

Summary

Circadian rhythms are important for the adaptation of the organism to the changes of the environment. The internal biological clock (pacemaker) has a rhythm which is slightly longer or shorter than 24 hours. Melatonin is a pineal hormone produced during the dark period. The gastrointestinal tract is the main extrapineal source and the main source of melatonin during the light period. There are missing studies which are focused on the effects of the food on steroid hormones.

Aim: To elucidate the effect of the food on selected hormone levels in two consequent studies of eight healthy nonsmoker premenopausal women in follicular phase of their menstrual cycle.

Results: 1) 16 hours long monitoring: The levels of melatonin decreased significantly two hours after lunch. Cortisol levels were decreasing throughout the whole day and an additional decrease was found two hours after lunch. We were the first to report the significant connections of estradiol and SHBG to food intake.

2) Monitoring after different stimuli: Levels of melatonin increased 40 minutes after the i.v. application of glucose. In oGTT this increase was slower. Cortisol has decreased after the application of glucose, more apparently after its i.v. application. The breakfast led to increase of cortisol levels. OGTT and i.v.GTT caused some kind of plateau of cortisol levels.

Conclusion: Even though, there were mistakes in the profile of the study, we proved the connections between some hormones and food intake.