SALIVARY OXYTOCIN QUICK START GUIDE

BIOLOGICAL CONSIDERATIONS

Oxytocin is a neurohypophysial peptide hormone that is primarily synthesized in the hypothalamus and secreted into the bloodstream by the posterior pituitary gland. Oxytocin is regulated through a classic positive feedback mechanism. It has a short response time and has a half-life in the circulation of 3-5 minutes. Oxytocin is measurable in blood products (plasma, serum), urine, breast milk, and saliva in pg/mL quantities. The measurement of oxytocin in saliva and oral fluids by standard immunoassay is controversial – its levels are close (or below) to the lower limit of many immunoassays detection limits, and protocols often require extraction. Oxytocin is associated with social affiliation, pair-bonding (human-human, human-animal), social behavior, reproductive behaviors, and the physiology of the "let down response" that initiates lactation.

Biological Representation	Systemic peripheral circulation
Target Analyte	Peripheral oxytocin in whole saliva
Assay Methodology	Electrochemiluminescence detection, no extraction

SAMPLE TIMING AND DESIGN

Oxytocin levels are responsive to social stimuli. Peak and recovery slopes will depend on the nature, duration, and timing of stimuli. A pilot study is recommended to determine response kinetics and sample collection times. Oxytocin production follows a diurnal rhythm with elevated hormone release during the hours of sleep (Forsling 2007), and therefore sample collection time of day may be less important to procedurally control through experimental design than for other diurnally regulated hormones.

FREQUENTLY STUDIED WITH

Alpha-Amylase, Cortisol, Estradiol, Interleukin-6, OXTR Oxytocin Receptor, Progesterone, Testosterone

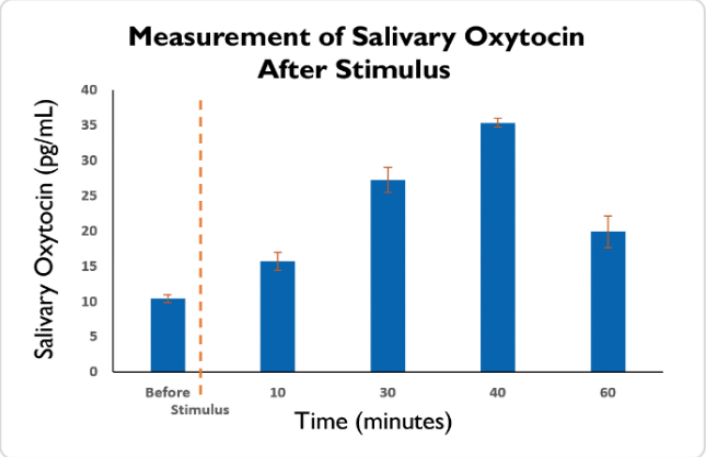
TECHNICAL SUMMARY

Sample Collection Methods & Volumes	
Passive Drool	✓
SalivaBio Swabs	-
Optimum Collection Volume	150 µL*

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

EXAMPLE DATA

Salivary oxytocin levels were measured pre and post stimulus (i.e. known oxytocin inducing stimulation). The oxytocin peak occurred about 30 minutes post -challenge.



Salimetrics Internal Data

KEY RESOURCES

1. 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
2. Feldman, R., et al., (2007). Evidence for a neuroendocrinological foundation of human affiliation: plasma oxytocin levels across pregnancy and the postpartum period predict mother-infant bonding. *Psychological science*, *18*(11), 965–970.
3. Gordon, I., et al., (2011). Oxytocin and social motivation. Developmental cognitive neuroscience, 1(4), 471–493.
4. Vittner, D., et al., (2018). Increase in Oxytocin From Skin-to-Skin Contact Enhances Development of Parent-Infant Relationship. Biological research for nursing, 20(1), 54–62
5. Forsling M. L. (2000). Diurnal rhythms in neurohypophysial function. Experimental physiology, 85 Spec No, 179S–186S.