



These screen grabs of Russell's video show the difference in Ginetta's upper body position before (top) and after her session

Ginetta works at a computer all day, which means she tends to round her shoulders. She wants to perfect her position to help her horse

First up in our new series, aimed at giving your riding the edge, is rider analysis using biomechanics.

Biomechanics is the study of body movements and the forces acting on the musculoskeletal system.

Centaur Biomechanics is employed by the British Equestrian Federation to perform rider and gait analysis on horses and riders on the World Class programme. Using sophisticated camera equipment and computer technology, they project annotated images onto a screen, which illustrate flaws in riders' positions. By addressing these issues, riders not only become more effective but also reduce the risk of injury to their horse.

"We've worked with the World Class Programme for nearly five years, but recently thought, why shouldn't everyone benefit?" explains Russell Guire (see 'the expert', left), who runs sessions for all riders, starting at £60.

The process

On arrival at Centaur Training and Livery Yard in Moreton Morrell, Ginetta George (see 'the rider') is asked to warm up as she normally would, having a walk, trot and canter on both reins.

Russell sets up the equipment he needs to film and assess Ginetta's riding – including a camera, laptop and projector screen. The latter is important as it enables Ginetta to see for herself immediately what Russell is trying to explain. "It's proven to be the best way to learn," he says.

The camera captures 300 frames per second – making it 25 times faster than the human eye. This means that, when played back on the screen or laptop, subtle changes

Russell puts white stickers on Ginetta's joint centres, which show up clearly on video. He draws lines between them to illustrate correct and incorrect angles in her position



in the rider's position and horse's movement can be made obvious.

Russell asks for a run down of Ginetta's experience, noting any previous injuries. She says there's not much to tell, and that an old sacroiliac injury and operation on her right shoulder no longer cause her any grief, but Russell has already spotted tightness in her lower back and that she is slightly fixed in her right shoulder.

"I'm right handed and I think I'm stronger on that side," says Ginetta.

Russell is also interested in her day job, running a graphic design company and spending much of the day sat at a computer, hunched over the keyboard, with a phone cradled under her ear.

camera and then away from it. "I was trying to sit as straight as I could," she says.

Russell is keen that this experience shouldn't be disheartening for Ginetta, reassuring her that she rides well and the things he is picking up on the video are small issues.

"It's probably due to sitting at a computer, but you ride with rounded shoulders," says Russell. Ginetta **HJ**

The issues

Russell places white stickers on Ginetta's joint centres so that these can be easily identified on the video. He asks her to first walk, then trot and canter straight towards the

Russell points out where our seat bones are



Ginetta removes her stirrups, closes her eyes and concentrates on sitting evenly on her seat bones

