

Clinical Report

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The Importance of Screening to Identify Hypertension in Senior Cats

The Importance of Hypertension

Hypertension affects $\approx 20\%$ of cats¹ and is often linked to other common feline diseases—most frequently chronic kidney disease^{1,2} but also hyperthyroidism. Untreated, chronic, progressive hypertension has the potential to cause significant morbidity, including target organ damage (eg, eyes, brain, heart, kidneys).³⁻⁵

Diagnosing hypertension early is beneficial for preventing target organ damage. In one study, cats diagnosed with systemic hypertension as part of a screening protocol had improved survival as compared with those that were diagnosed after being presented with clinical signs.¹ A hypertension diagnosis may prompt further screening due to the disease's correlation with other conditions. Hypertension and renal disease are often intertwined, with up to 74% of hypertensive cats also being azotemic and up to 65% of cats with CKD found to be hypertensive.⁴⁻⁹

The AAFP, AAHA, ACVIM, and International Society of Feline Medicine (ISFM) all recommend yearly screening in older cats, though recommended starting ages vary between 7 and 11 years.^{2-4,10}

Current State of Senior Cat Screening

Before senior screening can be pursued, pet owners must bring

their cat to the clinic. However, 21% of cat owners report taking their senior cat to the vet *less* than they did when it was young.¹¹ Further, some of the most recent data suggest that only $\approx 35\%$ of senior cats presented to a clinic receive senior screening.¹² Anecdotally, the percentage of clinics performing the type of screening relevant to hypertension (eg, sphygmomanometry, routine retinoscopic examination, urinalysis) is likely even lower, although published data are not readily available. It is up to the veterinary team to help get more senior cats to the clinic and recommend appropriate hypertension screening.

Overcoming Obstacles

Many owners may assume their cat is self-sufficient and in excellent health, especially if it has never been sick or lives completely indoors. In addition, cats typically hide signs of illness from their owner. Owners may perceive their cat as stressed at a veterinary appointment,¹¹ which can create challenges in handling and testing accuracy. In addition, some veterinary teams may have limited availability to appropriate clinic space for stress-free screening, adequate screening tools, time to thoroughly train staff, and/or time to perform accurate assessments.

Getting Senior Cats in the Door

Awareness of the need for low-stress environments and handling for cats has increased.¹³ There is an increasing number cat-oriented organizations that offer programs and resources designed to increase pet owner awareness, facilitate comfortable feline visits, and reduce avoidance of future appointments.

Fundoscopy

Because up to 100% of hypertensive cats may have retinal lesions,¹⁰ and because it is a noninvasive element of the

physical examination, funduscopy can be a powerful hypertension screening tool. In the same way practitioners perfect auscultation or palpation skills, routine ocular screening can improve clinicians' confidence and accuracy over time. A guide to performing a reliable fundic examination is provided in the April issue of *Clinician's Brief*. Abnormal findings can encourage reluctant pet owners to agree to additional screening.

Sphygmomanometry

There are many potential benefits to making hypertension screening routine so that every senior patient receives a blood pressure (BP) measurement. Routine testing may help staff members and clinicians obtain a patient's baseline values and understand what to expect for patients with different temperaments. It may also acclimate patients to the procedure. Routine BP measurements are opportunities to empower staff members, especially veterinary nurses, and to conserve clinicians' limited time.

Doppler sphygmomanometry and/or high-definition oscillometry are commonly used for measuring BP in cats.⁴ Regardless of the device used, a consistent protocol for BP measurement is essential for obtaining reliable values.¹⁰ Detailed guidelines are available from ACVIM and ISFM (see **References**).^{4,10} Teams can adapt their approach to minimize stress to their unique patient and practice environment; for example:

The patient exits the carrier on its own and is given 5 to 10 minutes to explore a quiet room. Before the physical examination, a staff member provides the patient with a warmed blanket for comfort and measures the patient's BP.^{4,10} One staff member is trained in the protocol and responsible for all measurements.¹⁰ Either the tail or a limb is used, and the cat is kept still.¹⁰ The average of multiple measurements is determined after discarding the first measurement.¹⁰

Updated Hypertension Classification & Blood Pressure Ranges with Associated Risk for Target Organ Damage¹⁰

Category	Risk for Target Organ Damage	Systolic Blood Pressure
Normotensive*	Minimal	<140 mm Hg*
Prehypertensive*	Low	140*-159 mm Hg
Hypertensive*	Moderate	160-179 mm Hg
Severely hypertensive*	High	≥180 mm Hg

*Category labels, some systolic reference ranges, and the exclusion of diastolic reference ranges are changes from the 2007 ACVIM Consensus Statement.¹⁴

Urinalysis

Key obstacles to routine urinalysis include lack of understanding by owners about its importance and their concerns about cost and urine collection. Proteinuria is significantly correlated with all-cause mortality, including mortality related to hypertension and chronic kidney disease.¹⁰ The ACVIM recommends routine urinalysis, including dipstick protein measurements, for all senior cats as part of the annual minimum database.³ The results of this simple test can support the need for further hypertension and/or renal screening.

Conclusion

Increasing wellness visits for senior cats and implementing an appropriate routine minimum database, including routine fundic examination, BP screening, and urinalysis, is essential for early disease detection, prevention, and management^{2-4,10} and provides a great opportunity for educating owners. Early identification and timely treatment of hypertension and/or associated conditions may increase both survival time and quality of life in senior cats.¹

References

- Conroy M, Chang YM, Brodbelt D, Elliot. Survival after diagnosis of hypertension in cats attending primary care practice in the United Kingdom. *J Vet Intern Med.* 2018;32(6):1846-1855.
- Hoyumpa Vogt A, Rodan I, Brown M, et al. AAEP-AAHA feline life stage guidelines. *J Feline Med Surg.* 2010;12(1):43-54.
- Pittari J, Rodan I, Beekman G, et al. American Association of Feline Practitioners: senior care guidelines. *J Feline Med Surg.* 2009;11:763-778.
- Taylor SS, Sparkes AH, Briscoe K, et al. ISFM consensus guidelines on the diagnosis and management of hypertension in cats. *J Feline Med Surg.* 2017;19(3):288-303.
- Maggio F, DeFrancesco TC, Atkins CE, Pizzirani S, Gilger BC, Davidson MG. Ocular lesions associated with systemic hypertension in cats: 69 cases (1985-1998). *J Am Vet Med Assoc.* 2000;217(5):695-702.
- Littman MP. Spontaneous systemic hypertension in 24 cats. *J Vet Intern Med.* 1994;8(2):79-86.
- Stiles J, Polzin D, Bistner SI. The prevalence of retinopathy in cats with systemic hypertension and chronic renal failure or hyperthyroidism [1994]. *J Am Anim Hosp Assoc.* 1994;30(6):564-572.
- Kobayashi DL, Peterson ME, Graves TK, Lesser M, Nichols CE. Hypertension in cats with chronic renal failure or hyperthyroidism. *J Vet Intern Med.* 1990;4(2):58-62.
- Syme HM, Barber PJ, Markwell PJ, Elliott J. Prevalence of systolic hypertension in cats with chronic renal failure at initial evaluation. *J Am Vet Med Assoc.* 2002;220(12):1799-1804.
- Acierno MJ, Brown S, Coleman AE, et al. ACVIM consensus statement: guidelines for the identification, evaluation, and management of systemic hypertension in dogs and cats. *J Vet Intern Med.* 2018;32(6):1803-1822.
- Volk JO, Felsted KE, Thomas JG, et al. Executive summary of the Bayer veterinary care usage study. *J Am Vet Med Assoc.* 2011;238(10):1275-1281.
- American Animal Hospital Association. *The Path to High-Quality Care: Practical Tips for Improving Compliance.* American Animal Hospital Association; 2003.
- Lloyd JK. Minimising stress for patients in the veterinary hospital: why it is important and what can be done about it. *Vet Sci.* 2017;4(2):22.
- Brown S, Atkins C, Bagley R, et al. Guidelines for the identification, evaluation and management of systemic hypertension in dogs and cats. *J Vet Intern Med.* 2007;21(3):542-548.