

# Diagnosis of Systemic Hypertension

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Systemic hypertension in veterinary medicine can occur in both dogs and cats. It may be seen in animals with chronic renal failure as well as those with neurologic, endocrine, and cardiac disease. Evidence of hypertensive injury includes hemorrhage within the retina, vitreous, or anterior chamber; retinal detachment and atrophy; retinal edema and vascular tortuosity; and glaucoma. Left ventricular hypertrophy may also be seen. Tachycardia is uncommon unless the hypertension is associated with such diseases as feline hyperthyroidism. Definitive diagnosis is made by determination of systemic arterial blood pressure. Direct blood pressure measurements are not practical in veterinary medicine, and indirect or “cuff” measurements are commonly used. It is important to use a cuff appropriate to the size of the animal or abnormal results will be obtained. The ideal cuff should be 30% to 40% of the limb circumference. Blood pressure levels are based on risk for future target organ damage (< 150 mm Hg minimal, 150 to 159 mm Hg mild, 160 to 189 mm Hg moderate, > 180 mm Hg severe). Acute onset of blindness is one of the most common presentations of severely hypertensive animals. Other signs include seizures, head tilt, and depression. Animals presenting with blindness, hyphema, seizures, ataxia or collapse, or labored breathing or those at risk for hypertension due to an associated disease (chronic renal failure, hyperthyroidism, obesity, hyperadrenocorticism, diabetes mellitus, mineralocorticoid-secreting tumors, or pheochromocytoma) should be screened.

**COMMENTARY:** This manuscript makes the point that hypertension is an emerging disease and may be more important in cats (most important vascular disease and cardiovascular disease in cats older than 12 years of age) than in dogs and that varying target organs are at risk, but some are more vulnerable than others. The author concisely demonstrates how blood pressure is measured in veterinary patients and how it can be difficult due to technical limitations as well as anxiety-induced hypertension resulting simply from the measuring process. An excellent point is made that blood pressure measurement in veterinary patients should not be indiscriminant to avoid high numbers of false-positive diagnoses. Finally, it is important to emphasize that hypertension may be idiopathic and, when diagnosed early (whether idiopathic or secondary), gives the veterinarian an opportunity to slow progression of renal disease (and disease of other target organs)—a syndrome that is fatal to a great number of older feline pets.—*Clarke E. Atkins, DVM, Diplomate ACVIM (Internal Medicine/Cardiology)*