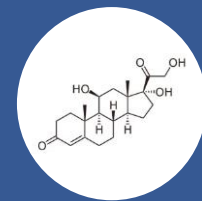


SALIVARY CORTISOL QUICK START GUIDE



BIOLOGICAL CONSIDERATIONS

In response to stress, the hypothalamic pituitary adrenal (HPA) axis releases cortisol, the primary glucocorticoid hormone produced by the HPA system in humans. Cortisol has a wide-ranging impact on regulating metabolic and immune functions for which it has been extensively studied. Cortisol is an important part of the awakening response and mobilizes stored glucose in the liver to the blood stream. Increased cortisol production is associated with Cushing's syndrome and adrenal tumors, while decreased cortisol production is associated with adrenal insufficiency (e.g., Addison's disease) and adrenocorticotrophic hormone (ACTH) deficiency. Measuring nighttime cortisol may be used as a screening tool for Cushing's Disease, and Salimetrics assay kit is 510 FDA cleared for this type of diagnostic use. Dyad cortisol levels are correlated based on shared immediate social context or interactions.

Biological Representation	Systemic
Serum-Saliva Correlation	0.91

SAMPLE TIMING AND DESIGN

Salivary cortisol is often studied in combination with measures of autonomic nervous system activity because the symmetry or asymmetry in the HPA and ANS response to stress is associated with several outcomes of interest to researchers advancing our understanding of biobehavioral health. The diurnal pattern of cortisol has been well characterized, with a peak about 30 minutes after waking, a sharp decrease in concentrations across midday, and a slow decrease later in the day. Under acute stress, cortisol increases about 15-20 minutes after the onset of stressor followed by a return to pre-stressor levels about 30 – 40 minutes post-stress.

FREQUENTLY STUDIED WITH

Alpha Amylase, DHEA, DHEA-S, Melatonin, Uric Acid

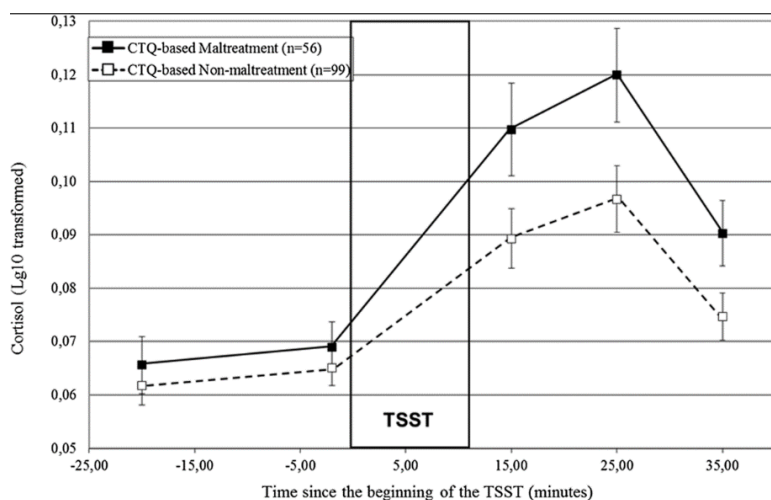
TECHNICAL SUMMARY

Sample Collection Methods & Volumes	
Passive Drool	✓
SalivaBio Swabs	✓
Optimum Collection Volume	75 µL*

*Add 300 µL to the total collection volume for all analytes of interest.

EXAMPLE DATA

This image represents a 5-sample salivary cortisol of a Trier Social Stress Test. Participants were given a mock interview and mental arithmetic to represent a social-evaluative threat. Maltreated participants had a higher cortisol response than non-maltreated participants. Both groups of participants cortisol levels began to decrease 25 minutes after the start of the stressor.



Source: Ouellet-Morin (2018)

KEY RESOURCES

1. Stroud C et al., (2019) Early adversity and internalizing symptoms in adolescence: Mediation by individual differences in latent trait cortisol. *Development and psychopathology* 31 (2): 509-524
2. Granger DA, et al., Focus on methodology: salivary bioscience and research on adolescence: an integrated perspective. *J Adolesc.* 2012 Aug;35(4):1081-95. PMID: 22401843.
3. Doane LD, Chen FR, Sladek MR, Van Lenten SA, Granger DA. Latent trait cortisol (LTC) levels: reliability, validity, and stability. *Psychoneuroendocrinology.* 2015 May;55:21-35. PMID: 25705799
4. Ouellet-Morin, I. et al., (2019). Enduring effect of childhood maltreatment on cortisol and heart rate responses to stress: The moderating role of severity of experiences. *Development and Psychopathology*, 31(2), 497-508.
5. Granger, DA, Taylor, MK. (2020). *Salivary Bioscience: Foundations of Interdisciplinary Saliva Research and Applications*. Springer. <https://springer.com/book/10.1007/978-3-030-35784-9>

