

Laboratory Testing Update

Date: June 1st, 2021

RE: Interpretation of *stimulated* cortisol levels (ACTH STIM – 30 min cortisol/60 min cortisol)

The ACTH stimulation test may be used to help evaluate patients in whom hypoadrenalism is suspected. The test involves a basal blood sample followed by ACTH-stimulated measurements of cortisol at 30 and 60 minutes.

Like all hormone assays, there is variability between assay methods and laboratories. The cortisol test by PLP is performed using the Roche Elecsys Cortisol II assay. Reference values for the test have not been established locally.

Traditionally an absolute cut-off of 500 – 550 nmol/L (18 – 20 µg/dL) for cortisol has been used for the standard high-dose ACTH stimulation test. Previously, the Epic interpretive comment for both the 30 min and 60 min cortisol levels was “Normal peak: > 20 µg/dL.”

However, a lower cut-off has been recommended in at least two publications due to the higher specificity of the Roche immunoassay compared to prior generation assays.

What does this mean?

- Values greater than a minimum of 350 – 374 nmol/L (12.7 – 13.6 µg/dL) **may** indicate an appropriate response to ACTH stimulation.

Citations for the publications may be found below. If you have additional questions, please contact Dr. Jeremy Hart, Medical Director of Clinical Labs, at 859-301-7843.

References

Raverot, V, et al. Establishment of revised cut-offs for adrenal laboratory investigation using the new Roche Diagnostics Elecsys Cortisol II assay. Annales d'Endocrinologie 2016;77(5):620-622.

Kline, GA, et al. Clinical implications for biochemical diagnostic thresholds of adrenal sufficiency using a highly specific cortisol immunoassay. Clin Biochem 2017;50(9):475-480.