

## Do You Have Your Jumper's Back?

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While I know that tax time has arrived, let's bring our eyes upwards today and discuss the pain in your horse's back. We have all seen it: A jumper is dismissed from the ring after continuously swapping leads behind, bucking and eventually refusing out. The rider is now being thrown from the saddle while posting at a trot yet the horse doesn't appear to have much impulsion. They dismount, remove the saddle and there it is. The horse's back is severely sunken behind the withers and looks like two rigid planks with the spine sticking out of the middle. The horse flinches as a brush runs absently over its back.

As veterinarians, we are constantly analyzing the complex "chicken or the egg model" when diagnosing any multifaceted lameness, such as back pain with muscle wasting. We want to

figure out what caused the dysfunction in the first place but how can we know when multiple structures appear to be involved? Sound research now shows us that loss of a horse's muscular topline is often caused by disease of the spine itself.<sup>1,3</sup> The localized inflammation caused by osteoarthritis in the spine's facet joints, for example, affects the function of the nerves leaving the spinal cord from that specific joint.<sup>1</sup>

The process is actually very similar to what happens in humans with lower back pain.<sup>2</sup> Messages from the brain and spine can no longer coordinate the muscles properly. In healthy horses and humans, certain core muscles contract even before a limb is moved to stabilize the back.<sup>1,2,3</sup> When the messages aren't being delivered properly via the nerves, these muscles do not contract as early as they should.<sup>1,2,3</sup> Therefore, the painful areas of the back are not being stabilized and become even more inflamed! A vicious cycle ensues and the back muscles become smaller and weaker in these areas.<sup>1,2,3</sup>

You may now be thinking that your horse's back looks like that but it doesn't feel off anywhere in particular. Alas, back pain can be tricky this way and your horse may simply seem cranky.<sup>3</sup> In most horses it typically results in decreased propulsion from the hind end without lameness, creating subpar performance.<sup>4</sup> This lack of impulsion can increase the forces running up your horse's limbs on both take-off and landing over-fences. One study showed that a poor performing 0.80m horse (defined as a horse with poor hind end propulsion) created the same amount of force up its legs at both take-off and landing as a well performing 1.30m horse!<sup>5</sup> The same research revealed that over the same fence height, the poor performing horses' bodies travelled lower than the well performing horses, increasing the number of rails down.<sup>5</sup> Once a horse's back is dysfunctional, they also begin to compensate biomechanically over fences requiring even more flexibility from their painful lumbosacral joint.<sup>5</sup>

The real kicker here is that even after the issues in the horse's back are properly diagnosed, treated, and the pain has resolved, the important core postural muscles will remain small and weakened.<sup>1</sup> This allows for continued biomechanical dysfunction and suboptimal performance. But all is not lost! Just like when you hurt your back, it is possible that physiotherapy can regain use of those important muscles again. While the physiotherapy exercises should be performed five days a week for three months, they may be worth the time as they may decrease the chances of reinjury as well as returning function to the horse's topline.<sup>1</sup>

Back pain in jumpers is common and often limits performance.<sup>4</sup> Fortunately, imaging techniques have evolved to make diagnosis and treatment of back pain possible in the field.<sup>6,7</sup> While these work-ups can be complicated, the veterinarians have the easy part. The specific rehabilitation requires significant time and effort from the horse's team but regaining function in the core muscles appears to be imperative to optimal performance over-fences, even after the pain has resolved.<sup>1,3,8</sup>

### References

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