

# Systemic Hypertension

## What is Systemic Hypertension?

- Blood pressure (BP) is the force exerted by circulating blood on the walls of blood vessels.
- Blood volume, constriction or dilation of the arteries, and heart rate all have an effect on blood pressure.
- In humans, measured as:
  - Systolic pressure (immediately following ejection of blood from the heart).
  - Diastolic pressure (just prior to ejection of blood from the heart).
  - It is represented as systolic pressure/diastolic pressure, e.g. 120/80 mmHg.
- In pets, we typically only measure the systolic pressure (top number).
- Normal systolic pressure in dogs and cats is in the 120-130 mmHg range.
- An allowance of up to 160 mmHg systolic is often used since many of our patients are quite anxious in the hospital setting (“white coat effect”). Just like in humans, pets can have high blood pressure or systemic hypertension.

## How is Systemic Hypertension diagnosed?

- A CVCA nurse will usually measure your pet’s blood pressure at each visit. Blood pressure measurement in a pet is similar to the method used at your doctor’s office, but instead of a stethoscope, we use a Doppler probe to listen for pulses.
- Blood pressure measurement is usually recommended in:
  - Any dog or cat over the age of 7-8.
  - Any pet who has been prescribed cardiac medications.
  - Pets with certain underlying diseases that may predispose them to high blood pressure.
- Systemic hypertension is diagnosed by repeatable measurements of an elevated blood pressure.
- When blood pressure is chronically increased, it has negative effects on many of the body’s organs including the eyes, brain, spinal cord, kidneys, and heart.

- Symptoms directly attributable to hypertension include:
  - Sudden blindness
  - Behavioral changes
  - Lethargy
  - Nose bleeds
  - Congestive heart failure
  - Stroke-like symptoms
- Blood work and a urinalysis are indicated to help determine a potential primary cause for your pet’s systemic hypertension.
- Additional diagnostic testing such as an abdominal ultrasound may also be recommended to help find an underlying disease condition that is responsible for the high blood pressure.

## What are the causes?

- Primary or Essential Hypertension (not resulting from an underlying disease) is uncommon.
- Secondary hypertension may result from concurrent endocrine disorders like Cushing’s disease, diabetes mellitus and hyperthyroidism. In addition hypertension is commonly associated with chronic kidney disease in dogs and cats.

## Treatment

- Treatment of the underlying disease may result in lowering of the blood pressure to a point where anti-hypertensive medications are not required.
- Medications may be used to lower blood pressure and to prevent damage to other body organs.
- Modification of dietary habits and body condition may be helpful in the management of hypertension.
- In every case, regular monitoring of blood pressure with your primary care veterinarian and/or CVCA is required to ensure adequate reduction of your pet’s blood pressure to a safe range.

