

## DAY/NIGHT CORTISOL RHYTHM IN HEALTHY SUBJECTS

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**Introduction:** Biological psychiatric research relies on the determination of biological markers. Cortisol (COR) level is one of peripheral marker frequently used in psychiatric research. COR has a well established circadian pattern of secretion, with levels peaking early in the morning. Studying circadian rhythms in big samples is challenging because of the necessity of sampling blood several times during the day. The aim of this research is to study serum COR levels at three different times of the day.

**Method:** 48 drug-free, healthy subjects participated in the study. None of them had a history of medical, neurological or psychiatric disease. Blood was sampled at 09:00, 12:00 and 00:00 hours. After each extraction, blood samples were centrifuged at 3.000 rpm for 10 minutes, and serum was separated and frozen at  $-30^{\circ}\text{C}$  until assayed for COR. Serum COR was determined by ELISA methods. Data are presented as mean $\pm$ SD in  $\mu\text{g/dl}$ .

**Results:** There were significantly different serum COR levels at the different studied times ( $F: 131.8, p < 0.0001$ ). Serum COR concentrations were significantly higher at 09:00 h than COR levels at 12:00 and 00:0 h (09:00 h:  $11.9 \pm 5.1$ , 12:00:  $8.0 \pm 3.3$ , 00:00:  $3.9 \pm 2.7$ , all comparisons were significant at the level of 0.05).

**Conclusions:** Serum COR levels present clear day/night changes. It is strongly advisable to take into account this variability when researching in this field.