

THE EQUIGAIT SYSTEM

MOTION SENSOR GAIT ANALYSIS TECHNOLOGY



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Equestrian performance for competition and leisure is based on the capacity of the horse's locomotor system. Lameness is one of the primary reasons for a veterinary consultation.

The EquiGait system has been developed by the Equine Structure and Motion Laboratory at the Royal Veterinary College. It detects asymmetries in the horse's body movement as well as the forces of each limb when both weight bearing and pushing off during the stride.

Lameness Diagnosis

Currently the assessment of equine locomotion and lameness is carried out visually and cannot be reliably or consistently quantified. Equine veterinarians often disagree on the extent of lameness. Many lamenesses manifest as subtle limb asymmetries with compensatory stresses on other limbs. In the initial period the horse may appear 'sound'. It has been scientifically proven that the human eye can only reliably detect a 25% or greater asymmetry in horse's movement. In multi limb lameness the ability to pick up problems in the early stages is unreliable. EquiGait provides an objective measurement of lameness and abnormalities in gait.

Injury Prevention

Research has shown that horses have specific gait characteristics when lame and demonstrate certain characteristics pre-injury. These characteristics can be detected as changes which occur within the gait – if left undetected potentially leading to injury. The aim of gait analysis is to identify these changes before they progress into injury. Early identification can allow rapid investigation into the potential problem, allowing for adjustments in management to reduce the injury risk.

Performance Enhancement

Biomechanics within the elite equine disciplines, is becoming widely used as a way of making small adjustments which can help improve movement or support the horse's joints to help prevent injury. These subtle adjustments can help performance – injury prevention is paramount to maintaining performance.

The System

The system is made up of 5 wireless motion sensors (inertial measurement units) attached to the poll, withers, croup and hips with double sided tape. These provide very accurate measurements of their position in space which is wirelessly transmitted to a laptop in real time.

The system requires minimal setup – there are no banks of cameras and markers on the body and limbs. Analysis can be performed anywhere with a level surface, a minimum of 25 strides of trot are required. The system is so accurate that the need for lunging or flexion tests to exacerbate a lameness are not necessary. Results are available immediately, however a more detailed report is prepared and usually ready within 2-3 days. Cost £120 - £150, travel charges may apply in addition.

The Horse Vet Gait Analysis Service offers you a scientific, trusted capability to assess and quantify your horse's gait for lameness diagnosis, injury prevention, treatment monitoring and performance enhancement.



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