

AT A GLANCE

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Diagnosing Equine **CUSHING'S DISEASE**

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Years ago, veterinarians relied on clinical signs to diagnose equine pituitary pars intermedia dysfunction (also known as PPID or equine Cushing's disease). Laboratory diagnostic testing lagged far behind diagnosis via "clinical impression" made by the attending veterinarian, because blood test results were often unclear.



Veterinarians used to rely on clinical signs such as a shaggy, irregular coat to diagnose PPID. Now, testing allows for early disease identification and treatment.

JANIS TREMPER

WHAT IS **PPID**?

This disease develops when nerve cells (neurons) in a region of the horse's brain called the hypothalamus deteriorate. These neurons regulate a part of the pituitary gland—the pars intermedia. Without nerve input and control, the pars intermedia begins to grow and produce excess levels of various hormones. High circulating levels of these hormones are thought to be responsible for the clinical signs of PPID.

FAST FACT!

PPID affects between one in three and one in five horses over the age of 20, making this the most common endocrine (hormonal) disease of aged horses.

Early signs of PPID include:

- Decreased athletic performance/lethargy;
- Delayed shedding or regional hypertrichosis;
- Topline loss (decreased epaxial muscle mass along the length of the spinal column);
- Regional adiposity (fat pockets); and
- Laminitis.

Classic signs of PPID

that helped veterinarians make a diagnosis included:

- Hypertrichosis (excessive hair growth) and/or lack of seasonal shedding;
- **Recurrent laminitis;**
- Muscle wasting and pendulous abdomen due to muscle loss;
- Recurrent infections (e.g., sole abscess, skin infections);
- Abnormal sweating patterns;
- **Polyuria and polydipsia** (excessive urination and thirst, respectively); and
- Behavior changes/dullness/depression.



Recurrent laminitis

ERICA LARSON



Polyuria and polydipsia

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Unfortunately, by the time veterinarians could diagnosis PPID based on these signs, horses were frequently severely affected and their survival times were short, even with appropriate treatment.

Now, owners and trainers recognize more subtle signs of PPID earlier in life, which allows them to begin appropriate therapy (e.g., pergolide) in a more timely fashion.

AT A GLANCE Diagnosing Cushing's Disease



ALEXANDRA BECASTET

While various tests can help diagnose PPID, the Equine Endocrinology Group suggests only 2 tests based on severity of clinical signs.

ACTH Adrenocorticotropic hormone **TRH** Thyrotropin-releasing hormone

TEST	RESTING ACTH TEST	TRH RESPONSE TEST
Who's it best for?	Horses with obvious/advanced signs of PPID	Horses with early/potential signs of PPID
How it works	This simple blood test requires measuring a single blood sample obtained at any time of the day for ACTH hormone levels. If the values exceed the seasonally appropriate normal ranges, then the test is considered positive for PPID. If test results are equivocal (not definitively positive or negative), then a TRH (thyrotropin-releasing hormone) response test should be performed.	In this test, the veterinarian administers TRH intravenously and obtains two blood samples to measure ACTH levels: one just before TRH administration and a second sample exactly 10 minutes after. If the ACTH levels increase excessively in response to TRH, then the test is positive for PPID.

See the Equine Endocrinology Group website at sites.tufts.edu/equineendogroup for each test's specific seasonal reference ranges. Also, some older horses might have more than one endocrinopathy at the same time. The Equine Endocrine Group suggests horses suspected of having PPID should also undergo testing for insulin dysregulation using either an oral sugar test or resting insulin concentration.

BASIC BLOOD TESTS showing increases or decreases in certain white blood cells (neutrophils and lymphocytes, respectively) as well as high blood sugar (hyperglycemia), insulin (hyperinsulinemia), and fat (hypertriglyceridemia), can help support a PPID diagnosis, as can increased fecal egg counts. These tests should be interpreted together with the ACTH and TRH response tests described above.

CAVEATS

So, when presented like this, it sounds as if diagnosing equine Cushing's disease is simple, right? Think again! All hormone levels fluctuate daily and seasonally. These tests are both based on hormone levels (ACTH), so the laboratory-generated reference ranges that declare values "normal" vs. "abnormal" are specific to certain times of the year.



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Likewise, separate cutoff values exist for the ACTH test during different seasons. Finally, results can be equivocal and must be considered together with clinical signs of disease when making a diagnosis.

In addition, appreciate that reference ranges are based on a certain population and type of horse. Therefore, the results might vary in draft, pony, or other breeds. In certain situations, veterinarians might elect to treat horses with pergolide even if the blood test results do not come back as definitively positive.

TREATMENT

Pergolide remains the treatment of choice for horses diagnosed with PPID.

This drug decreases hormone production from the pars intermedia. Within a mere 1-3 months, owners generally see an improvement in clinical signs (improved hair coat and shedding, increased muscle mass, more energy, decreased thirst and urination, and possible improvement in clinical signs of laminitis). Rechecking ACTH levels or TRH stimulation test results helps ascertain response to treatment.

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THE HORSE YOU KNOW IS STILL IN THERE.

The clinical signs of PPID (pituitary pars intermedia dysfunction) can make a horse unrecognizable. The good news is the horse you know is still in there, hiding behind the signs of PPID. Prascend® (pergolide tablets), the first and only FDA approved treatment for PPID, can control the signs associated with PPID, and bring back the horse you know. [Learn more at Prascend.com](http://Prascend.com)

Prascend®
(pergolide tablets)

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