



CENTAUR **BIOMECHANICS**

Horse & Rider Biomechanics



GAIT ANALYSIS

Using state of the art systems, which have been scientifically validated, the horse's gait can be objectively analysed. Gait analysis removes the subjectivity from gait and lameness assessments. It has proved useful for horse owners and therapists who want to take a proactive approach to managing the horse's locomotor system and is used by veterinarians world-wide.

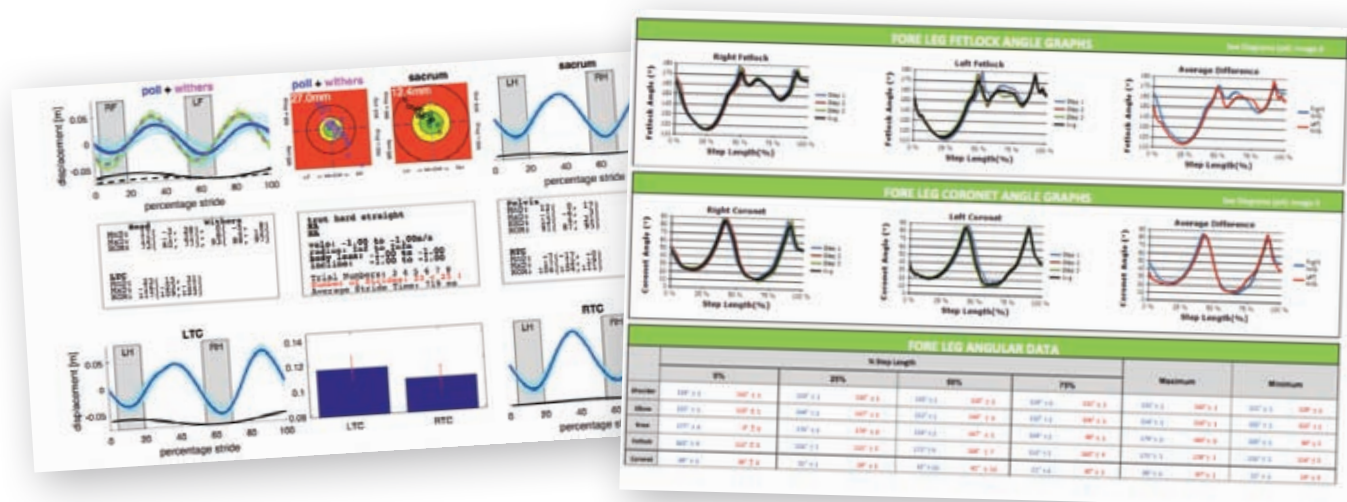
There are many applications for gait analysis:

- **Baseline** – obtain a baseline data of your horse's gait, allowing for early detection of any gait asymmetry and serving as a reference point throughout the horse's career or rehabilitation.
- **Clinical** - working with a veterinarian, gait analysis can provide further information on lameness and limb loading compensations. In cases of lameness, gait analysis can be carried out pre and post intervention (diagnostic analgesia nerve block). This process provides objective evidence of improvements in the horse's gait.
- **Loss of performance** – gait analysis can help identify gait asymmetries which could affect performance.

The quality of any data and interpretation is affected by the methods used to obtain the data. Centaur will only use scientifically validated systems and follow strict robust, validated protocols allowing for accurate data being collected, which can be used for gait analysis.

Centaur have carried out extensive research using a multitude of measuring systems, have published research in internationally renowned, peer reviewed scientific journals and presented their work at international meetings. Centaur use three measuring systems, High Speed Cameras, Camera based System (Quintic) and Inertial Measuring Units (Equigait). This allows us to provide targeted solutions to suit your individual requirements.

Prices start from £110.00





RIDER ANALYSIS

For over ten years Centaur Biomechanics have carried out extensive research on the interaction between the horse-saddle-rider. Centaur bring this information to their Rider Biomechanics sessions which have been specifically designed to objectively evaluate the rider's position using state of the art software, high speed cameras and Visualise training jackets. These sessions will give riders a detailed understanding of their position, its influence on the horse and will offer advice and exercises on how to improve. Instant video feedback is given, so riders can see instantly, whilst mounted, the areas being discussed. These sessions complement current training and are open to riders of all levels from riding club through to Olympic/Paralympic level.

Riders will leave the session with:

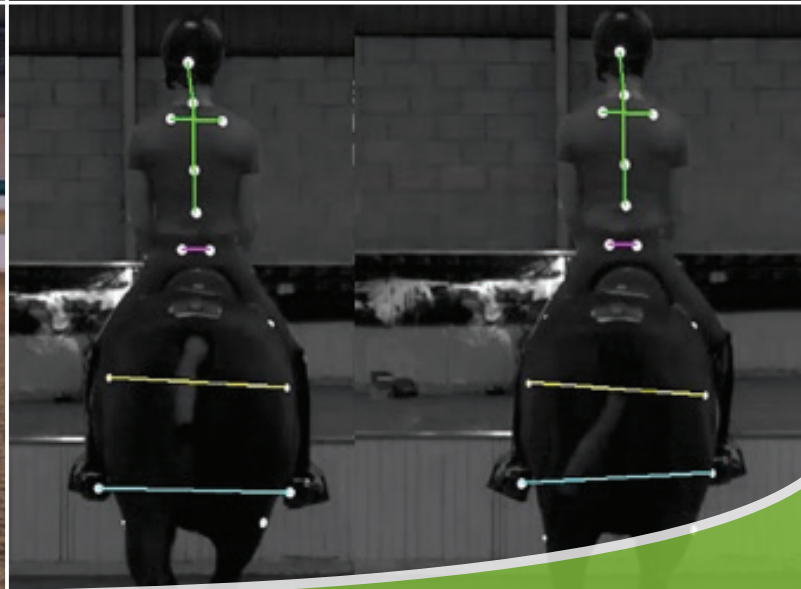
A greater understanding of their position and its effect on the horse.

Advice and exercises to improve their position.

A feedback form detailing the findings, including follow up exercises.

Prices start from £60.00





CENTAUR BIOMECHANICS PRODUCTS

Centaur Biomechanics have a range of products to help riders improve their position. The Visualise range allows riders and coaches to see at a glance the rider's positional weaknesses and make corrections. The training jackets are also used by Pilates instructors and physiotherapists.

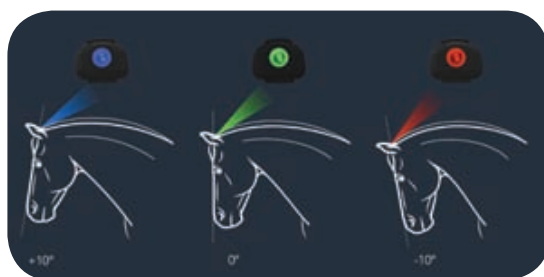
VISUALISE TRAINING PRODUCTS

Prices start from £20.00

- Visualise Training Jacket – Mesh Climate Cool
- Visualise Training Jacket – Summer
- Visualise Training Jacket – Winter
- Visualise Training Gloves – Thumbs on Top
- Available in GBR colours, black / green and black / pink

ACCESSORIES

- Visualise Training Ear Bonnet
- Visualise Training Hat Silk
- Vert Training Aid
- Centaur Biomechanics 30mm Motion Capture Markers
- Centaur Active Sports Drink Bottles
- Objectivity App





RESEARCH PRODUCT TESTING

Centaur Biomechanics have an extensive research portfolio working with many brands and companies across the globe. For the past eleven years Centaur have researched extensively horse-saddle-rider interaction and more recently have been looking at the effect that therapy solutions have on the horse's locomotor system.

Centaur bring state of the art equipment and will employ the latest research methods, ensuring strict scientific protocols are followed and, coupled with Centaur's research experience, will carry out robust testing which will withstand scientific scrutiny.

If you are interested in commissioning a scientific study please email info@centaurbiomechanics.co.uk

Visit our website to view published research centaurbiomechanics.co.uk



RIDER WORKSHOPS AND EQUINE SPORTS SCIENCE SEMINAR

Each year Centaur Biomechanics hosts two annual events. The vision of these events is to bring some of the world's best trainers and researchers under one roof to share their knowledge with the audiences. Our Centaur Biomechanics' Rider Workshop and Equine Sports Science Seminar have attracted delegates from all over the world and we are honoured to have had some truly inspirational and world leading coaches: Andrew Hoy, Judy Harvey, Gareth Hughes, Yogi Breisner and Stephen Clarke. Our Equine Sports Science Seminar welcomes some of the world's leading researchers to share their knowledge and research: Prof Renate Weller, Prof Hilary Clayton, Dr Rachel Murray, Dr Richard Coombe and Prof Lars Roestroff.

The Rider Workshop is open to riders and coaches of all levels and anyone who is keen to improve their riding and training. Each year the workshop gives meaningful information which can be implemented by riders and coaches of all levels – something for everyone.

Our Equine Sports Science Seminar is of interest to anyone who wishes to further their understanding of the horse. The seminar delivers some of the latest information in equine sports science. This event is of interest to riders, coaches, veterinarians, farriers, therapists, saddle fitters and para professionals.

Prices start from £55.00

PRESS

We want to share our knowledge with as many people as possible in order to improve the welfare of the ridden horse. Please visit our press page and watch our BBC interview with Claire Balding.

Email us to
discuss potential
research projects



EQUINE BIOMECHANICS COURSES

Centaur Biomechanics have an extensive course programme which is designed to provide an environment where attendees can learn more about the biomechanics of the horse. Centaur carry out extensive research into surfaces, studs, factors affecting performance in the ridden horse, vibration therapy and, for the past eleven years, Centaur have carried out extensive research into horse-saddle-rider interaction. Russell is an author with many research projects being published in peer reviewed veterinary journals and/or presented at international conferences. These courses not only present some of the latest research but allow you to discuss ideas and thoughts with a published researcher and internationally versed speaker.

Courses are 50:50 split theory and practical. All courses have course notes, lunch and CPD certificates provided.

One day biomechanics course – Introduction to Biomechanics.

Two day biomechanics course – Back Biomechanics and Saddle Fitting.

Prices start from £110.00

CAMPS

Centaur runs an annual weekend dressage camp.

There are three individual ridden sessions, including a flatwork, a Biomechanics and a test riding session. Camps are small and friendly and open to all levels.

DEMONSTRATIONS AND PRESENTATIONS

Russell speaks all over the world, presenting his research. If you would like to book a presentation or demonstration please email the office for a demonstration pack.

Visit our website for more information and to book.

**Book
online**





ABOUT US

Centaur Biomechanics, founded by Russell Guire, is a company which specialises in horse and rider biomechanics. With the use of state of the art technology, Centaur Biomechanics can objectively evaluate horse, saddle and rider interaction. Centaur have completed many research projects extensively focusing on the effect that girths, bridles, saddles, rollers, training aids and the rider have on the locomotion of the horse. Centaur Biomechanics, Russell is nearing completion of his PhD at the Royal Veterinary College within the internationally renowned structure and motion lab where he is focusing on horse and rider interaction, in particular the effect that the saddle and rider have on equine spinal kinematics and locomotion.



Centaur works with horses and riders of all levels and disciplines. For over eleven years, Centaur have worked with high performance athletes (Olympic and Paralympic level) in providing biomechanical/performance analysis to all disciplines in order to optimise marginal gains. Centaur have featured in many equestrian articles and books and Russell regularly speaks at international conferences throughout the world presenting his research.

Centaur Biomechanics offers an array of services which are designed to help aid understanding on all aspects associated with horse-rider biomechanics and producing meaningful services which will help riders improve. All of our work is underpinned by three key objectives, to improve the welfare, soundness and performance of the ridden horse. Please follow our work on social media and keep up to date with Centaur activities online.

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