

# Lameness Diagnosis In Horses

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Lameness diagnosis has improved considerably over the last several years. Many new technologies have been adapted and improved to better facilitate equine lameness diagnosis. These include radiology, magnetic resonance imaging (MRI), computerized tomography (CT scan), nuclear scintigraphy, and ultrasound.

As great as these new technologies are, we must remember that they are only an aid to diagnosis. The mainstay of good lameness diagnosis is still physical examination and time tested techniques such as nerve blocks. However, as a supplement to these things, technology can offer us a great deal.

One technology that has distinguished itself as a highly useful modality in equine lameness is Nuclear Scintigraphy. Among laymen it is sometimes referred to as "bone scanning" since it is particularly useful in problems involving bone. For this, it is by far the most sensitive imaging modality available human or veterinary. However, it does much more than that.

Scintigraphy involves giving the horse an intravenous injection of a radioactive isotope called Technetium 99 (Tc99). The Tc99 then binds to the bone structure of the horse. The horse is then placed in front of a gamma camera that is linked to a computer. The computer then generates an image based on the metabolic activity in the bone.

This is extremely reliable and useful information. We are not just looking at a lesion on an X-ray and trying to determine its significance. Now we have a true measure of activ-

ity in the bone that is not as much subject to interpretation as other forms of imaging. One commonly overlooked but important factor is that the negative results can be relied upon as much as the positive results.

The scan itself consists of three phases. The first phase is blood flow. It is done on a single area such as the front feet in a laminitis case or the iliac arteries in an obscure rearlimb lameness case or even blood flow through the heart or the brain.

The second phase is called the pool phase, which allows us to look at soft tissue structures such as muscles, tendons and ligaments. Lastly is the bone phase. The gamma camera allows us to evaluate every part of the horse's body such as the back and pelvis without the need for general anesthesia. It is unaffected by medication and can be done on any size horse.

Besides lameness diagnosis, scintigraphy, since it is so sensitive, is being put to some new uses. These include diagnosing sub-clinical problems such as in pre-purchase examinations, and staying ahead of potential problems by allowing targeted preventive treatment such as in high performance athletes. These applications have proven extremely useful.

Despite all of its advantages I believe scintigraphy is generally under-utilized by practitioners and the public due to lack of understanding or exposure to the technique. If a lameness problem is difficult, obscure or longstanding without a definitive diagnosis, scintigraphy may be your very best option.

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