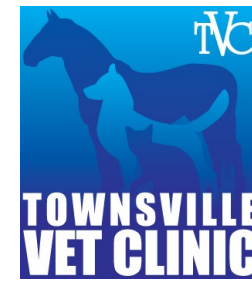


Outcome

Currently there are not enough studies to convincingly say what the outcome for an animal will be. One study has revealed a 50% mortality rate detailing risk factors increasing mortality such as, hypoglycaemia (decreased blood glucose) prolonged blood clotting times at admission, elevated creatinine (kidney marker) at 24 hours, delayed admission to the hospital of over 90 minutes, seizures and obesity.

Heat stroke can result in multi-organ dysfunction that can be life-threatening to your pet.

Successful treatment involves quick recognition and protocols aimed at rapid cooling and support of the affected body systems.



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HEATSTROKE IN DOGS



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What is heatstroke?

Heatstroke is defined as a state of extreme hyperthermia $\geq 41^{\circ}$ resulting in thermal injury to tissues and cells, which occurs when heat generation exceeds the body's ability to dissipate it.

How does it happen? And what can I do to prevent it?

Most heat stroke cases occur during heatwaves and result from owners leaving their dogs locked in cars, tied up with inadequate shade and water, locked up in garages, and/or over exercising in the heat of the day. Occasionally it is exacerbated by underlying issues within the animal such as obesity, dehydration or heart issues.

Preventing heat stroke in these circumstances is a matter of being able to recognise early warning signs and acting quickly.

What do I look for?

Look for the following signs if you suspect something is wrong with your dog, signs are often variable but the most common are:

- ◆ Confused or dazed mentation
- ◆ Increased heart rate
- ◆ Drooling and salivating
- ◆ Panting and breathing difficulty
- ◆ Tongue may be bright red or purple colour
- ◆ Vomiting/diarrhoea with or without blood
- ◆ Muscle tremors
- ◆ Weakness
- ◆ Seizures
- ◆ Collapse
- ◆ Coma



Can I do something?

Owners can initiate immediate treatment prior to veterinary intervention by active cooling. This can be by hosing cool water onto your pet, putting them in air conditioning or in front of fans. Don't use ice-cold water or ice as this can cause their outer blood vessels to constrict and exacerbate the problem.

Please take your pet to the nearest vet to provide emergency medical treatment, which may include putting your pet on intravenous fluids, oxygen and medications. Blood tests and hospital treatments are dependant on the severity of symptoms. Once again, be aware of your pets in these hot conditions, it only takes a matter of minutes for an animal to succumb to heat stroke.



Predisposing factors

Predisposing factors for heat stroke can be;

1. Environmental conditions; they can decrease heat loss e.g. increased ambient temperature, humidity, poor ventilation and water deprivation.
2. Patient factors; such as any condition or medication that interferes with the ability of the body's normal response mechanism. Things such as laryngeal disease, brachycephalic anatomy (pugs, bulldogs etc), cardiovascular disease, central or peripheral nervous system disease, obesity, thick coat, age and certain medications. Excessive heat production can occur through extreme exercise, seizures, hormonal hyperthermia, drugs and some toxicities.

Complications from heatstroke

Complications are a common sequela and can include many systems such as the kidneys, heart, liver, gastrointestinal and neurological systems, to mention a few. Your vet's initial assessment of your pet with clinical signs will include a PCV/TP (Packed cell volume and total protein), blood glucose, electrolytes and blood urea nitrogen and/or creatinine.

Other tests will include complete blood count, blood coagulation testing, blood chemistry and urinalysis.

Treatment

The sole aim of treatment is to gradually lower the body temperature to 39.5° then cooling will be stopped to prevent hypothermia.

Your pet may also need intravenous fluid therapy to replace fluid loss, glucose supplementation to balance electrolytes and acid-base abnormalities. Additional therapy will be carried out for any affected body systems. Seizures will be treated with anti-convulsants.

The gastrointestinal tract will have protectants and antibiotic therapy instituted if bacterial translocation is suspected. The patient should be closely watched for the development of pulmonary oedema.

Non steroidal anti-inflammatory agents are avoided due to increased risk of gastrointestinal bleeding, decreased platelet function and impaired renal function.

Serial examinations and lab work are regularly done to quickly identify any further complications.