

# A Shaky Subject

## Shivers (Shivering) in the Horse

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worked in equine hospitals both in the UK and Australia. Paula is currently an equine practitioner at WestVETS Animal Hospitals in Queensland.

Her clinical interests include diagnostic imaging, the investigation and management of musculoskeletal issues in the equine athlete, the equine foot, neonatology and internal medicine.

### What is Shivers?

Shivers or shivering are names that are used to describe a chronic nervous or neuromuscular syndrome in horses that has been recognised for centuries. Traditionally, it was recognised when horses were reversed in between the shafts of carts or agricultural implements when they were used as workhorses.

The condition is not very common but may be considered as a possible diagnosis in cases that appear to have a hindlimb gait abnormality.

The syndrome is most commonly diagnosed in draft horse breeds. However, it has also been reported in Warmbloods and Warmblood cross breeds. It is occasionally seen in lighter horses such as Thoroughbreds, but rarely in ponies.

### What are the signs of Shivers?

The clinical signs of Shivers may be variable – sometimes the signs may be intermittent and mild, but can also be severe and to the point of being debilitating. It may be very difficult to see in the early stages and require very careful observation.

The disease primarily affects one or both hindlimbs and tail. It is seen initially when the affected horse is backed up or when the hindlegs are being picked up. It is characterised by spasms of the muscles in the pelvic region, hind limbs and tail. Horses that are affected mildly show a trembling and jerking of the hind limbs and the tail is elevated.

**“Milder cases can be harder to diagnose.”**

In more severe cases the signs may become evident during forward walking.

Stress or excitement may exacerbate the signs. In some cases, the muscles of the upper forelimb, neck and body may become involved.

With progression of the disease, a gradual and progressive of wasting of the hindquarters and thigh may be noted.

### How do I know if my horse has Shivers?

Shivers can be straightforward to diagnose when the signs are clear, but milder cases can be harder to diagnose. A specific diagnostic test to confirm Shivers is currently not available. A thorough clinical examination should point this syndrome as a differential diagnosis and importantly, rule out other causes of gait abnormalities, or lameness that may have a similar appearance, or be confused with Shivers. The following are some of the diseases that may need to be considered as differential diagnoses.

#### 1. Stringhalt

This is the condition most often confused. It is characterised by a spasmodic and excessively rapid flexion of one or both hind limbs. It is particularly seen when the horse is walked slowly, turned or backed up. The classic movement is the hocks are flexed suddenly and violently towards the abdomen and then snapped back to the ground. These signs may be seen at the trot, whereas Shivers is not. Sometimes there is accompanying laryngeal paralysis.

#### 2. Upward fixation of the Patella

This occurs when the patella in the stifle becomes momentarily or permanently caught over the medial trochlear ridge of the stifle – the leg is fully extended. When the patella releases, the condition may mimic Stringhalt briefly.

#### 3. Fibrotic Myopathy

This results from scar tissue formation following injury to the semimembranosus or semitendonosis (back of thigh) muscles. The gait is characterised by a slapping type hind limb gait. Horses with this can back normally.

#### 4. Stiff Horse Syndrome (SHS)

This is a rare condition and resembles a condition in people – Stiff Person Syndrome. The horses show intermittent stiffness and spasm of the back and hind limb muscles. The muscles become enlarged (hypertrophied) rather than wasted.

#### 5. Equine Motor Neurone Disease (EMND)

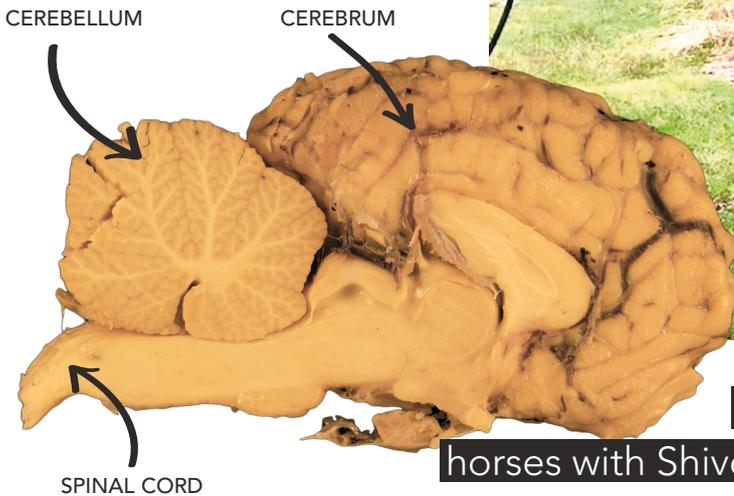
Characterised by progressive weight loss and muscle wastage and fasciculations. Occasionally there is abnormal tail elevation. Diagnosis is confirmed by a specific type of muscle biopsy.

### What causes Shivers?

The ultimate cause is unknown. However, one study showed that the brains of horses with Shivers were damaged in the cerebellum. The cerebellum is part of the brain that regulates muscular activity. There appears to be different nerve pathways for different gaits and for forward motion versus backward. It seems that in horses with Shivers there is a lack of an "off switch" for muscle contraction.



### EQUINE BRAIN



**"One study showed that the brains of horses with Shivers were damaged in the cerebellum."**

**Is Shivers Related to Polysaccharide Myopathy (PSSM)?**  
The breeds of horses that are affected by Shivers also have high rates of PSSM. However, one study has suggested they are not related.

**Is Shivers inherited?**  
There is no specific genetic pattern identified and no genetic test.



### How do you treat Shivers?

There is no effective treatment for Shivers. Some have reported an improvement with turn out and exercise with a high-fat low-carbohydrate diet. However, under stressful or painful situations these horses may regress. Adequate levels of vitamin E are believed to be important and may slow down the progression of the disease. Blood samples checking for levels can help with assessing the need for supplementation.

Adjunct therapies such as massage and acupuncture may help keep a horse comfortable.

At present, there is no cure and few effective treatments for Shivers.

### What is the Prognosis?

The prognosis seems to be variable. Some athletic horses that have Shivers perform at a high level. There are, however, others that begin to show signs at a young age and their signs worsen and impact their performance. The impact is most noted in dressage where fine muscle control is important, especially at high levels. The impact is also noted in driving horses where they need to be backed into the hitch.

It seems that in the short term Shivers may not impact performance. In the long

term (many years) some of the cases will show gradual progression leading to difficulty trimming and shoeing the hindfeet. As the progression occurs, then performance may drop off. In some cases, Shivers may result in euthanasia because of profound discomfort.

It is impossible to predict which horses remain static and which will progress.

### What should I do if I think my horse has Shivers?

It is important to involve your veterinarian and for the horse to have a complete evaluation. A thorough lameness and musculoskeletal examination is required to rule out other abnormalities.

The examination should involve backing the horse up and lifting the hindlimbs. Your veterinarian will be able to rule out other possible diagnoses and confirm the diagnosis. They then can advise appropriate management strategies.

Referral to a hospital with specialists could be considered if there is a question about the possible diagnosis and repeat examinations may be required to rule Shivers in or out. 🐾