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## BIOMARKERS, CLINICAL RESEARCH & THERAPEUTICS

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### The effect of stimulation of salivation on the secretion of cortisol

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**Statement of the Problem:** Cortisol is generally used as a stress marker. Its assessment is possible in various biological materials including saliva. Many studies use stimulated saliva, however, it is not yet clearly known how stimulation affects the flow of specific markers. The purpose of this study was to assess if stimulation of salivation affects the physiological flow of cortisol during a stressing day compared to control day without stress-strain. The next aim was to show how the normalizing factor affects the outcome of the study.

**Methodology:** Stimulated saliva was taken from 42 healthy children twice a day in the morning at 8:30 and at 11:30 on two separate days a month apart. The first day, children were exposed to the stress situation represented by the scholar testing. The second day was considered a control day to the stress day. Saliva samples were used for assessment of cortisol and total protein concentration.

**Findings:** The highest level of cortisol was observed in saliva taken in the morning of stress day compare to all other collections ( $p < 0.001$ ). There was no difference between morning and afternoon salivary cortisol collected on the control day ( $p = 0.93$ ). The concentration of salivary proteins did not differ between stress and control day ( $p = 0.83$ ). After correction of the results to the protein concentration, no significant differences were observed between morning and afternoon cortisol levels both in the testing ( $p = 0.87$ ) and control days ( $p > 0.99$ ).

**Conclusion & Significance:** Stimulation of salivation led to high interindividual variability in all saliva samples. Based on our results, examination of cortisol diurnal rhythm is not reliable using stimulated saliva. Further studies focusing on the effect of saliva stimulation on specific biomarkers concentrations should be conducted. This study was supported by grant APVV 15-0045 and APVV 15-0085.

#### Biography

Katarína Janšáková has her expertise in molecular biology. Her PhD study was focused on oxidative stress markers in relation to various inflammatory diseases and salivary markers. Currently, she works as a postdoc at the Institute of Physiology, Faculty of Medicine, Comenius University in Slovakia where she participates in many projects with the team of Academic Research Center for Autism. Her primary interest is in salivary research and problems that meet using a saliva in the clinical practice.

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