Equine Cortisol Interpretation

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Equine Cortisol Test Interpretation

For critically ill foals suspected of having Relative Adrenal Insufficiency (RAI) a.k.a. Critical Illness Related Corticosteroid Insufficiency (CIRCI):

Baseline Cortisol:

Foal Age	Cortisol value consistent with adrenal insufficiency
<4 hours*	< 13.5 µg/dL
4-12 hours†	<10.2 µg/dL
12 – 24 hours*	< 6.7 µg/dL
24 – 48 hours*	< 4.4 µg/dL
2 – 5 days†	<3.0 µg/dL
5 – 7 days*	< 2.7 µg/dL

* Age ranges for which cortisol levels have been published

† Age ranges for which cortisol levels have been extrapolated – care should be taken with interpreting results for foals within these age ranges.

ACTH Stimulation Test:

Cortisol increase **< 1-2 fold 30 min after 10µg ACTH** – consistent with adrenal insufficiency

Cortisol increase **< 3-4 fold 90-120 min after 100 µg ACTH** – consistent with adrenal insufficiency

Additional Resources:

1. Dembek KA, Hostnik LD, Burns TA, Toribio RE. Endocrine Disorders in Foals. In: Equine Neonatal Medicine. 2024. p. 580–628. https://doi.org/10.1002/9781119617228.ch21
2. Hart KA, Slovis NM, Barton MH. Hypothalamic-pituitary-adrenal axis dysfunction in hospitalized neonatal foals. J Vet Intern Med. 2009 Jul-Aug;23(4):901-12. doi: 10.1111/j.1939-1676.2009.0323.x. Epub 2009 Jun 1. PMID: 19496914.
3. Hart KA, Barton MH. Adrenocortical insufficiency in horses and foals. Vet Clin North Am Equine Pract. 2011 Apr;27(1):19-34. doi: 10.1016/j.cveq.2010.12.005. PMID: 21392651; PMCID: PMC3073730.
4. Wong DM, Vo DT, Alcott CJ, Peterson AD, Sponseller BA, Hsu WH. Baseline plasma cortisol and ACTH concentrations and response to low-dose ACTH stimulation testing in ill foals. J Am Vet Med Assoc. 2009 Jan 1;234(1):126-32. doi: 10.2460/javma.234.1.126. PMID: 19119977.

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