Dogs Victoria Fact Sheet
Health & Wellbeing

Heat Stroke and Heat Stress in Dogs

Every summer, all across the country, veterinarians see animals affected by heat stroke and heat stress. Although most owners take extra care with their pets when the weather is particularly hot, many are unaware that their pets may be at risk of suffering from these conditions even when the ambient temperature is not all that high.

As humans, we understand that when the weather is particularly hot, we need to do things to keep ourselves safe and cool – avoid strenuous exercise, drink plenty of fluids, and stay in the shade or air-conditioning.

Our pets also need special consideration as they are just as likely to suffer from the heat as we are, and some breeds (and mixes of some breeds) are particularly susceptible to the effects of heat and require extra care and attention.

Maintaining a Stable Body Temperature

All animals need to maintain their internal body temperature within a relatively narrow range for normal body function to occur. The body has mechanisms in place to help cool and warm the body should the internal temperature rise or fall. Outside of this ideal temperature range, functions and processes begin to shut down or no longer work properly, and permanent damage to organs or even death can occur.

In humans, when our core temperature rises beyond a certain point, sweat is released by glands in our skin. Small capillaries dilate, and blood is pumped to our skin surface, where the evaporative cooling effect of the sweat helps disperse excess heat. Because we produce sweat all over our body, we have a large surface area available for cooling our bodies.

Our dogs only produce sweat through glands in the pads of their feet and nose, so they rely on evaporative cooling via their respiratory system. We have all see our dogs pant. Panting moves air very quickly across the moist respiratory surfaces in the dog's nose and lungs, having the same evaporative cooling effect as sweat does.

All evaporative cooling systems have limitations. The level of humidity in the surrounding air determines its effectiveness. If the humidity is high, less evaporation, and hence less cooling can occur. This is why you often feel hotter and sweatier at lower temperatures in tropical environments than you would in dryer climates. Luckily, here in Victoria, we generally have lower humidity through the hotter months than the more northern states.

Of course, humidity can be very different in a confined space where evaporated water from the body or panting cannot escape due to lack of airflow. Confined spaces include things such as cars, dog trailers, transport cages or kennels. Body temperatures can rise very quickly in these small spaces, as the ability to cool down is drastically reduced.

Evaporative cooling causes significant loss of fluids and salts from the body. These changes and losses are nearly impossible to see, so maintaining adequate hydration on hot days is critical.

In our pet dogs, there is also an increased exchange of oxygen and carbon dioxide in the lungs due to panting, causing other changes within their bodies.

Head Shape In Dogs can Affect Cooling

Our dog breeds come in many shapes and sizes. Obviously from an evaporative cooling standpoint, the larger the surface area available for cooling, the more efficient the cooling mechanism is going to be. Dogs with shorter muzzles or 'flat' faces are certainly at a disadvantage when trying to cool the body down.

Brachycephalic dogs (brachy=short, cephalic=head) are at particular risk of overheating, even at low ambient temperatures.

Anatomical changes that may be associated with this head shape, such as small nostrils, an elongated soft palate, or a narrowed windpipe can potentially reduce the animal's ability to move air effectively – even at rest. The shape of their head also means that there is far less space for evaporative cooling to take place.

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Brachycephalic breeds (and their mixes) are very popular as pets. If you have a dog with a shortened head or muzzle, you need to take extra care to ensure they do not over-heat. Make sure you ask your vet about what to look out for and take extra care on hot days.

What are the Symptoms of Heat Stress and Heat Stroke in Dogs?

The terms 'Heat Stress' and 'Heat Stroke' indicate different stages of elevated internal temperature.

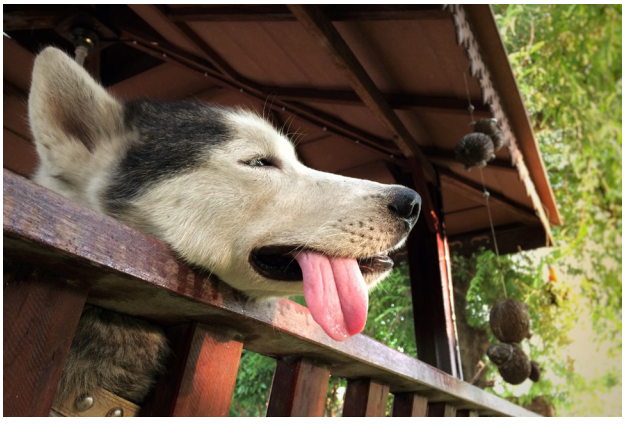
Heat Stress symptoms occur as the normal mechanisms fail to provide enough cooling, and the internal body temperature starts to move outside the normal range.

Heat Stroke symptoms are more severe, and occur as the internal body temperature moves further and further into the danger zone for permanent organ damage and death.

Symptoms include:

Heat Stress – panting that has become harder, faster and louder than usual, salivation or drooling, whining or other forms of vocalisation, increased heart rate, listlessness (the dog cannot settle)

Heat Stroke – panting that has become loud or excessive, saliva that is thick, wobbliness or inability to move properly, strange behaviour, vomiting, diarrhoea, collapse, seizures and death.



What should you do?

Heat Stress

If your dog looks to have the beginnings of Heat Stress, you need to act quickly to help your dog's cooling mechanism function better and to prevent additional heat build-up.

Strategies may include:

- Stopping any exercise
- Moving your dog into a shaded area, or an air-conditioned space
- Making sure your dog is in a cleared space where there is adequate airflow and ventilation
- Providing plenty of cool, fresh water
- Provide additional cooling – sit them on a wet towel, wipe them down or gently hose them with cool water.
- You can stand your dog with its feet in cold water
- Ice packs covered with a damp cloth to prevent cold burns can be placed either between your dog's thighs or in its armpits provided you check the skin in these areas frequently for irritation or redness. Avoid using ice, ice packs or iced water on the dog's skin in other places as this can cause surface blood vessels to contract. If the blood flow to the skin is reduced, the effects of evaporative cooling will be slowed.

Remember: if you use a 'Cool Coat' or wet towel over the dog's back it must remain moist and cool to the touch – it relies on evaporative cooling too! If there is inadequate air movement, or if it dries, it will act like a blanket holding the heat in.

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DOGS VICTORIA
YOUR CANINE COMMUNITY

Heat Stroke

Any dog with a rectal temperature of more than 41.6 degrees is considered perilously hot.

If you think your pet is moving into Heat Stroke, you need to act quickly – begin the cooling process and call your vet immediately!

Internal body temperatures that cause Heat Stroke can cause permanent organ damage and, even if the body is cooled down, there can be delayed complications (such as brain swelling and shock) that are just as life-threatening. There is also a risk that rapid cooling could lead to hypothermia (an internal temperature that is too low) which can have additional consequences.

The quicker you can get your dog to the vet, the better. Your vet can administer medications to reduce the risk of complications, and can use intravenous fluids to assist with cooling. They are in a better position to monitor the core body temperature and to address the more complicated side effects of Heat Stroke on the body.

Preventing Overheating in Your dog

At Home:

- Make sure your dog always has access to shade and adequate cool, fresh water.
- Make sure water containers cannot be accidentally tipped or spilled by the dog.
- On hot days, check your dog regularly. You may need to change your routine and allow your dog access to cooler areas – remember kennels or confined places such as sheds or garages often have very poor airflow and maybe hotter than being outside.
- Provide additional cooling and airflow when your pet is hot – bring your dog into the air-conditioning, use fans to increase air movement, provide cool, wet towels to lie on, or add ice to water bowls. You might even consider a small 'kiddy' pool for your dog to splash in if it is safe to do so.

During Travel:

- Avoid transporting your dog on hot days and, if you have to, always ensure the transport vehicle is cool before loading your dog.
- Plan trips in the cooler parts of the day and make sure there is plenty of air circulation in the vehicle to allow humidity to disperse
- ***NEVER*** leave your pet locked in a vehicle, even for a short time, if the weather is warm.
- If you travel your dog in a 'pet-pack' or crate, ensure that there is adequate ventilation to prevent heat building up within that space.
- Take extra care travelling with Brachycephalic breeds.

During Exercise:

- During hot weather, only exercise your pet in the cooler parts of the day and avoid hot surfaces like pavements or roads, which can radiate heat well after the sun has gone down.
- In the warmer weather, avoid high-intensity activities like chasing a ball, and instead opt for a calmer on-leash walk.
- If your dog is panting heavily, take a break from whatever you are doing, go and sit in the shade.
- If your dog does not look interested in exercise on a hot day, simply let them rest.