

# ADMISSION FOR MAGNETIC RESONANCE IMAGING (MRI) OR NUCLEAR SCINTIGRAPHY (BONESCAN)



Please refer to general admission information if you are bringing your horse in for any of these procedures.

Horses seen at Rainbow Equine Hospital may be referred for advanced imaging such as MRI or nuclear scintigraphy alone, or as a part of a more comprehensive work up which may include lameness examination, diagnostic analgesia (nerve blocks) and other imaging such as x-rays or ultrasound. At the hospital, we are the only private practice in the north of England to be able to offer every one of these services in the same location.

For either of these procedures, your horse will need to be sedated. If you know of any reason why your horse should not be sedated, then please inform us upon your arrival so that precautions can be taken.

Due to the large amount of information collected using these imaging modalities, you should expect to receive results on the next working day, occasionally it may be possible to give results on the evening following imaging however we would routinely work to a 24-48-hour reporting period.

## Magnetic Resonance Imaging (MRI)

An MRI scan involves your horse standing within a large magnet whilst being sedated, with a radiofrequency coil placed around the region of the limb which is of interest. MRI is a highly sensitive tool, however it is not recommended to be used as a screening method, as only small regions are imaged at any one time.

On arrival at Rainbow Equine Hospital, your horse will be admitted, at which time a consent form will be completed. Your horse will be examined by either the hospital imaging specialist or one of the hospital surgeons depending on the individual case. A clinical history will be obtained; this is your opportunity to provide as much information that is pertinent to your horse's problem as possible. If you feel that there is any relevant information for your horse, then please let us know at this time.

All horses arriving for MRI examination have a brief lameness examination performed, this includes trotting the horse on a hard surface and on the lunge. It is helpful if the shoes are left on for this examination as otherwise your horse can become foot sore. If your horse's shoes are already removed, this is not a problem however it will limit the lameness examination possible.

Your horse's shoes will then be removed and metal check x-rays will be taken to ensure no metal from shoe nails remain within the foot. The MRI scan will then be performed. For the purpose of the MRI scan, each region (e.g. foot, pastern, or fetlock) requires approximately 45 minutes to 1 hour to image.

This is performed in a purpose designed room which is air-conditioned, remaining at a stable temperature year round. You will not be able to stay with your horse for this to be performed, however should you wish we will show you the MRI suite prior to the scan. Please expect your horse to be with us for at least 2-3 hours, ideally for the entire day, especially if more regions are imaged. Please note that for high image quality the horse must stand very still and any movement necessitates the scans being repeated, this can prolong the duration of the scans.

Once the scan is completed, typically 250-350 images per foot are acquired, your horse will be discharged from the hospital, and a full written report will follow. Please ensure we have email contact details for you on the consent form in order to get this to you as quickly as possible. If you have not heard from us within 48 hours, then please contact us on 01653 695743 to be directed to the senior clinician in charge of the case who will update you.

## Nuclear Scintigraphy (Bonescan)

Scintigraphy involves the injection of a short-acting radioactive substance ( $^{99m}\text{Tc}$ ) into the blood stream which attaches to the bones in regions of bone turnover. It is normal for horses to show skeletal uptake of this radiopharmaceutical, however abnormal areas will show greater uptake than that expected.

On admission into the hospital for scintigraphy, your horse will be briefly examined for lameness, this dependent on the reason for referral. Subsequently, an intravenous catheter will be placed in the jugular vein in the neck, frequently this involves clipping a small patch of hair. Following this your horse will be lunged to increase blood flow to the extremities. Occasionally some horses may not be suitable for lunging due to severity of lameness, if you have any concerns regarding this please inform us at the time of admission.

Approximately 2-4 hours following injection of the radioactive substance, your horse will be sedated for image acquisition. This is performed by using a gamma camera which detects radiation sequentially at multiple spots around your horse. It is common for us to image large regions of the horse, up to and including the whole body using this technique. Abnormal areas on the bonescan show up as hot spots which help us know where to look for abnormal bone remodeling.

Following the scan, your horse is moved into a specific stable, bedded on shavings for 24-48 hours as they are radioactive, through this period you will not be able to visit the horse as contact with people is avoided as much as possible. Please note we will closely monitor your horse through this period. Horses having scintigraphy therefore must stay in the hospital for 48 hours following injection.

The nurse acquiring the images will telephone you following the scan has been acquired, and the clinician overseeing the case will call you the following day to discuss the results once the images have been analyzed. If you have not heard from us within 24 hours, then please contact us on 01653 695743 to be directed to the senior clinician in charge of the case who will update you.