

## PITUITARY PARS INTERMEDIA DYSFUNCTION (PPID)

Pituitary Pars Intermedia Dysfunction (PPID) or Equine Cushing's Disease is a common endocrine illness affecting middle aged to older horses. It involves the degeneration of neurons within the hypothalamus that directly affect hormone production of special cells (melanotropes) within the pituitary gland in the brain. This results in a reduction of dopamine (a "feel good" hormone), which in turn allows melanotropes to grow in size and produce increased amounts of Adrenocorticotrophic Hormone (ACTH) along with other hormones. This increased ACTH production acts to increase systemic cortisol levels, which then places the horse in a chronically "stressed" state and increases their risk of concurrent illness. A recent Australian study found that the prevalence of PPID in horses greater than 15 years old was approximately 20%, with the incidence increasing each year thereafter.

### Clinical signs

Can include:

- Long/curly coat (hirsutism)
- Abnormal hair shedding
- Excessive or inappropriate sweating
- Pot-bellied appearance
- Loss of muscle mass
- Abnormal fat deposits- above eyes and crest of neck.
- Increased thirst and urination
- Increased appetite
- Lethargy
- Repeat laminitic episodes +/- hoof abscesses
- Chronic skin infections



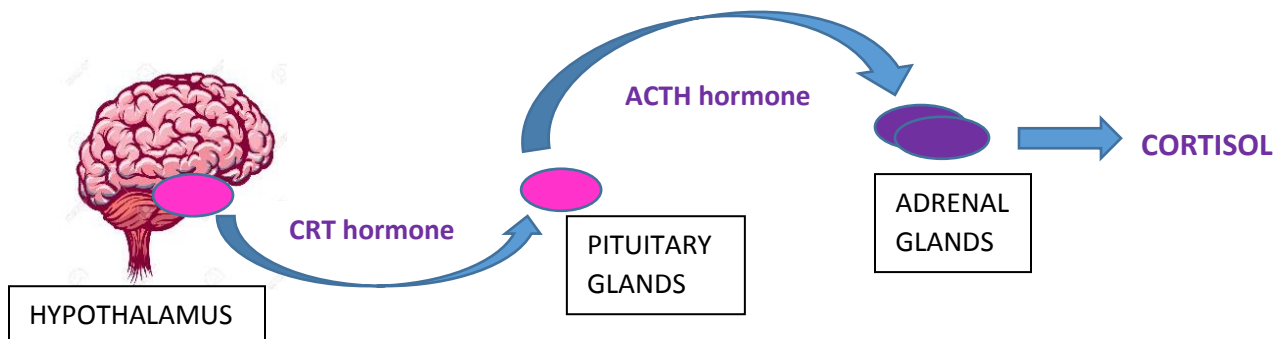
Picture 1: 34 year old pony with hirsutism (long, curly coat)

It can also cause non-cycling and abnormal mammary gland development and lactation in mares.

Due to prolonged elevations of cortisol many PPID horse can become immunosuppressed which then increases their risk of developing chronic infections. Elevated cortisol may also increase insulin levels and be a factor in the development of insulin resistance and Equine Metabolic Syndrome.

## Diagnosis

There are a variety of ways to diagnose PPID in horses, the simplest being a single blood sample that measures circulating ACTH levels. If ACTH is greater than normal limits for the equine population at that time of year then a diagnosis of PPID can be made. Note that ACTH levels may be elevated in Autumn due to seasonal effects on the pituitary gland, however, PPID horses generally have elevated ACTH results well above normal ranges due to this effect.



## Treatment

Treatment of PPID is managed very well medically. It involves daily administration of pergolide which is an oral medication (available in liquid or tablet form). Pergolide acts to increase dopamine levels within the body which then reduces ACTH production and hence cortisol levels. Another medication that works similarly to reduce ACTH production by the pituitary gland is cyproheptadine. It is considered less effective than pergolide, however, the two medications can be used together to effectively treat horses where pergolide alone is not enough. Due to the progressive nature of PPID the amount of drug required to manage this condition will likely need to increase over time. Repeated ACTH testing is recommended to monitor effectiveness of treatment and assist your veterinarian in determining the need for increased doses. Clinical improvement is generally seen within 6-8 weeks of initiating treatment.



Picture 2: 34 year old pony after starting treatment with prascend (6 months after starting treatment)

## Other factors

Good husbandry practices are crucial when caring for a horse with PPID. Annual dental examinations are important as they are often older patients with increased risk of dental disease and associated illnesses. Good dental health is crucial for older horses to make better use of their feed. Diet should ideally consist of low glycemic index feeds and poor quality grass hay. These provide the necessary fibre for adequate gut function without additional sugars, which may contribute to the development of laminitis.

Laminitis is generally slow in onset, extremely painful and is considered the most damaging consequence of PPID. Regular foot trimming will allow owners to closely monitor for any changes in hoof shape and growth as well as pain. Veterinary attention should be sought if laminitis is suspected to provide pain relief and to work in conjunction with owners and farriers to reduce recurrent laminitic episodes in the future. We are strongly against prolonged use of anti-inflammatories for management of laminitis, determining the cause of the laminitis is of greater benefit to both owner and horse.

PPID is a lifelong condition that is poorly recognised in our aged equine patients, but can easily be diagnosed and managed. We strongly recommend annual testing for PPID in older horses as early recognition and regular appropriate veterinary care and husbandry are imperative to improve their quality of life as they age.

**If you have any questions or concerns please contact us on 0412 619 740.**