

Optional TRH Stimulation Test Instructions

In the fall of 2013, the Equine Endocrinology Group first recommended the thyrotropin-releasing hormone (TRH) stimulation test, which is particularly useful for diagnosis when horses have signs of early PPID or normal resting ACTH concentrations.¹ TRH causes the pituitary gland to release more hormones, and ACTH concentrations increase to a higher level in horses with PPID. This test is easily performed by taking a baseline blood sample, injecting TRH intravenously and collecting a second blood sample exactly 10 minutes later.² TRH stimulation tests should only be conducted mid-November to mid-July until seasonally adjusted reference intervals have been established. Previous studies have reported an intermittent frequency of chewing, licking, yawning, flehmen and coughing following the IV administration of TRH in horses.^{3,4}

Procedure:

1. Horses can be tested after hay is fed, but not within 12 hours after a grain meal.
2. Collect baseline blood sample in purple-top (EDTA) tube:
 - a. Time 0 (T0 – pre-TRH administration).
3. Administer 0.5 mg (horses <250 kg) or 1.0 mg (horses >250 kg) of TRH intravenously:
 - a. Set cellphone timer for 10 minutes.
4. **Exactly 10 minutes (T10) relative to TRH administration:**
 - a. Collect a second blood sample in a separate purple-top (EDTA) tube.
5. Label purple-top (EDTA) tubes accordingly (T0 or T10).
6. Submit plasma from each time point (T0 and T10) for measurement of ACTH.

Interpretation of Resting ACTH Results

Mid-November to Mid-July			
	Negative	Equivocal	Positive
0 minute (T0)	<30 pg/mL	30-50 pg/mL	>50 pg/mL
10 minutes (T10)	<110 pg/mL	110-200 pg/mL	>200 pg/mL
Reference intervals are the subject of ongoing research			
Mid-July to Mid-November			
Reference intervals are not available at this time. Further research is required to establish reference intervals.			

¹Equine Endocrinology Group Recommendations, 2013, 2015 and 2017.

²Goodale L, Hermida P, D'Oench S, Frank N. Assessment of compounded thyrotropin-releasing hormone for the diagnosis of pituitary pars intermedia dysfunction in horses. ACVIM Annual Forum, Seattle, Washington. J Vet Intern Med. 2013;27:656.

³Beech J, et al. Adrenocorticotropic concentration following administration of thyrotropin-releasing hormone in healthy horses and those with pituitary pars intermedia dysfunction and pituitary gland hyperplasia. J Am Vet Med Assoc. 2007;231(3):417-426.

⁴Diez de Castro E, et al. Influence of feeding status, time of day, and season on baseline adrenocorticotropic hormone and the response to the thyrotropin-release hormone-stimulation test in healthy horses. Domest Anim Endocrinol. 2014;48:77-83.

QUESTIONS? Please contact Boehringer Ingelheim Customer Care at **888-637-4251** or **CustomerCare@boehringer-ingelheim.com**