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## **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.

### ***What are the clinical signs?***

The average age of a horse or pony with PPID is 20 years, although horses as young as 11 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 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 liver disease. PPID weakens the immune system and affected horses or ponies can more easily develop pneumonia, dental infections or other secondary infections.



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

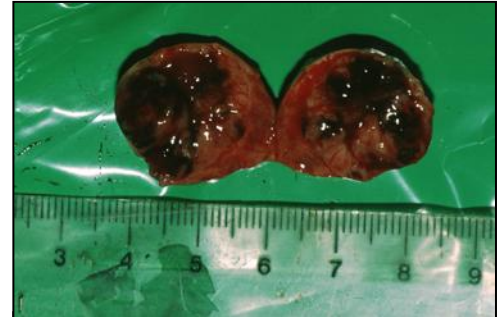
### ***How is the condition diagnosed?***

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 the Dexamethasone Suppression Test (DST). An injection of dexamethasone is given, and 19 hours later, a blood sample is taken. By measuring cortisol, a hormone in the blood, it can be determined if the horse has PPID. The DST is, by far, the most accurate method of diagnosing PPID. It is simple and safe, and the most economic of all the tests for PPID. This, and all other, tests for PPID lose accuracy in the Fall, and it is not recommended to test from the middle of August through the middle of November. False positives are very common during this time.

### ***Is any treatment available?***

The main treatment is with the drug pergolide. It is available as tablets, flavored wafers, or most commonly, as a liquid. It is 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 rapidly improve 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 DST to insure that an effective dose is being given. Other drugs that help in PPID are cyproheptadine, trilostan, 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 contain sugar, 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.



**Enlarged pituitary gland  
containing tumor (adenoma)**

### ***Can it be prevented?***

It is not possible to prevent this condition. 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 treatment. Many owners are pleased to find a more lively or youthful horse after starting the medication.

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