

# Salivary cortisol levels as a biological marker of stress reaction.

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## Author information

### **Abstract**

#### *AIM:*

To determine the validity and psychobiological significance of salivary cortisol as a biomarker of stress in the experiments.

#### *RESULTS:*

Stress is defined as a state in which homeostasis is jeopardized by the action of various external and internal stressors. The effect of cortisol is made through specific receptors located in the cytoplasm of the target cells. Determining blood cortisol levels, which has been the most widely used method, is characterized by certain shortcomings. The process of taking blood samples from the vein is accompanied by additional stress, which results in falsely positive results. Another flaw is found in the fact that cortisol taken and measured from serum or plasma represents total cortisol, not the free, biologically active one. Cortisol response lags behind ACTH by 5-20 minutes, with peak blood levels achieved in 10-30 min. The transfer of cortisol from blood to saliva takes place rather quickly, within no more than 2-3 min.

#### *CONCLUSION:*

Although, the studies on correlation between saliva cortisol concentrations and free levels of this hormone in blood samples are lacking, salivary cortisol offer a novel approach in research of stress biomarkers with its ease of collection and potentially wide scope for application.