

### **P33: Physical exercise and its influence in salivary cortisol levels**

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**Introduction:** Cortisol is important for the individual survival since it interferes with several of the body's systems. Only free cortisol fraction can be determined in saliva. Although saliva presents advantages compared to other biological products for the cortisol measurement, it is influenced by several factors - physical and psychological stress.

**Objectives:** we aimed to analyze salivary cortisol values in participants, according to: body mass index (BMI), before and after stress induction by the practice of a standardized exercise (aerobic training protocol in cycle ergometer of the lower limbs).

**Material and Methods:** Saliva samples were collected from 34 participants of both genders, subdivided in two groups, normal and overweight, at two different times (before and after stress induction). Salivary cortisol was determined by salivary cortisol kit (IBL, International GmbH) which is a competitive immunoassay.

The Wilcoxon test was used to compare the concentration of cortisol between the moment before and after stress induction.

**Results and Discussion:** The average concentration of salivary cortisol before and after stress induction was  $1.012 \pm 0.704$  g/dL and  $0.667 \pm 0.545$  g/dL, respectively.

In both moments, participants with overweight showed higher cortisol levels ( $1.194 \pm 0.827$  g/dl and  $0.884 \pm 0.694$  g/dL) than normal weight participants ( $0.840 \pm 0.535$  g/dl and  $0.463 \pm 0.227$  ug/dL).

Cortisol levels decreased significantly after stress induction in normal weight participants ( $p=0.000$ ). Overweight participants showed similar results, yet not statistically significant ( $p=0.082$ ).

**Conclusion:** It was found that in both groups the cortisol average was lower after stress induction, contrary to what is described in literature. There are several variables that can interfere in the determination of cortisol values, e.g., physical activity level, BMI and intensity of physical exercise which could explain our results.

#### **References**

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