

# Equine Newsletter

## EQUINE METABOLIC SYNDROME AND EQUINE CUSHING'S DISEASE (PPID)



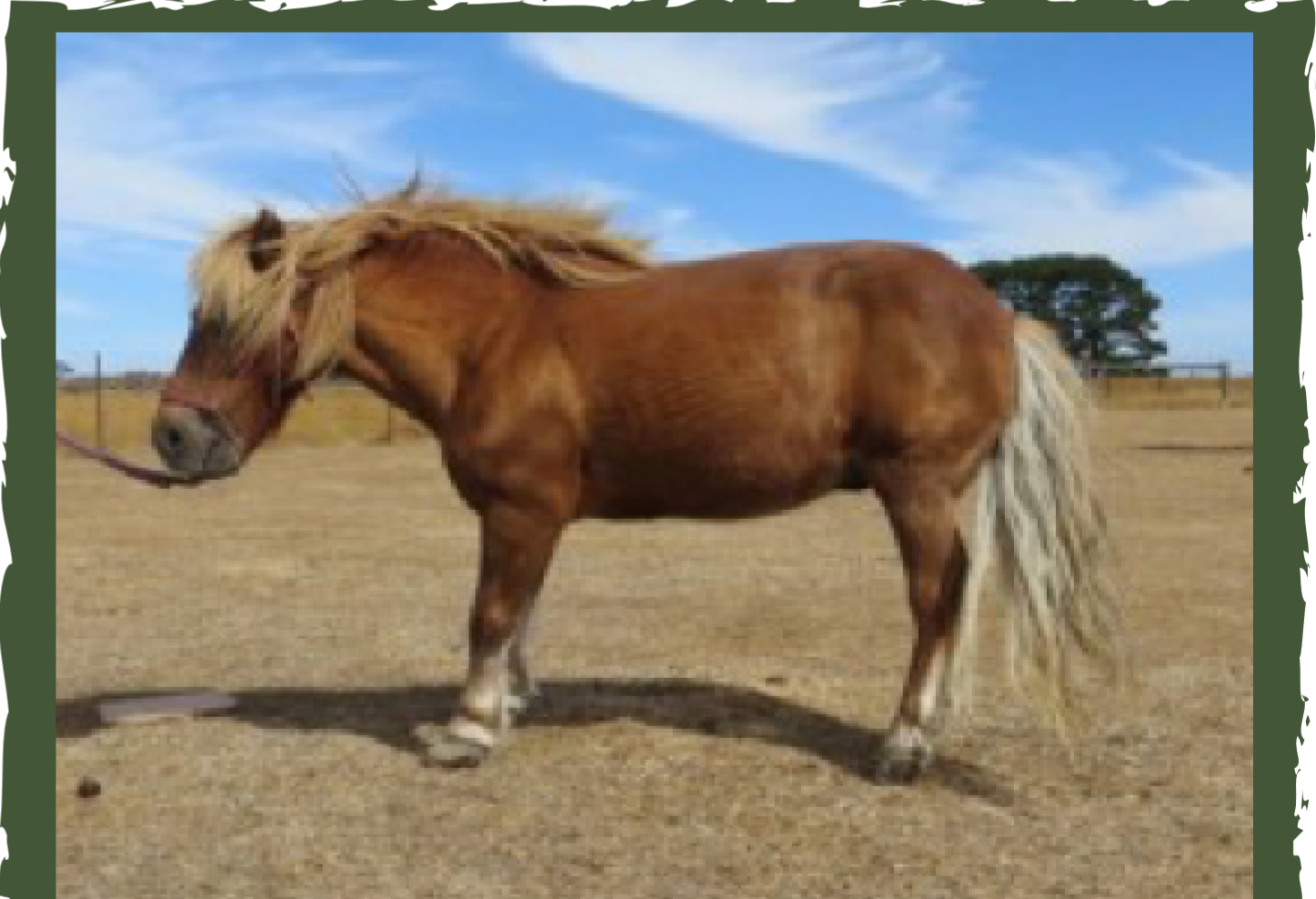
### WINTER 2019

We often hear of overweight horses and ponies that are suspected of having Equine Cushing's Disease, and are asked about how to feed and manage these cases. In order to make appropriate recommendations, we must undertake a thorough investigation of each case. The related and overlapping conditions known as Equine Metabolic Syndrome and Equine Cushing's Disease both make horses susceptible to laminitis; however, the first requires dietary management, and the second requires medical management. Some horses can be affected by both conditions although it is not currently known if one causes the other or if they are truly separate conditions.

**Equine Metabolic Syndrome** is a collection of clinical signs consisting of:

- 1. Obesity
- 2. Insulin Dysregulation
- 3. Clinical, subclinical, or preclinical laminitis

The insulin dysregulation seen in Equine Metabolic Syndrome is similar in many respects to Type II Diabetes in humans, except that it is not treated with insulin, and affected horses do not have glucose in their urine.



*Horse with signs of Equine Metabolic Syndrome*

Equine Cushing's Disease is technically called Pituitary Pars Intermedia Dysfunction (PPID).

The mechanism of disease in horses is different than in humans or other animals and while Equine Cushing's Disease is a term that is frequently used, we should remember that the condition in horses has very few commonalities with the disease in other species.

Clinical signs associated with PPID include:

- 1. Long hair coat that does not shed out normally in spring
- 2. Increased susceptibility to infection (e.g. hoof abscesses, periodontal disease)
- 3. Laminitis
- 4. Muscle wasting

5. Increased drinking and urination
6. Tendon and ligament laxity
7. Regional fat deposits (e. g. above the eyes)
8. Insulin resistance
9. Change in attitude
10. Enlargement of the pituitary gland



PPID results from a disruption in the normal hormonal cascade that starts in the hypothalamus. The hypothalamus produces a hormone called dopamine. Decreased dopamine activity allows the intermediate part of the pituitary gland to become

hyperactive which causes it to secrete large quantities of various hormones that result in the clinical signs of PPID. One of these hormones that you may be familiar with is Adrenocorticotrophic Hormone (ACTH).

### **Diagnosis**

Due to the similarities diagnosis of these conditions by clinical signs alone is challenging. We use a panel of blood tests to determine which horses have Equine Metabolic Syndrome, which horses have PPID, and which horses have both. As unfortunately these two conditions can occur together. Determining which condition a horse is afflicted with is essential if we are to make the most appropriate recommendations for improving the health and well being.

When Equine Metabolic Syndrome or PPID is suspected, we will collect blood to test for the hormones ACTH and Insulin. When results are equivocal or do not seem to fit with the clinical signs observed, the thyrotropin stimulation test and the glucose-insulin response tests can be carried out.

### **Treatment**

Equine Metabolic Syndrome is treated primarily by dietary restriction. Increasing exercise level is beneficial for those horses not suffering from active laminitis. Restricting feed intake in obese horses to 1% of bodyweight today usually results in weight loss, and weight loss can restore insulin sensitivity. Management of laminitis with medication and corrective farriery will be much more successful if insulin sensitivity is restored.

PPID is treated by daily administration of the drug pergolide, which mimics the action of dopamine on the pituitary gland. Diet only affects horses with PPID if they also have insulin resistance. Some horses will therefore require both medication and dietary restrictions.

### **Prevention**

Equine Metabolic Syndrome can be prevented by monitoring the body condition of our horses and restricting feed intake if body condition score is greater than 3.5 out of 5. Preventing PPID is more difficult as we are unsure of all of the factors that lead to the development of the disease. Our veterinarians watch for signs of Equine Metabolic Syndrome and Equine Cushing's disease whenever they are examining or vaccinating horses and many early cases are identified for testing this way.