

COMPARING - EMS and Hypothyroidism

	Equine Metabolic Syndrome (EMS)	Hypothyroidism
Frequency	Common	Rare
Breeds predisposed	Ponies, Minis, Arabians, Gaited Breeds, Spanish Breeds	No breed predilection reported
Cause	Insulin dysregulation/resistance	Low circulating thyroid hormone
Clinical signs	<ul style="list-style-type: none"> • Overweight/obese with weight-loss resistance • Regional fat deposits (ie, cresty neck) • Laminitic episodes/predisposition 	<ul style="list-style-type: none"> • Vague! • Lethargy • Exercise intolerance • Cold sensitivity • Poor coat quality • Bradycardia (low heart rate)
Diagnostic tests	<ul style="list-style-type: none"> • Baseline insulin (false negatives possible) • Oral sugar test • Insulin tolerance test • Other related tests: Leptin, Triglycerides, Adiponectin 	<ul style="list-style-type: none"> • Baseline T3/T4 • Free T4 • TRH/TSH stimulation
Treatment	<ul style="list-style-type: none"> • Diet low in non-structural carbohydrates (starches, sugars) • Weight loss • Medications to improve insulin sensitivity (metformin) • Weight loss-promoting drugs (levothyroxine) 	<ul style="list-style-type: none"> • Thyroid hormone supplementation (levothyroxine)
Resources	Bertin, F. R. (2023, June 16). <i>Thyroid Hormones in Horses</i> [Presentation, ACVIM (American College of Veterinary Internal Medicine) Forum]. Large Animal Internal Medicine, 6 th Edition (Smith, Van Metre, Pusterla)	

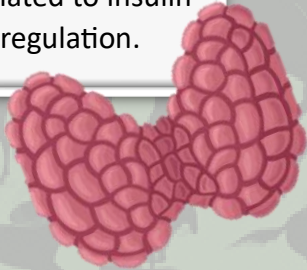
Is It a Thyroid Problem?

The thyroid gland serves a number of diverse functions in the body such as thermoregulation, growth, and metabolism.

It is a common misconception that metabolic disorders in horses are thyroid related. In reality, primary thyroid disorders are quite rare in horses. Read on for more about the equine thyroid!

Most symptoms historically attributed to low thyroid (hypothyroidism) in horses are actually a manifestation of equine metabolic syndrome (EMS).

EMS is a syndrome related to insulin resistance/insulin dysregulation.



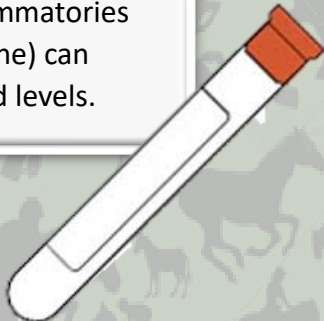
The supplementation of thyroid hormone in horses is primarily to promote weight loss in overweight/obese patients. Thyroid hormone (levothyroxine) can promote weight loss via improved metabolism.

In overweight horses, thyroid hormones should only be supplemented for short periods (3-6 months) and must be gradually weaned off over several weeks.

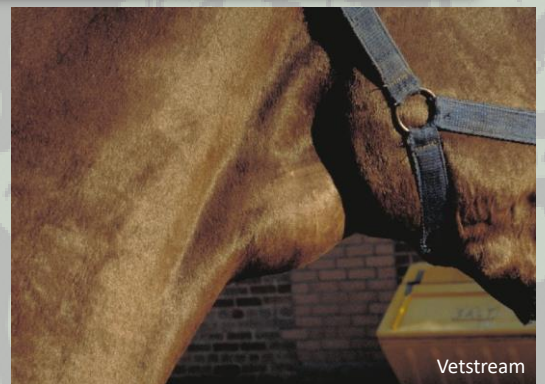


Testing thyroid levels in horses is very complicated! Baseline thyroid levels (T3/T4) can have wide ranges of normal and are affected by variables such as age, diet, exercise, illness, and medication administration.

For example, it is well established that common anti-inflammatories like Bute (Phenylbutazone) can cause falsely low thyroid levels.



“Goiter” is a term for an enlargement of the thyroid gland. It is most commonly seen in foals, or in aged horses. Thyroid swellings in aged horses are most often “thyroid adenomas,” which are benign, non-active tumors that do not affect thyroid hormone levels.



Vetstream