SITTING PRETTY

BARBARA YOUNG FINDS OUT HOW A CORRECTLY BALANCED SADDLE CAN HELP IMPROVE A RIDER'S POSTURE AND THEIR HORSE'S PERFORMANCE TOO.

While few of us may boast perfect posture in the saddle, the way we sit and influence our horses with our bodies can have a huge impact not only on their way of going, but their comfort and wellbeing too.

Sitting crooked, collapsing in the seat, leaning too far back or forward and constantly putting your weight more into one stirrup than the other are just some of the common problems which many riders face. Not surprisingly, these issues also have a significant effect on our saddles and subsequently our horses as well, so if a rider is sitting crooked, his horse is likely to follow suit.

According to SMS Master Saddler Mark Fisher from Woolcroft Equine Services, who works with our World Class team, one of the most common problems are saddles which have gone out of "balance".

"This could be only minor, maybe even just a few millimetres, but a saddle that is sitting slightly down at the front, rear or very often off centre and over to one side will have a negative and often quite serious effect on the rider's position and therefore the horse's ability to move correctly and to its full potential."

Mark explains that poor rider posture and symmetry can lead to an out of balance saddle and is likely to compromise horse locomotion.

"For example, some riders who have poor posture may result in altering one stirrup leather to help improve their balance," says Mark. "However, this will have a negative effect on not only their position, but also the saddle balance and horse locomotion."

Mark's advice for riders is to seek an assessment from experts and ask their saddlefitter to make adjustments to the panels of their saddle as required.

"A rider who leans forward will increase the pressure on the front of the saddle and conversely a rider who is leaning back will create more pressure on the back portion of the saddle," he explains. "Both of which will lead to compression of the flocking."

A rider's lack of suppleness can also affect their horse's performance. Mark, who operates Pliance testing (measuring how saddles distribute pressure across a horse's back) for the BEF and the Society of Master Saddlers, has worked with Centaur Biomechanics' founder Russell Guire for 10 years and this team has carried out a number of studies into the effects of incorrectly balanced saddles.

"Since 2006, we have carried out nearly 80 projects looking into horse and rider interaction, focusing on how the saddle affects the welfare and performance of the horse and its impact on rider mechanics," explains Russell, who uses state-of-the-art equipment to objectively measure horse locomotion, high speed cameras which record at 400 frames a second – approximately 33 times faster than the human eye, inertial sensors measuring in 3D and rein gauges.

Russell points out, "In sitting trot, if the rider is not supple, they are likely to grip with their knees and bounce in the saddle. This will create increased and irregular pressure profile on the horse's back. In turn, the horse will tense and extend his back and alter his locomotion due to the 'bow and string' theory.

"The back undergoes three planes of rotation, flexion/extension, axial rotation and lateral bending and is flexed when the hind leg is in protraction and the fore leg is retraction. ▶

"THE RIDER'S POSITIONING HAS A MASSIVE EFFECT ON THE HORSE'S BALANCE AND THEIR LOCOMOTION"

LEFT: A STUDY OF 300 RIDERS BY RUSSELL GUIRE FOUND THAT 80% OF RIDERS SHIFTED THEIR SEAT TO THE RIGHT AND COLLAPSED THROUGH THEIR LEFT RIB CAGE.

ABOVE: THE RIDER'S POSITION HAS A MASSIVE EFFECT ON THE HORSE'S BALANCE AND WAY OF GOING. ON THE LEFT, NOTE THE WHITE MARKER [illegible] THE RIDER COLLAPSES LEFT WHEN COMPARED WITH THE RIGHT WHERE SITTING STRAIGHT IMPROVES THE SADDLE POSITION

The equine back is like a ridged beam, where the hind limbs are connected to the back however, in the absence of a collar bone, the front limbs are supported by the thoracic sling musculature. The equine back has to withstand the downward force of the abdominal contents which are affected by gravity. This is further compounded with a rider who is stiff and bounces, thus increasing saddle pressure and as a result the horse will do what it can to stabilise, thus bracing through its back.

Russell says, "Big moving horses with greater expression, which is created by the horse generating large power impulses during the stance phase thrusts the trunk vertically into the suspension phase. These vertical impulses are a challenge for riders to absorb those forces. However, a well fitted saddle will maximise stability and support for the rider while minimising restriction on the horse.

"Rider asymmetry is very common, just simple handedness of the rider (left and right) could create an asymmetry along with lifestyle, injuries and physical structure."

"REMEMBER, HORSES CAN FEEL A FLY LAND ON THEM, THEREFORE OPTIMAL RIDER POSITION IS CRUCIAL"

According to Russell, the way the rider sits on the horse will have a dramatic effect on its soundness, performance and development. "The rider's positioning has a massive effect on the horse's balance and their locomotion," he explains. "The horse's body weight is largely on the fore limbs (58%) and hind limbs (42%), so if you imagine having somebody sitting on your shoulders, when they tip their body left or right you have to move in this direction to maintain your balance and this is similar for the horse if you are sitting incorrectly."

Russell points out that a rider's position can significantly alter a horse's locomotion, and research has shown that inexperienced riders can destabilise the horse, thus altering its locomotion.

"We recently did a study looking at 300 riders and found that 80% of riders shifted their seat to the right and collapsed through their left rib cage. Generally, this would be a trend we would see in our rider biomechanics clinics along with asymmetric pelvic position, tight/gripping knees, upper body collapsed forward, which can be due to nerves, collapsing in to the foetal position, or leaning back due to lack of stability. Head tilt, broken hand line, curled wrists."

Russell and Mark have also done a study looking at seat bone pressures in 30 advanced riders and found that off horse, when sitting on a static platform they did so with more weight [illegible] seat bone despite feeling straight. [illegible] and stability of the rider go hand in hand with fitness and it's helpful for riders to have a physical assessment from a physiotherapist to determine any physical asymmetries off-horse.

"Horses are sensitive and as such are influenced by weight distribution. Therefore, if they are weighting one side more than the other, riders need to be aware that this could result in sub-optimal performance or conflicting behaviour in training."

To help address rider asymmetry, Russell advises wearing Visualise training jackets, designed specifically for postural work, using smart phones to video sessions, or investing in a training device which allows a connection from a smart phone to a tripod which then remotely follows the rider.

"Remember, horses can feel a fly land on them, therefore optimal rider position is crucial." ■

CENTAUR BIOMECHANICS' RIDER CONFERENCE

This year's Centaur Biomechanics' Rider Conference takes place at Moulton College, Northants, on 10 and 11 June. For more information visit **www.centaurbiomechanics.co.uk**