

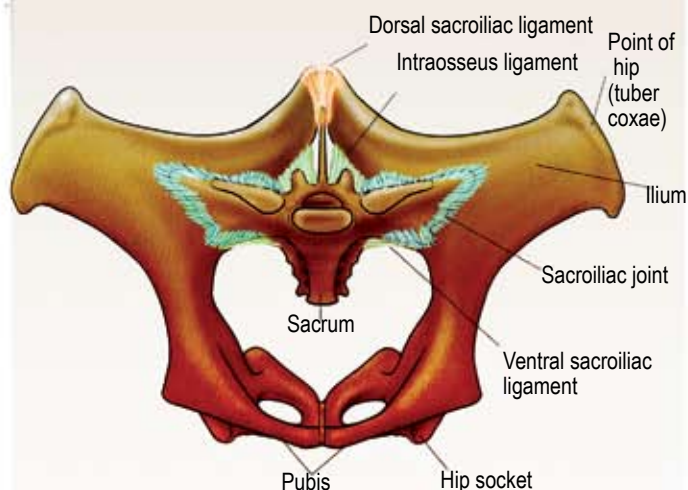
The VULNERABLE JOINT

Sacro-iliac Dysfunction

by Dr Ian Bidstrup



It is not uncommon for horse owners to be told their horse has a sacro-iliac problem and, while some have little idea of what the sacro-iliac joint is, others who think they know, often do not fully understand the complexity of the sacro-iliac coupling of the horse, nor the options for treatment of this ever so important joint.



A common indication all is not right with the sacro-iliac or low back region of the horse is uneven (asymmetric) movement of the pelvis, accompanied by uneven hindleg stride length.

The sacro-iliac ligaments and tendinous attachment of the muscles to the pelvis and sacrum (croup) suffer strain and tears from over stretching during falls and from excessive strain during intensive exertion, either in the paddock or during training and competition. Damage can also occur from poor horse posture secondary to saddle, rider, dental and hoof balance issues, birth trauma, when getting up from being cast in a box or from an explosive start in races.

If not rehabilitated properly damage to these muscle attachments and ligaments usually does not resolve completely and can remain a weakness and potential source of pain and secondary dysfunction for many years after the initial injury. The more superficial tears can be readily identified by palpation - the application of the fingers with light pressure to the surface of the horse's body -and also can be recognised with diagnostic ultrasound. At times they are very sensitive to touch, with horses readily dropping their rump to the ground when firmly palpated. Tenderness of these tears often diminishes with rest, only to re-occur as they reach intensive exercise levels in their next preparation for competition or racing.

The amount of strain pelvic muscle attachments are subject to is indicated by side-tears, which occur around the outer hip bone of the pelvis and quite often develop 1-2cm calcified marbles as a result of segments of the muscle tendinous attachment being literally torn off the bone. These 'marbles' can be quite mobile,

Continued

Sacro-iliac continued...

Below: Tears around the upper tips of the pelvis (tuber sacrale or hunters bump) usually re-inflate and become tender with exertion.

Hunter's Bump



being able to be moved several centimetres under the skin around the hip bone. They are remarkably common and do not seem to bother the horse but are a good indication of the presence and severity of strain to which a horse has been subjected. The marbles themselves do not require treatment, just any unresolved muscle attachment tears associated with them. The tears around the upper tips of the pelvis (tuber sacrale or hunters bump) are similar in nature. Often pelvic tears, like that of leg tendons, do not heal completely and remain semi healed for many years unless specifically treated. Once a horse starts exerting itself these tears usually re-inflate and become tender, with reflex tightening of the flanks and loin and causing sacro-iliac joint complex (SIJC) dysfunction.

Tight and torn hamstring muscles are the most readily recognisable changes found in association with sacro-iliac joint complex injuries. Frequently there is also damage to the large back muscles. Fractures of the pelvis, particularly 'knocked down hip' where the hip bone of one side is impacted on a post or stable door and suffers a compression fracture, usually have considerable SIJC associated damage.



Above: Muscle wasting associated with damage to the sacro-iliac joint complex.



Left: The movement of the horse's pelvis should be equal on both sides, with the belly swinging to the left as the hip drops to the right however, a sacro-iliac injury often involves stiffness on the left side and the right hip will drop noticeably.

A basic understanding of the horse's anatomy is required for horse owners to appreciate what is entailed when the sacro-iliac is dysfunctional and how this will affect their horses.

The sacro-iliac joint complex (SIJC) is the coupling between the horse's hindleg and its spine that carries the impulsion from the hindlegs through to the rest of the body. Many studies in the past 30 years have

indicated that showjumping horses are at particular risk of dysfunction in this joint.

Central to the complex is the sacro-iliac joint (SIJ) between the ilium, or wing of the pelvis, and the sacrum, or croup. This is a complicated joint made up of both a synovial component, with joint fluid between the cartilage of each side, similar to joints of our hand, and a fibrous portion that is like two bones joined face to face by many very short ligaments. It is sock shaped and relatively small considering the forces that it is subjected too

In the past it was considered that this joint did not move at all but now experimental evidence indicates that there is a small, but highly important, amount of movement of the joint. Normal movement of this joint is essential for normal back muscle balance and tension. This has been illustrated by experimental studies of nerve reflexes associated with the SIJ of humans and pigs showing its health is pivotal to muscle tension, tenderness and correct function of the lower back and leg muscles.

The SIJ importantly does not stand alone but is supported by a number of very strong ligaments and also the muscles of the pelvis. Together the SIJ and associated ligaments and muscles form the SIJ complex.

JOINT DYSFUNCTION

World leaders in research into lameness and spinal problems of horses from the UK, France and USA, all agree that sacro-iliac joint complex injury in horses is common. This is mirrored by the clinical findings of veterinary chiropractic, osteopathic and acupuncture practitioners and other body workers. *(I estimate that over 80% of the horses I have seen present with symptoms of sacro-iliac joint complex dysfunction.)*

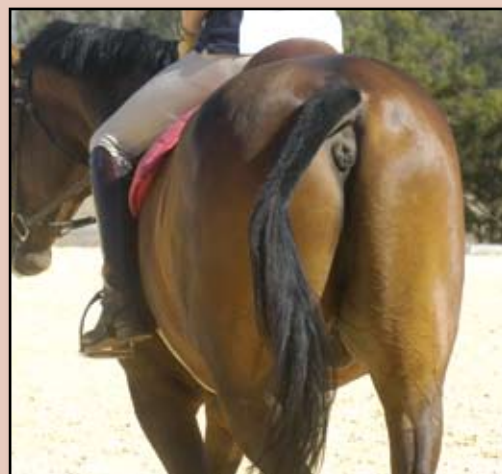
A major problem for both humans and horses, symptoms of sacro-iliac joint dysfunction includes low back pain, groin pain, sciatica, tight hamstring muscles and secondary soreness and dysfunction of other regions of the back, right up to the vertebral joints at the back of the skull and

Common Symptoms

Common horse specific symptoms that may be a result of SIJC dysfunction include shortness of stride of one hindleg; squaring of hind hooves; crossing hindlegs towards the midline while walking; difficulty in holding up one hindleg when being shod; poor or uneven muscle development over the rump; tenderness over lower back and pelvic areas and differences in the height of the mid points of the pelvis.

Others include the bones at the top of the pelvis being very prominent (hunters bump; favouring one hind leg when standing; continually shifting from one leg to another; gait short and/or stiff in one or both hindlegs; locking or clicking patellae (kneecaps, which, in my experience, is the most common source of clicking coming from the back legs); hindleg lameness, both leg swinging and weight bearing lameness can be involved.

Tightness of one side of the rump and skin tenderness over the rump or above the tail; tail being held to one side; lugging or hanging; tying up or fading in races; lack of coordination of gait, disuniting at a canter; leg interference etc; stiffness when coming out of the stall; inability to engage the rear quarters; gaiting so that the rider cannot sit centred on the horse; keeping the back stiff and just moving from the legs. *Right: Tail being held to one side*



the joints of the jaw (temperomandibular joints).

SYMPTOMS

In the normal spinal movement of a horse at a walk and trot, the pelvis should move in a figure of eight motion, freely and symmetrically. Reduced or increased movement on one side is an indication of low back or sacro-iliac dysfunction. Lameness may also be apparent.

Injury to the components of the SIJC initially results in tightness and stiffness of the muscles surrounding it. As the injury heals this stiffness should resolve with normal movement of the lower back being resumed. More often than not, this protective stiffness is one sided with one sacro-iliac joint of the horse being held more stiffly than the other. Commonly one side is seen to be stiff and the other overly mobile. If the injury is considerable then the unevenness usual becomes a long term change. The stiff side is usually higher than the more mobile side. On the stiff side, the hindleg stride is usually seen to be shortened in its forward reach. The leg of the opposite side often tends to drag, especially being obvious on a sandy arena.

MENTAL CO-ORDINATION

When abnormal movement in a horse's sacro-iliac joint complex occurs it appears to upset the brain's ability to correctly

control the horse's lower back and hindlegs. Co-ordination problems, like leg interference and disuniting at a canter, start to occur and continue until each side of the SIJ complex is returned to normal function via rehabilitative care or, alternatively, the horse's brain manages to accommodate to the changes in its system. Accommodation is a poor second to rehabilitation as stiffness and age-related degeneration proceed at a much faster pace than for recovered horses, and this will of course reduce the potential for the horse's athletic performance.

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Injury to the SIJC is often multi-faceted, with ligaments, local spinal muscles and larger back muscles all involved, and spinal nerve function is upset as a consequence. Aside from the specific symptoms, the horse may also experience hot or cold spots, local itchiness, dermatitis, unusual body or tail rubbing, and patchy sweating, as the nerves to the skin are often affected with back problems.

The SI joints themselves are prone to degeneration and arthritis and, in

the absence of major injury, they will gradually degenerate with age. Injury potentially speeds up the degeneration of these joints, which leads to their mobility being restricted and arthritic change leads to joint pain and secondary tightening of the small and large back muscles.

DIAGNOSIS

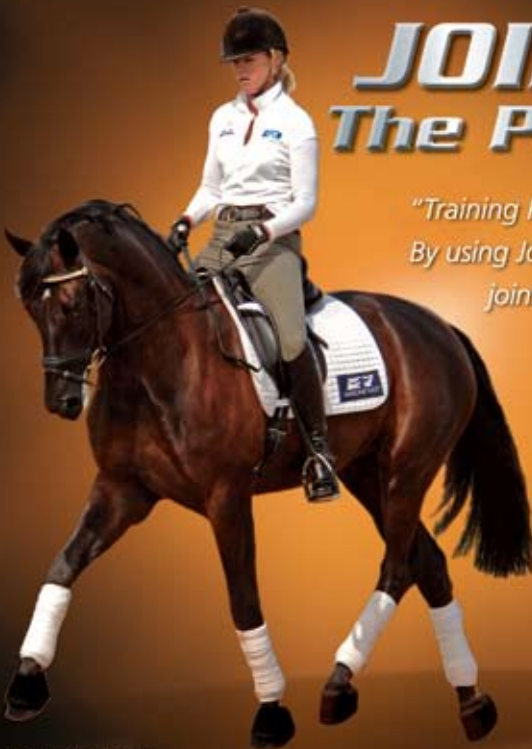
Multiple options for diagnosis are available, including identifying reduced or increased movement on one side of the horse, shortening of stride, lameness, pain around the tips of the pelvic bone, tenderness of the rump and croup muscles and diagnostic imaging, including ultrasound and bone scans (scintigraphy), being just a few of these. Radiographs (Xrays) are usually not valuable in diagnosing these injuries.

It is also important to eliminate other causes of hindleg lameness, such as sore feet, hocks and stifles as they all commonly cause symptoms similar to SIJC dysfunction and when present can produce soreness in the SIJ complex. Horses also suffer intervertebral disc disease like humans. The lower back intervertebral joints, called facet joints, and low back discs, especially between the last lumbar and first sacral vertebra have often degenerated in cases of low back pain according to Prof Denoix of France.

TREATMENT OPTIONS

Common traditional veterinary approaches for affected horses include

Continued



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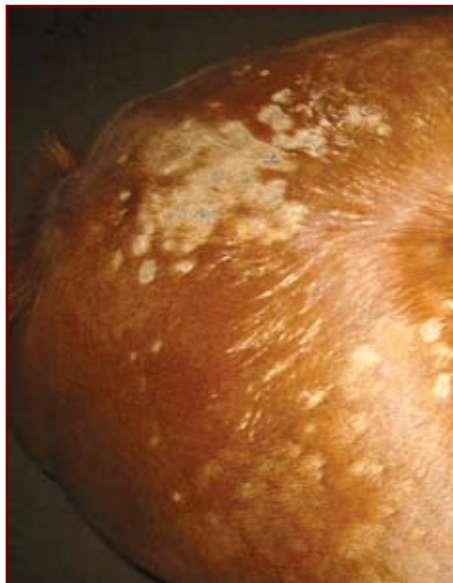
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Sacro-iliac continued...



Injury to the SIJC is often multi-faceted with the horse experiencing local itchiness and/or dermatitis due to the nerves to the skin being damaged.

rest and anti-inflammatory medication with phenylbutazone ('Bute'), pentosan sulphate (course of 3-4 injections a week apart and then monthly to three months) and injections of cortisone around the sacro-iliac joint (requires a 20cm needle and ultrasound guidance). This may be combined with work over poles or on hills with or without anti-inflammatory medication after 3-12 months of paddock rest.

Veterinary, chiropractic and osteopathic treatments are often used to good effect to stimulate the local muscles and the horse's brain to re-initiate normal muscle tension and movement of the sacro-iliac joints. Muscle release therapy may also be used to 'turn off' those muscles exhibiting abnormal spasm that have not receded despite the original injury being resolved.

Veterinary acupuncture is also used to help reset the muscle balance and function of the sacro-iliac joint and to encourage resolution of sacro-iliac ligament and local muscle attachment tears that have failed to fully resolve and are still causing reflex pain well after the initial injury. Prolotherapy, using local anaesthetic and a mild irritant is particularly effective in treating this major part of SIJC dysfunction.

Exercising over poles on the ground and later elevated on bricks and gentle work on hills, especially going diagonally across gentle slopes, has been found to be useful in strengthening the SIJC. Specific programs need to be tailored by your practitioner according to the individual case. Hindleg stretches are also used to encourage shortened muscles to lengthen.

Good results have been achieved from combining veterinary, chiropractic, acupuncture and prolotherapy. Most often

horses are given only a short rest (days) and are gradually brought back to normal levels of work over two to 16 weeks. Improvement is usually apparent after the first treatment and usually two to four treatments a fortnight apart are needed to get the dysfunction under control. Ideally pole exercises at home are incorporated, but good results can often be seen even if this is left out of the recovery program. Often the difference in height of the middle tips of the pelvis remains the same but the function of the lower back, hindlegs and SIJC return to normal or near normal.

PREVENTION

Stopping a horse falling in the paddock is impossible but there are plenty of other options that can be utilised to reduce the likelihood of injury to the sacro-iliac joint complex. The most important preventative measure is to maintain the horse's good back posture and CORE STRENGTH, which is vital for supporting and protecting the SIJ complex. Good horse posture and core strength come from many things – good nutrition, plenty of exercise, well balanced and comfortable feet, good saddle fit, good riding technique, good rider weight/horse core strength ratio (note ...not rider/horse weight ratio – two very different things!), comfortable bit, teeth and jaw joints, comfortable wither, girth and back. Horses that drop their back or belly under the weight of a rider or an ill fitting saddle become disengaged behind, tend to work on the forehand and have poor core strength. Vertical casting rails 1.2m apart in boxes can prevent horses straining themselves to get away from a box wall by giving the horse something to push against, making getting up relatively easy. (Some of the worst sacro-iliac joint complex damage I have seen came from a casting accident.)

Sacro-iliac joint complex injury and dysfunction is a very common issue for horses across all disciplines and without adequate rehabilitation and attention to postural and core strength issues it can remain a continuous or recurring cause of pain, resulting in poor or decreased performance. The good news however, is that treatment can allow for successful rehabilitation of this problem. 🐾

About The Author

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*Based in Wangaratta,
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 veterinarians treating*



spinal trouble in animals full time. Amongst other qualifications he has a Masters Degree in Chiropractic Science and international qualification in veterinary acupuncture. He has lectured part time on animal chiropractic for RMIT University for the last seven years. Sacro-iliac joint complex problems are one of the most common he has to deal with as a SpinalVet. For more information: www.spinalvet.com.au