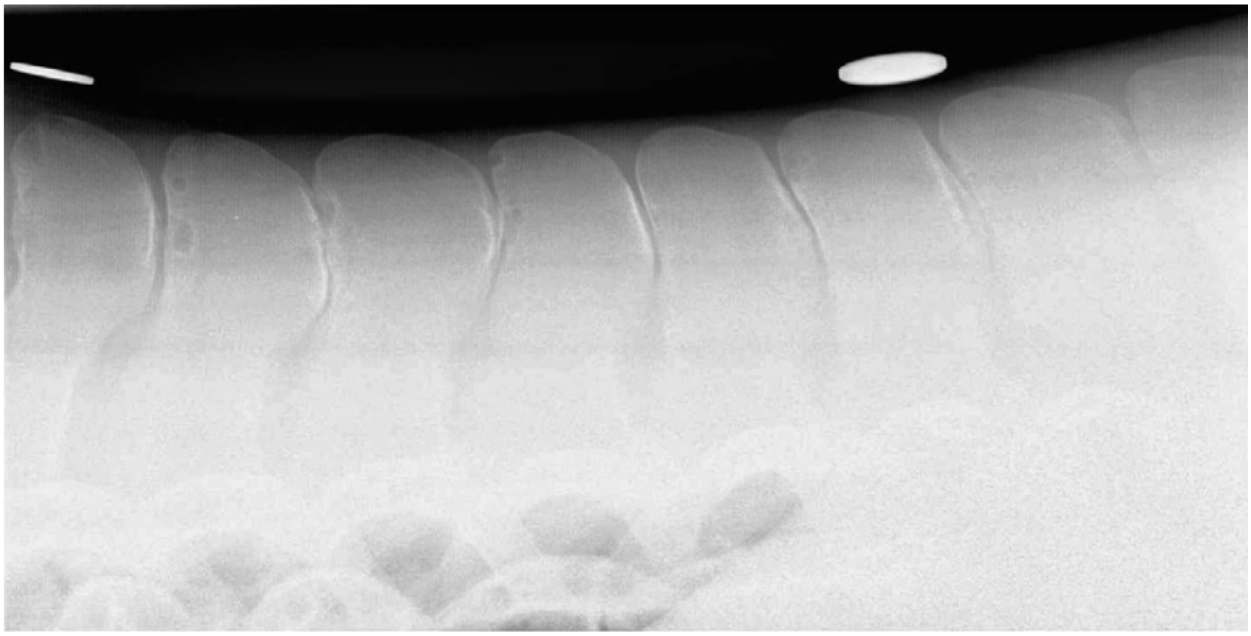
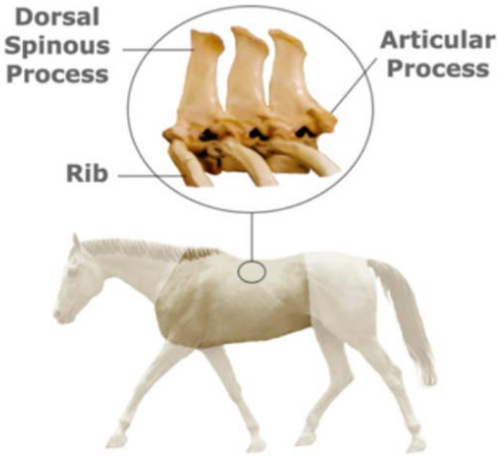
Kissing spines, also known as **overriding dorsal spinous processes (ORDSP)**, is a common condition in horses that can have significant implications for their health, performance, and quality of life. This condition arises when the spinous processes—the bones from the vertebrae in the horse's spine—come into abnormal contact or even overlap. While this condition may remain asymptomatic in some horses, it can lead to severe pain, behavioural issues, and lameness in others (Mair et al., 2013, p.393).



'Kissing spines': the lateral radiographs of the spinous process show narrowing of the interspinous space with sclerosis and lucencies in the underlying bone. Note the metal markers placed to help matching up radiographs with the live horse.
IMAGE FROM Mair, T., Love, S., Schumacher, J., Smith, R., & Frazer, G. (2013). *Equine medicine, surgery, and reproduction* (2nd ed., p.506). Elsevier.

A common cause of thoracolumbar pain in horses is the narrowing of spaces between the dorsal spinous processes (DSPs) in the mid-thoracic or lumbar vertebral column. This narrowing occurs dorsally, leading to the remodelling of the opposing bone surfaces (McAuliffe, 2014, p.260). The horse's back includes five to six lumbar vertebrae, forming the posterior third. The dorsal spinous processes of these lumbar vertebrae are less prominent than those in the thoracic region. However, similar issues, such as limited mobility or misalignment caused by direct pressure (such as rider weight) and/or abnormal spinal conformation, can still affect them. This often arises in the area between the T10 and L6 articulations in the horse, which is the part of the back directly affected by saddle pressure (Grisel, 2018, p.129). Spondylosis deformans are thought to result from excessive dorsiflexion (hollowing) of the horse's back when its muscles are fatigued. This excessive curvature leads to tearing in the ventral and ventrolateral regions of the annulus fibrosis, causing compression of the intervertebral joint and eventually leading to impingement of the dorsal spinous processes, known as Kissing Spines. In the most severe cases, fusion occurs between the intervertebral joints (Stashak, 2006, p.355).



The Horse's Thoracic Spine. Each thoracic vertebra accommodates six articulations: right and left facet joints (2) that link it to the adjacent vertebra in front, right and left facet joints (2) that link it to the adjacent vertebra behind, and right and left articulations with the respective ribs (2). **IMAGE FROM** Grisel, G. R. (2018). *Equine lameness for the layman*. Trafalgar Square Books.

Back injuries in horses can arise from a variety of causes, including direct trauma, poor-fitting saddles, improper rider seating, and twisting or wrenching of the spine. However, there seems to be a correlation between a horse's conformation, sex, use, and breed influencing the type of injury sustained. Horses with short, inflexible backs are generally more prone to vertebral lesions, while those with long, flexible backs are more susceptible to muscular and ligament strain. Mares are more commonly affected by ossifying spondylosis, whereas dorsal spinous process overrides are more frequently observed in geldings. Sacroiliac strain is most prevalent in horses involved in speed jumping, such as hunters, hurdlers, steeplechasers, and point-to-pointers. In contrast, bone damage to the thoracolumbar spine is more commonly seen in competitive jumpers. Thoroughbred racehorses are more prone to soft tissue injuries than vertebral lesions (Stashak, 2006, p.355).

IMAGE: A postmortem specimen of the thoracic vertebrae T11-T16. There are overriding DSPs in all the bones. Note the marked remodeling at the sites of overriding T12-16. The spinous processes have rubbed against each other causing new bone formation and degenerative disease.**IMAGE FROM** Henson, F. M.D. (2018*). Equine Neck and Back Pathology, Diagnosis and Treatment* (2nd ed.). Wiley Blackwell.

Horses with kissing spine may exhibit behavioral signs such as resistance under saddle, bucking, or reluctance to move forward. Physical signs include poor topline musculature, stiffness, and sensitivity when palpating the back. (Grisel, 2018, p.75) Radiography, scintigraphy, and ultrasonography are valuable imaging techniques for examining the thoracolumbar region, and a combination of these approaches is often required to confirm a diagnosis (Baxter, 2022, p.357).

The management of kissing spines can involve both conservative and surgical approaches. Conservative treatment includes pain management (NSAIDs, corticosteroids), physiotherapy, and training alterations. In severe cases, surgery may be indicated (Mair et al., 2013, p.395).

Conservative treatments for kissing spines typically involve a period of rest followed by structured rehabilitation to reduce inflammation and strengthen the horse's topline. (McGowan & Goff, 2016, p. 318). Pain management strategies include anti-inflammatory medications, such as corticosteroid injections, shockwave therapy, thermography, ultrasound, deep massage by cyclotherapy, and pulsing magnetic field to promote healing. Exercises, such as long-lining, hill work, and swimming, aim to strengthen the horse's core and back muscles, improving spinal stability and reducing symptoms (Stashak, 2006, p.357). Additionally, proper saddle fitting and adjustments to rider techniques can minimise back strain, contributing to long-term management (Bromiley, 2007, p.44-45).

Surgical interventions may be necessary in more severe cases where conservative measures are insufficient (Baxter, 2022, p.359). Common procedures include Interspinous Ligament Desmotomy (ISLD), which cuts the ligaments between affected spinous processes to alleviate pain, and partial resection, where part of the spinous processes is removed to prevent further contact (Pilliner et al., 2002, p.213-216). Although surgical outcomes are generally positive, with a success rate of 70% (McAuliffe, 2014, p.261) postoperative rehabilitation is critical to ensure long-term success.

In my opinion, post-surgery rehabilitation's primary goal for kissing the spine is to reduce pain, improve mobility, strengthen the surrounding muscles, and restore function to the spine. It's also important to work closely with a veterinarian to ensure a safe and effective recovery at every stage, with close observation.

Immediately following surgery, the primary focus should be on pain management and minimizing inflammation. The initial post-operative phase should focus on rest and monitoring, with horses typically confined to a stall and limited to short periods of hand-walking (5-10 minutes daily) to prevent stiffness (Stashak, 2006, p.358). Ice or cold therapy can be used to reduce inflammation. Gentle manual stretching would help maintain back flexibility to keep the muscles from becoming too stiff.

As healing progresses, the horse can gradually begin more active rehabilitation. During this phase, I think physiotherapy should involve light exercises aimed at improving

flexibility, mobility, and strength. I would focus on controlled movements, such as walking on soft ground or gentle lunging at a slow pace. Core strengthening and gentle stretches are essential at this point to help stabilise the spine and promote proper alignment. Therapeutic modalities such as massage, ultrasound therapy, and heat therapy can also aid in promoting circulation and muscle relaxation.

In the final phase of rehabilitation, the goal is to restore full strength and range of motion. I would gradually introduce more intense exercises, such as slow trotting or even light cantering, depending on the horse's condition and recovery progress. I would also recommend some groundwork or pole work to improve the horse's posture and movement patterns. Strengthening exercises to target the core, back, and hindquarters. The use of Equiband can also be highly beneficial. Equiband aids in strengthening the core muscles, which is essential for providing better support to the spine and improving overall posture. By engaging the horse's abdominal and back muscles, Equiband helps to reduce strain on the affected areas, promoting a more balanced and functional movement pattern. (Dr. N. Rombach, personal communication, January 8, 2025). The key focus at this stage is gradually increasing load-bearing exercises to build strength and muscle support around the spine.

I think successful rehabilitation relies on an individualised approach tailored to each horse's needs, considering factors like the severity of the condition, type of surgery, and discipline. Owners and trainers must understand the importance of adhering to the rehabilitation plan and avoiding premature strenuous activity. Collaboration with veterinarians, physiotherapists, and equine chiropractors ensures a comprehensive recovery process.

The prognosis for horses with back conditions can vary depending on the diagnosis and treatment. In a study of 190 horses diagnosed with chronic back pain, 57% of them recovered, regardless of the treatment approach or the specific diagnosis. However, in cases of 'kissing spines,' the prognosis for a full recovery tended to decrease as the number of affected sites increased. Despite this, some horses with low-grade back issues can still perform satisfactorily, and complete spontaneous recovery is not uncommon (Mair et al., 2013, p. 395).

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