

Ask A Vet: Thermography is a Useful Tool for Lameness Diagnosis

Sunday, June 1, 2014

Dear Dr. Weldy's,

"I was reading an article on lameness that mentioned thermography as a way to determine why my horse is lame. Can you explain what this is?"

Dear Reader,

Thermography utilizes an infrared camera to measure the surface temperature of the skin of your horse. This temperature reflects the amount of blood flow in the skin and in the deeper tissues underlying the skin. The larger the amount of blood flow, the warmer that particular area of the body. One reason for increased circulation is inflammation. We all know that an inflamed area of our body will sometimes have a detectable warmth associated with it. Thermography can detect this increase in body heat, but also detect more subtle changes such as might occur very early in the course of musculoskeletal disease. Thermography might also detect areas that are colder than normal due to chronic disease which has negatively impacted the temperature of the skin. Examples of this would be scarring, loss of innervation to an area of the body and muscle atrophy.

A thermographic exam might be useful in lameness location, pre-purchase exams, shoeing and trimming assessments, saddle fit evaluations, and soft tissue injury healing assessment. Slight increases in surface temperature can occur as early as two weeks before a lesion is visible on an ultrasound exam of a tendon. Subclinical hock inflammation prior to bony lesions has been documented with thermographic cameras. However, it is important to remember that thermography records the surface temperature only and does not give specific information about deeper structures such as tendon, ligament and bone. We can only infer that those deeper structures are the cause of the increased temperature. In order to find out if that is indeed true and what is actually wrong we need to use x-ray and ultrasound equipment to image those structures.

The temperatures measured can be influenced by several factors, all of which ideally are controlled before the exam.

-Dr. Wade Hammond