

Dogs Don't Sweat

Spring is here and so are warmer temperatures. If you are a dog owner it is important to remember that dogs don't sweat. Because of this they are prone to developing heat exhaustion and heat stroke. It is never OK to keep your dog in a parked car on a warm or sunny day even with the windows cracked or open.

Dogs, just like people, have mechanisms to control the body's internal temperature (thermal homeostasis). Thermal homeostasis is the balance of heat load (environmental heat, heat generated through metabolism and exercise) and heat dissipating mechanisms controlled by the temperature center in the brain. In dogs 70% of heat loss is by conduction and convection through the skin. As body temperature increases blood is sent to small vessels underneath the skin allowing the blood to cool. Dogs also rely on evaporative cooling through the respiratory tract by panting. When the outside/ambient temperature is the same as the dogs' temperature they predominantly rely on panting to cool themselves.

High environmental temperatures and exercise are two common heat loads that can result in extreme elevations in body temperature of dogs. The inside temperature of a car on a sunny or warm day can become greater than 100 F quickly even with the windows open. At this temperature dogs rely primarily on panting to cool themselves. The excessive heat load combined with limited ability to dissipate heat will result in extreme body temperature increases. Exercising during times of high ambient temperatures can also cause the body temperature of dogs to increase rapidly. In many cases the loss of heat through panting and through the skin is not enough to keep their body temperature normal. Most dogs will run until their owner says it is time to stop even if they are in a state of heat exhaustion.

Signs your dog may be suffering from heat exhaustion include prolonged heavy breathing, bright pink to red lips/gums, weakness, lethargy, depression, diarrhea, body temperature above 102.5. As the body temperature rises inflammatory mediators are released causing inflammation throughout the body. This has an effect on all major organs of the body. The intestines can be damaged resulting in severe bloody diarrhea. Severe damage to the liver can also occur. Damage to the heart muscle is common resulting in arrhythmias (abnormal heart beats). Nerve damage and cerebral edema (swelling of the brain) are often seen in severe cases. Acute kidney failure is also common especially if the dog is severely dehydrated. Mechanisms to control clotting can also be affected, leading to spontaneous bleeding. Once the body temperature is above 109F irreparable organ damage occurs.

If you suspect your dog is suffering from heat stroke take them to the nearest veterinarian immediately. If you are 30 plus minutes out you can soak the dog with water and use a fan on them. Cooling a dog before seeing a vet should be done cautiously. The water should be cool but not cold. Soaking the dog's feet and placing cool towels on the abdomen can work well. Once the body temperature is down to 103 F active cooling should be stopped. It is not

uncommon for heat stroke victims to be lower than normal body temperature by the time they get to the veterinarian. The extremely elevated body temperature seen in dogs with heat stroke can upset the temperate regulation system in their brains. This makes it hard for them to maintain a normal body temperature once they are cooled. This also makes it more likely for heat stroke victims to have future episodes of heat stroke, even in less extreme environments.

In cases of suspected heat stroke I will place an IV catheter and start fluids immediately. Bloodwork is run to evaluate the patient for organ damage and clotting abnormalities. Depending on the dog's response to treatment and blood work results the patient may be back to normal in several hours. In more severe cases the dog may need to spend several days in the hospital with further treatments and monitoring. In severe cases dogs can die even with aggressive treatment.

You should take several precautions to avoid heat stroke. 1: Never leave your dog in a car on a sunny or warm day, even if the windows are open. If it is going to be a warm day leave your dog at home. 2: When you know it is going to be a hot day, exercise your dog in the early morning or late afternoon/evening 3: If you are exercising with your dog on a warm/hot day take frequent breaks, offer plenty of water (at least as much as you are drinking), exercise along a stream or water source, and keep the hair coat damp.

If you have any questions about heat stroke call 303-674-7400 or email info@elkmeadowvet.com. Stop by Elk Meadow Animal Hospital to meet the staff, take a tour of the hospital, and receive a free collapsible water dog bowl.