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Heat Stroke

Heat stroke is a syndrome often seen during the first hot or sunny days in spring and summer. The circumstances that lead to this life threatening condition include leaving a pet outdoors without adequate shade and water, exercise induced heat stroke (especially for pets not used to physical activity), and leaving a pet inside a parked car. A study by the Stanford University Medical Center “showed that a car’s interior can heat up by an average of 40 degrees F within an hour, regardless of ambient temperature. Eighty percent of the temperature rise occurred within the first half-hour.” Automobiles that are left in the direct sun will have an interior temperature increase of 3-4 degrees every 5 minutes, and even if the outside temperature is cool can still increase to an excess of 100 degrees. Cracking the windows does not slow the rate of temperature increase, nor does it decrease the maximal temperature. It doesn’t have to be “hot” outside for it to be dangerous for your pet. Pets that are not acclimated (slowly introduced to warm temperatures) are at the highest risk for heat stroke as are those who are obese or have brachiocephalic airways (smushed faced dogs such as bulldogs). Long hikes or runs with dogs on the first nice day of the year, especially when pets have been sedentary through the winter can put them at significant risk for heat stroke.

Heat stroke occurs when the pet’s internal temperature increases to a point where they have compromise to their internal organs. Initially the body pools blood at the skin to try to dissipate heat. This causes decreased blood flow to internal organs. As the internal temperature rises and stays elevated for a prolonged period the tissues suffer from a lack of oxygen and destruction of the proteins that make up the cells. The most common and severely affected organs tend to be the intestines, kidneys, brain and heart. Changes in the blood vessels can result in abnormal blood clot formation that can further compromise organs and is known as DIC. Signs of heat stroke include excessive panting, lethargy, bloody vomiting or diarrhea, coma, seizures and even death.

Treatment for heat stroke should begin as soon as a pet is suspected of overheating. Move the pet to a cool, shaded area, wet them with room temperature water (do not use cold water as it can cause the blood vessels in the skin to constrict, further affecting their ability to regulate temperature), and place a fan on them if available. You can also place cool, wet towels on them, and wet their paws and ear flaps. If you are able, determine a rectal temperature. Be cautious of aggressive over-cooling, as this can be dangerous as well. Do not attempt to force your pet to drink water, but make sure it is available if they are alert and show interest in drinking. Do not leave your pet unattended and transport them to the veterinarian immediately.

Hospitalization is recommended for pets who are suffering from heat stroke, as it can lead to severe internal damage and can be fatal. Severely affected pets will need significant supportive care, tests to check for organ damage and monitoring. Survival can be as low as 50% for severely affected patients, but the quicker treatment begins the better their outcome may be.