It’s hot, but I need to ride!

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Many equine activities take place during the summer. However, the heat can be dangerous for our horses, who let’s face it, are doing more work than us. So what can you do to provide assistance to the horse for cooling?

Obviously we need to carefully monitor our horse throughout activity. We can help actively cool our horse through the four ways animals dissipate heat: the process of radiation, conduction, convection and evaporation.

Sweating obviously employs evaporation as a major way for the horse to dissipate heat. Clearly a well hydrated horse is necessary to maintain steady sweating rates to dissipate the thermal load. The environment plays a great role in how effective evaporative cooling may be. High humidity levels will limit evaporation, which is why paying attention to the heat index is so key. Water applied to the horse can greatly aid in cooling as it evaporates off the horse’s body but high humidity can really hamper evaporation. Applying cool (not cold) water to areas which have large blood vessels near the surface of the body is very effective in lowering body temperature. Blood will cool as it passes through these areas and then return to the trunk of the body to help dissipate the heat load. These areas include the legs of the horse and the neck of the horse. The major blood vessels in the horse’s leg lie to the inside, so pay more attention to applying water to these areas. Continual application of cool water will prevent the warming of the water on the surface of the horses’ skin. Otherwise, use a scraper to remove the warmed water and increase the rate of evaporative cooling.

Convection is another major way that an animal loses heat. Convection simply is the heat that is lost due to air movement. If you think about wind chill factors in the winter, you can easily see how effective wind is in cooling! Supplying fans or keeping the horse in an area with wind flow is ideal. Misters with fans are often used in dairies in aiding with cow comfort, combining these effective cooling techniques. If humidity is not high, these are fantastic methods to keep horses cool. Fans with higher velocities will also provide more effective cooling. If you live in a hot climate and have access to electricity, putting a fan near the arena will aid in cooling during rest periods. Always make sure that your horse’s working heart rate and respiration rate have dropped to near resting levels after a rest period before returning to work. If not, this may indicate the horse is in distress.

We often think of radiation as a way to add heat to a system, but radiation simply means heat transfer through space. The sun adding heat to the horse is an example of radiant heating. We can avoid additional heat load by keeping the horse in the shade or riding in shaded areas. The horse can also transfer its heat through space to any object that is cooler that it is. While not practical, horses standing next to ice blocks would be radiating heat to the block. However, standing under trees allows the horse to radiate some heat up to the leaves of the tree which are continually cooled by their own evaporative process. Therefore, natural shade from trees is actually cooler than shade from man-made structures.

Finally, the last method of heat transfer is through conduction, or the direct transfer of heat between objects of differing temperatures. An example of conductive cooling would be a dog lying on a cooling mat or digging into the cool earth. Placing a cool ice pack or towel on the horse will aid in cooling. Ice
packs and towels need to be changed when they warm up from conduction. This is why cool water applied to the horse’s body helps to cool it. Remember the key is that the water is cool, not cold. Cold water can actually result in vasoconstriction, which can limit blood flow to the horse’s skin. If a continual supply of water isn’t available, placing cool wet towels on the horse’s body would be an example of conductive cooling. However, continual reapplication of cool towels is necessary as the horse’s body heat is transferred to the towels. If left on, the towels would simply trap heat on the horse’s body.