiw JE. Pharmacokinetics of gabapentin in cats. *Am J Vet Res.* 2010;71(7):817-821.
5. Adrian D, Papich MG, Baynes R, Stafford E, Lascelles BD. The pharmacokinetics of gabapentin in cats. *J Vet Intern Med.* 2018;32(6):1996-2002.
6. Pankratz KE, Ferris KK, Griffith EH, Sherman BL. Use of single-dose oral gabapentin to attenuate fear responses in cage-trap confined community cats: a double-blind, placebo-controlled field trial. *J Feline Med Surg.* 2018;20(6):535-543.
7. Trepanier LA. Applying pharmacokinetics to veterinary clinical practice. *Vet Clin North Am Small Anim Pract.* 2013;43(5):1013-26.
8. Snowden CT, Teie D, Savage M. Cats prefer species-appropriate music. *J Appl Anim Behav Sci.* 2015;166:106-11.
9. Hampton A, Ford A, Cox RE 3rd, Liu CC, Koh R. Effects of music on behavior and physiological stress response of domestic cats in a veterinary clinic. *J Feline Med Surg.* 2020;22(2):122-128.

Suggested Reading

Aura Cacia Tranquility Essential Oil Blend. <https://www.auracacia.com/aura-cacia-tranquility-essential-oil-blend-0-5-fl-oz>.

Feliway Blog. How long does FELIWAY take to work? <https://blog.feliway.com/us/how-long-does-feliway-take-to-work>.

Teie D. Music for Cats. Music for Cats website. <https://www.musicforcats.com>.

COMING SOON

Stay tuned for Part 2 to discover how Peaches' case concluded.

SPECIAL THANKS

We would like to give a special thanks to Peaches and his owner, Kathleen Burda (DVM), for allowing the authors to share Peaches' real life experience. We hope Peaches' experience will help improve the veterinary experience for all our feline friends and their owners.