WHAT IS IT?
Here in the South, it often seems like summer lasts all year with elevated temperatures and high humidity. That said, heatstroke in our canine companions is a very real issue that can be easily prevented. By definition, heatstroke is an excessively elevated core body temperature to the point that thermoregulation is no longer successful. Normal, resting body temperature ranges from 100.5—102.5 degrees Fahrenheit. When body temperatures rise beyond 106F with no previous clinical signs of illness, it is most likely a direct result of excess exposure to external heat and is commonly referred to as heatstroke. If not treated immediately, it may result in multi-organ failure. Such progression could manifest as disseminated intravascular coagulation, acute renal failure, gastrointestinal sloughing, hepatic failure, cerebral and pulmonary edema, as well as bone marrow dysfunction, and potentially death.

WHY DOES IT HAPPEN?
Unlike humans, dogs have very few sweat glands, limited to the footpads. In moderate conditions where ambient temperatures are below 89.5 degrees Fahrenheit, dogs can often cool themselves effectively via physiologic mechanisms. As temperatures rise, however, dogs rely more on evaporative cooling via panting to dissipate body heat. This is made less efficient with increasing environmental humidity. As core body temperature rises, clinical signs of heatstroke may become evident. These include hypersalivation or drooling, increased panting, vomiting, diarrhea, lethargy, and collapse.

WHO IS AT RISK?
While all dogs are at risk for heatstroke under certain conditions, some dogs may indeed be more predisposed to heatstroke than others. Brachycephalic breeds, or dogs with shortened, “smush” noses such as boxers, pugs, etc. have anatomically restricted airways that may predispose them to heatstroke under even moderately elevated ambient temperatures. Dogs that are obese or suffer from cardiovascular or respiratory disease may also be predisposed. Pediatric and geriatric dogs as well as dark- or long-haired dogs are more at risk as well. Of course, external factors also play a role. Leaving animals in poorly ventilated, enclosed spaces such as vehicles, dog houses, or sheds for even a few minutes may result in heatstroke. Strenuous exercise and muzzling may also rapidly increase core body temperature. Poor acclimation to outdoor conditions may predispose dogs to heatstroke as well. This is especially important to remember in the spring when temperatures are rapidly climbing.

HOW IS IT PREVENTED?
Preventing heatstroke is much preferred to treating heatstroke, and it is very easily achieved. Avoid exercising dogs during extremely hot times of the day. Save walks for early mornings and late evenings, and be especially careful when exercising brachycephalic breeds. Stop frequently
for water breaks and time in the shade. Don’t leave dogs outside or in direct sunlight without access to shade and water. Never leave a dog in an enclosed space such as a shed or a vehicle. Even a few minutes can cause severe, potentially irreversible damage.

WHAT SHOULD BE DONE?
If you notice the signs of heatstroke (hypersalivation, increased panting, vomiting, diarrhea, lethargy, or collapse), immediately take your dog to a veterinary hospital or clinic. Begin active cooling during transportation only if it does not delay travel time. Active cooling involves wetting your dog to the skin with cool, not cold, water. Extremely cold water will only cause the animal to vasoconstrict and thus retain body heat. Roll the windows down in the car to increase ventilation and cooling by evaporation. Offer water as soon as possible. If heatstroke is left untreated or if treatment is delayed, it may progress to multi-organ failure. Depending on the stage of the disease and how the animal presents, further supportive care may be necessary.

REFERENCES


