

PITUITARY *PARS INTERMEDIA* DYSFUNCTION (EQUINE CUSHING'S DISEASE)

Pituitary *pars intermedia* dysfunction (PPID, also known as Equine Cushing's Disease) is a complex condition associated with abnormal function of a small, hormone-producing organ, the pituitary gland, which lies at the base of the brain. The cause is not fully known, but currently it is thought that as part of the ageing process, some horses develop an enlargement of part of the pituitary gland which then produces excessive amounts of a range of hormones important in controlling the body. The hormonal imbalances caused in PPID result in a range of clinical abnormalities.



**Excessively long hair coat in old horse
with PPID**

What are the clinical signs?

The average age of a horse or pony with PPID is 20 years, although horses as young as 7 years can be affected. The most striking sign, but one which is not always present, is an excessively long and curly coat. This is caused by the hair coat not being shed normally. This 'woolly bear' appearance may have been preceded by several years during which the winter hair coat was not shed until very late. Many affected horses drink excessive amounts of water and produce large volumes of urine. Other signs are lethargy, weight loss or an inability to maintain muscle while accumulating patchy fat (especially on the crest and on top of the rump) and excessive sweating. Affected cases often suffer from acute or recurrent attacks of laminitis. This is usually a slow onset laminitis that responds poorly to treatment until the PPID is corrected. Many suffer from decreased response to pain. PPID weakens the immune system and affected horses or ponies can more easily develop pneumonia, dental infections or other secondary infections.

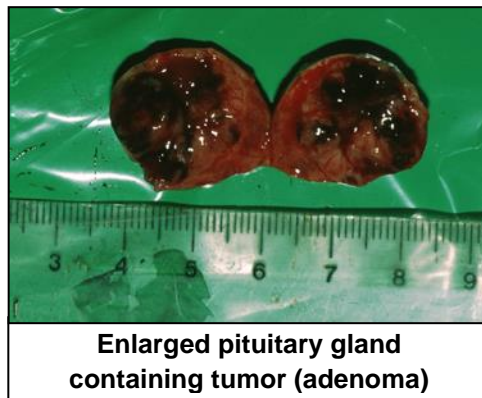
How is the condition diagnosed?

In aged horses or ponies with hair coats that are several inches long and curly and there is a history of laminitis and/or excessive drinking, the diagnosis can often be made on these grounds alone. In other less obvious cases, the diagnosis depends on a blood test called resting adrenocorticotrophic hormone concentration (ACTH) test. This test is done with a simple blood draw and goes to a lab. Results are usually back within 3-4 days. False negatives are possible with this

test but only happen in 10-20% of cases. Several factors complicate the use of this test. One is that a horse's resting ACTH levels naturally increase in the fall, making it more difficult to diagnose borderline and mild cases. However, moderate to severe cases are still diagnosable this time of year. Also, this test can come back falsely positive if your horse is stressed when his blood is drawn. This includes severe illness, recent competition or trailering, or recent changes in management. We continue to use the resting ACTH test because it gives reasonably accurate results without requiring two trips to the farm, as the previous tests did.

Is any treatment available?

The main treatment is with the drug pergolide. It is available as small tablets, given daily for the life of the horse. It works best when it is administered by itself, directly into the horse's mouth and not mixed into grain. The dose is variable, but can be increased if the initial level does not control the disease. The clinical signs will often improve within 1-2 months on pergolide, but sometimes the hormonal response will not, giving you a horse that looks better, but is still at risk from the disease. We recommend annual retesting by ACTH concentration test to ensure that an effective dose is being given. Other drugs that help in PPID are cyproheptadine and, possibly, Chasteberry extract. These should only be used in addition to pergolide and never as the primary drug themselves. In most cases, increasing the dose of pergolide works much better than adding other drugs. Also, due to the complex, multi-organ problems that can be associated with PPID, treatment must include attention to all aspects of the animal's condition. Affected horses are more susceptible to parasites and infection, so regular deworming, vaccinations and dental care must be maintained. The diet should be changed to a low carbohydrate, low glycemic index feed. Snacks based on corn, flour, or that contains sugar or molasses, must be avoided. The hay should be of good quality, and not excessively rich. For the most affected horses, the hay may need to be soaked before feeding to remove sugars. Horses with excessively long coats should be clipped. Exercise is very important and a regular work schedule should be maintained, if the horse is sound and comfortable.



Can it be prevented?

It is not possible to prevent this condition. We know that Cushings is often associated with obesity and insulin resistance, but the link between them is not clear. Research is underway to find any contributing environmental or management factors, but nothing is clear yet. However, with available blood tests we are now able to recognize and treat more cases earlier and more effectively and most treated horses and ponies go on to live normal lives for many years after diagnosis and continuing treatment. Many owners are pleased to find a more lively or youthful horse after starting pergolide.