# EPIDEMIOLOGICAL CHARACTERISTICS OF HORSES WITH PPID

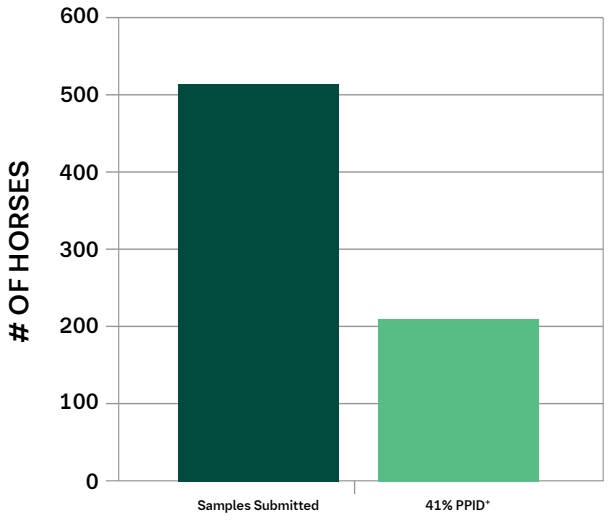
Pituitary pars intermedia dysfunction (PPID) has been described as the most common endocrinologic disorder of aged horses. Few studies exist that describe the epidemiological characteristics of horses with PPID. The purpose of this study was to obtain epidemiological information that included age, breed, sex, clinical signs and insulin/glucose status at initial PPID diagnosis (new cases) from a large population of horses. Enrolled horses had at least one clinical sign associated with PPID.

Five hundred fifteen of 982 horses with complete information were included. Sixty-six breeds or cross-breeds were represented. Horses were stratified into one of four groups shown below, based on adrenocorticotropic hormone (ACTH) and insulin laboratory results:

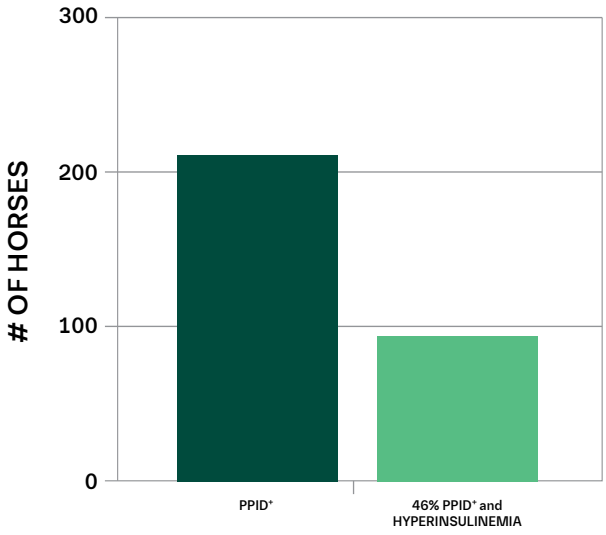
41% OF HORSES WERE PPID$^+$ **AND 39.4% WERE HYPERINSULINEMIC (HI)**

- **22.3% were PPID$^+$/ HI$^-$**
- **20.6% were PPID$^-$/ HI$^+$**
- **18.8% were PPID$^+$/ HI$^+$**
- **38.3% were PPID$^-$/ HI$^-$**

**PPID$^+$ HORSES[1]**

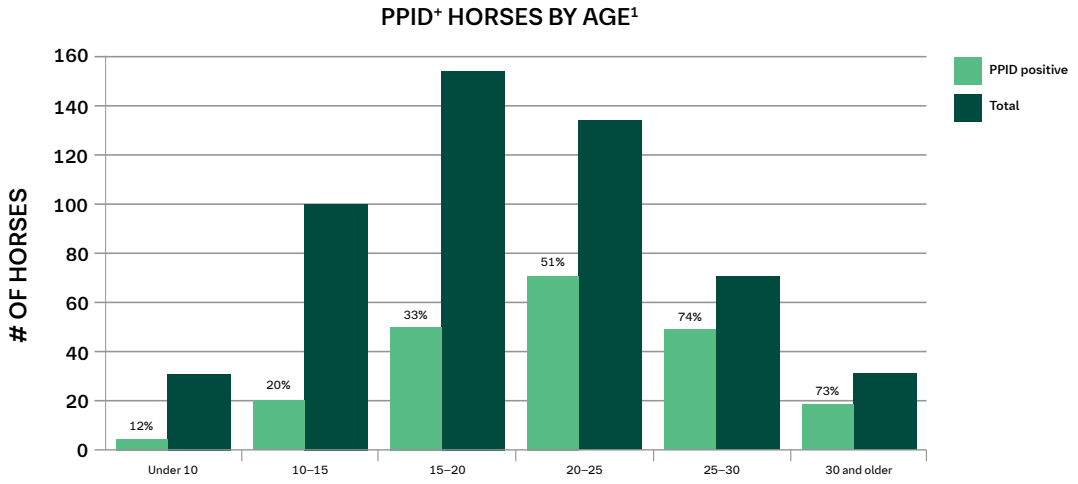


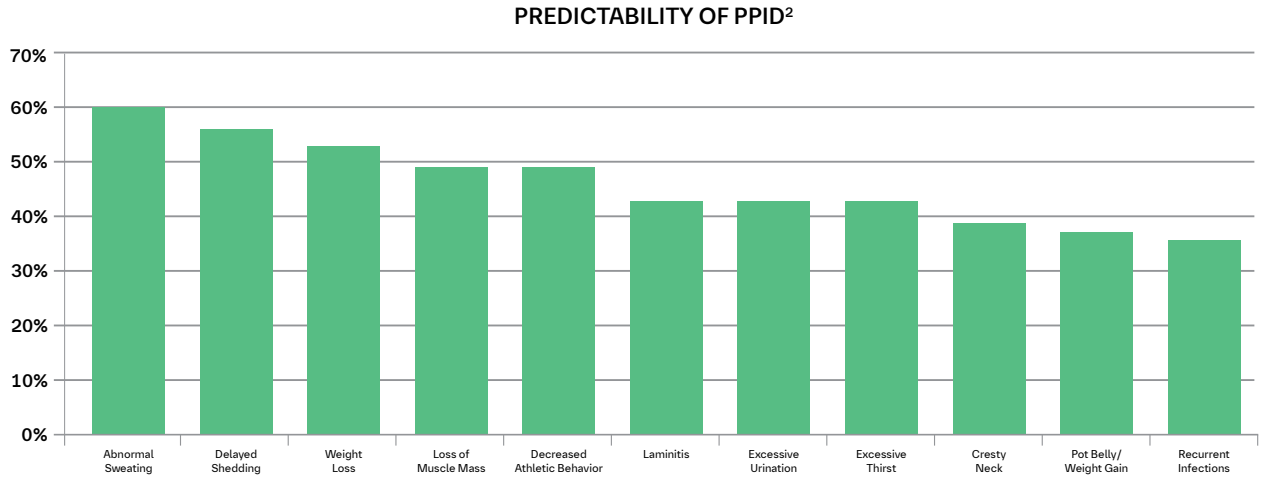

**PPID$^+$ AND HYPERINSULINEMIA[1]**




Horses of any age, breed and sex from the continental United States were eligible for study enrollment, as long as they were exhibiting one or more clinical signs associated with PPID. Normal horses were excluded from the study. At the initial visit, signalment was recorded, a physical examination was conducted, clinical signs were documented, and blood was drawn for resting ACTH, insulin, and glucose.

Boehringer Ingelheim




**60%** of the horses with abnormal sweating were PPID⁺

**56%** of the horses with delayed shedding were PPID⁺

**53%** of horses presenting with weight loss were PPID⁺

## SUMMARY

Of the horses enrolled, 61.7% of the horses were diagnosed with an endocrine disorder (PPID and/or hyperinsulinemia). Pituitary pars intermedia dysfunction **prevalence increased significantly by age ($P < 0.001$),** and was **significantly higher in horses** with above-normal levels of insulin ($P = 0.014$) and glucose ($P = 0.016$). Further, 46% of PPID horses were also hyperinsulinemic.

Therefore, when evaluating horses with suspected endocrine disease, at a minimum, ACTH, insulin and glucose should be evaluated.

### Reference

[1]Grubbs ST, Neal DL and TJ Keefe. Epidemiological characteristics of horses with PPID at initial diagnosis. *J Vet Intern Med* 2015;29:1231.
[2]Grubbs ST, Neal DL and TJ Keefe. Clinical signs associated with PPID status in a large population of horses. *J Vet Intern Med* 2015;29:1242.