Cats are not small dogs. Cats may be similar in size, but they are unique.

1. **Cats present differently when in shock.** Although dogs in early shock typically present in the hyperdynamic phase with an elevated heart rate, cats usually present in the hypodynamic phase and are dull, hypothermic, and bradycardic. No single test will determine whether a patient is in shock; instead, shock should be considered based on history, assessment (e.g., blood pressure, lactate), and results from the following physical examination perfusion parameters:

   • Capillary refill time: Normal is <2 seconds; it may be prolonged or absent in a dog or cat that presents in shock.
   • Extremity-core temperature gradient: Normal is 100 to 102.5° Fahrenheit.
   • Heart rate: Normal in small, medium, and large dogs is 90 to 120 bpm, 70 to 110 bpm, and 60 to 90 bpm, respectively. The normal rate in cats is 180 to 220 bpm.
   • Mentation: Both cats and dogs can present depressed, stuporous, obtunded, or coma-like.
   • Mucous membrane color: Normal is pink or pale pink; in cats or dogs in shock, the color is typically white.
   • Pulse quality: Normal is strong and steady, not pounding or weak.

2. **Cats metabolize drugs differently.** Some of the mechanisms through which drugs are metabolized by the liver are different or nonexistent in cats. Many drugs should initially be administered to cats in smaller doses. Interspecies variation and toxin risks must be considered when using the following and other commonly used medications:

   • Acetaminophen: Cats are more sensitive to acetaminophen because their hemoglobin structure makes them more sensitive to red blood cell (RBC) injury.
   • Azathioprine: This drug is used as an immunosuppressive in dogs but can destroy bone marrow in cats.
   • Cisplatin: Dogs tolerate this drug, but it can cause pulmonary-related death in cats.¹
   • Opioids: Cats are more sensitive than dogs to opioids (particularly pure μ-opioid agonists). Additionally, the

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¹ Cats and Tars: More than Just a Pair: Cats have an increased incidence of Heinz body formation.
bioavailability of oral opioids is generally poor in dogs, but studies have shown that buprenorphine absorption can be achieved in cats through nonspecific placement of the drug either on or beneath the tongue or into the cheek pouch. • Prednisolone: Cats are prescribed prednisolone because their livers are less efficient at converting prednisone to the active form.

**Cats require a lower IV fluid rate.** Feline patients on IV fluids should be closely monitored for fluid overload. Their smaller blood volume (55 mL/kg, compared with ≈78 mL/kg in dogs), lower metabolic rate, and higher occult cardiac disease incidence make them less tolerant of high fluid rates.

**Tachypnea in cats is typically stress-related.** Tachypnea (ie, polypnea) is an increased rate of breathing. Stress may cause some cats to open-mouth breathe on presentation; practices should decrease stress for cats by providing a separate, quiet waiting room or hospital ward away from barking dogs.

Tachypnea can result from the following disorders and diseases:

- Abdominal disorders (eg, masses, enlarged organs, fluid, bloating)
- Bronchial diseases (eg, bronchitis, cancer, parasites)
- Compression of the upper airway structures from thoracic changes (eg, masses, lymph nodes)
- Disorders of the nostrils and sinuses (eg, infection, narrowing, inflammation, cancer)
- Heart disorders (eg, congestive heart failure, arrhythmias)
- Hematologic diseases (eg, anemia)
- Hernias
- Laryngeal disorders (eg, swelling, collapse, paralysis, spasm)
- Lung disorders (eg, fluid, pneumonia, bleeding, clots, parasites, cancer, lung lobe twisting)
- Masses, lymph nodes, or tumors in the chest cavity
- Metabolic or endocrine diseases (eg, diabetes, Cushing’s disease)
- Miscellaneous disorders (eg, pain, fear, physical exertion, fever, heat, stress, obesity, drugs)
- Neuromuscular disorders (eg, trauma, cancer, inflammation)
- Pleural effusion (ie, fluid in the chest cavity)
- Pneumothorax (ie, air in the chest cavity)
- Soft palate disorders
- Tracheal (ie, windpipe) disorders (eg, tumors, collapse, foreign bodies).

**Cats have an increased incidence of Heinz body (HzB) formation.** This type of anemia, caused by the destruction of RBCs, is more likely to occur in cats than dogs and is usually a reaction to certain medications or caused by hyperthyroidism, lymphoma, diabetes, or something the animal has ingested. Cats may present with a fever, sudden onset weakness, anorexia, and pale mucous membranes. Feline hemoglobin is uniquely susceptible to oxidative denaturation. Heinz bodies are aggregates of denatured, precipitated hemoglobin within RBCs. Hemoglobin (Hb) protein globin chains are denatured through oxidative damage by reactive oxygen species; this damage is ongoing because of the continuous generation of free oxygen radicals from cellular metabolic pathways. Cats have 8 reactive S-H Hb groups per Hb tetramer—twice as many as dogs.

**Editor’s note:** Tracey Nowers has been a veterinary technician for 25 years and has always gravitated toward feline patients, even fractious ones.
ACTing Up

One goal of veterinary education is to produce successful graduates. Salary is often a combination of base added to percent age of production, so introducing veterinary students to this payment concept could be illuminating. In this study, students rotating through community practice at University of Georgia reviewed client communication skills and then embarked on their appointments with detailed estimate discussions and client follow-up. The average client transaction (ACT) was calculated at the end of the rotation. The authors hypothesized that certain factors (eg, class rank, species-specific track, gender, prior rotation) would affect the scores, but in the final analysis none of the suspected influences on revenue had any significant effect. Excluded from this study was the average appointment time and owner satisfaction and compliance; however, future work may take this into account. Being cognizant of how wages are made is an essential exercise for veterinary students.

Implementing activities that emphasize production is an important part of veterinary students’ learning experience. Graduating veterinarians must be able to produce money immediately upon entering practice; in fact, many are hired with the expectation that they will produce nearly the same amount as an experienced veterinarian. The reality is that it can take months to develop a rapport with other team members and years to develop relationships with clients. That rapport and those relationships often drive ACTs for a veterinarian, but graduates who immediately and fully use their veterinary technicians will overcome this hurdle quickly.

This study indicated that communication styles, which warrant further investigation, were not evaluated. However, nonverbal communication accounts for 55% of a delivery message and is a large part of relationship development. Paraverbal skills (eg, tone of voice, enunciation) account for 38%, and the words chosen to deliver a message for 7%. It is imperative that new graduates learn and implement successful communication styles, in addition to ACT awareness.—Heather Prendergast, RVT, CVPM

Reference


Top 5 Clinical Differences Between Cats & Dogs


September 2015 Veterinary Team Brief 47