

Recovery is Within Reach

When correctly diagnosed, and treated with appropriate medication, diet and hoof care, horses and other equines with Cushing's disease and Insulin Resistance can become and remain sound, healthy and happy.



Tamera – diagnosed with Cushing's, boss mare at 31

The Equine Cushings Group

The Equine Cushings group – led by Eleanor Kellon, V.M.D and combining over seven years of experience from more than 5,000 members – provides research and support to continue the battle against the devastating and debilitating effects of Cushing's disease and Insulin Resistance.

Through the devotion of countless horse owners and the dedication of their veterinarians and hoof care professionals, thousands of equines have regained their health and escaped euthanasia.

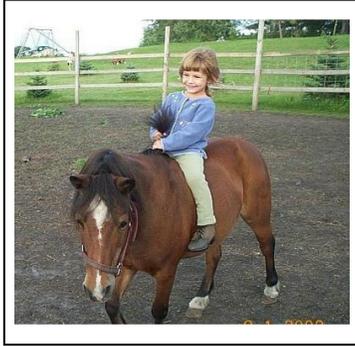
Further information is available from

<http://pets.groups.yahoo.com/group/EquineCushings/>



Equine Cushings and Insulin Resistance Group

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Billy the Wonder Pony – foaled 1963

Equine Cushing's Disease

A Basic Guide to Recognizing and Treating Cushing's Disease and Insulin Resistance



*Kelton at Fair Hill 2004
Now 23, sound and active*

Provided by the Equine Cushings Group

Recognizing and Treating Equine Cushing's Disease and Insulin Resistance

Signs & Symptoms

While Equine Cushing's disease (pituitary pars intermedia dysfunction or PPID) and Insulin Resistance (IR or metabolic syndrome) are distinctly separate conditions, the often overlapping signs and symptoms can make diagnosis difficult.

Cushing's Disease

Cushing's disease refers to a condition characterized by excess production of the hormone cortisol as a result of a tumor in the pituitary gland of the brain, which produces high levels of the hormone ACTH. The ACTH causes high cortisol release from the adrenals. Although the most distinctive clinical sign of Cushing's is a long hair coat which does not shed out - **the first symptom is often unexplained laminitis in the autumn.**

Other signs may include

- Enlarged mammary glands
- Milk production in unbred mares
- Increased thirst/urination
- Loss of condition and muscle wasting.

Insulin Resistance

Insulin Resistance is a loss of sensitivity to insulin at the cellular level. It may be an inherent genetic tendency, or induced by the high cortisol in PPID/Cushing's.

Typical signs and symptoms of IR include:

- Easy weight gain
- Abnormal fat deposits such as a cresty neck or lumpy fat patches which persist even if the horse loses weight, fatty sheath
- Puffiness in the hollows above the eyes
- History of laminitis - commonly induced by grass
- Advanced symptoms include increased thirst and urination, loss of body condition and muscle wasting and low energy levels.

Diagnosing PPID vs. IR

Because they are treated differently, it is important to get a correct diagnosis.

Diagnosing Cushing's Disease

Endogenous ACTH - a single blood draw to measure the level of endogenous ACTH (adrenocorticotrophic hormone) is diagnostic for Cushing's in equines. (1)

Dexamethasone Suppression - measures cortisol response to a dexamethasone challenge. While considered the "gold standard" by some, it may pose a risk of precipitating or exacerbating laminitis. (1)

Cortisol rhythm - not diagnostic for Cushing's.

Diagnosing Insulin Resistance

IR is diagnosed by obtaining **non-fasting glucose and insulin levels** from the same blood draw, then dividing glucose in mg/dL by insulin in uIU/L to obtain a glucose/insulin (GI) ratio.

A GI ratio of less than 4.5 is considered positive for IR. A GI ratio between 4.5 and 10 indicates compensated IR. (2)

Treatment

Cushing's disease tends to develop as equines age. Younger horses are more likely to be only insulin resistant, while older horses may develop and require treatment for both Cushing's and IR.

Treating Cushing's Disease

Equine Cushing's disease is controlled with the medication Pergolide, available only by veterinary prescription through compounding pharmacies. Follow up testing for ACTH levels is recommended to determine if the dose is adequate or excessive. Some equines may need a

higher dose during the autumn and winter but are able to return to their normal maintenance dose in spring.

The herb Chaste Tree Berry (available in several forms) may control symptoms for some horses, especially if there is an element of excessive prolactin production. Most equines with a definitive diagnosis of Cushing's will eventually need to be maintained on pergolide. (3)

Treating Insulin Resistance

The primary treatment for equines with IR only, and for equines with both Cushing's and IR, is a tightly carbohydrate controlled and mineral balanced diet.

Any grain products and pasture turnout should be eliminated until all signs of IR are totally absent and reintroduced only with extreme caution. Low carbohydrate hay or forage products (NSC 10% or less by testing or soaked and drained to remove soluble sugars) should be fed at rates recommended in the 2007 Nutrient Requirements for Horses, along with adequate salt and balanced mineral supplements. (4)

Attempting to achieve weight loss by reducing intake below 1.5% of body weight can worsen IR and precipitate hypertriglyceridemia.

References

- (1) Cornell University Animal Health Diagnostic Laboratory, 2006. <http://www.diaglab.vet.cornell.edu/endo/vetserv.asp>, Equine Cushings test.
- (2) AJVR, Vol 66, No 12, 2006, p 2114-21.
- (3) Laminitis Trust Clinical Trial. <http://www.laminitis.org/Vitex%20trial.html>.
- (4) Comp of Continuing Education for the Practicing Veterinarian. Vol 26(2), Febr. 2004.