

# ABSTRACT

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Title of master thesis: The influence of physical activity on body parameters of pregnant and lactating women

The main target of my diploma was to compare body composition parameters of women in pregnancy and in the lactation. Then, after all these findings determine the impact of physical activity to body composition parameters which we measured by bioimpedance analysis. Data about physical activity we obtained by questionnaire from women before every measurement.

Study attended 10 pregnant primiparous women, who have a physiological pregnancy. Study continued in the lactation. Overall we did 8 examinations – 2 examinations in period of gravidity, this were followed by examination on the day of birth, next one on day after birth and last 4 examinations in period of lactation.

Body composition parameters were determined on devices, which work on basis of bioimpedance analysis. This method evaluates body composition via weak electric current, which passes through body during measurement. Different tissues show different resistance toward this weak current. Bioimpedance analysis turned out to be as fast, noninvasive and safe method for rating of body composition also in this specific group of women.

Average increase in the weight during pregnancy was  $11.6 \pm 1.1$  kg. Average weight loss in period of lactation was  $8.9 \pm 3.7$  kg. After 9 months of lactation there was a retention  $2.7 \pm 4.8$  kg of body weight, which follows from previous data. Body weight dropped on the day after birth and continued in decreasing also in the next periods of lactation. During

lactation we observed decrease in total body water and body fat compared to pregnancy values. As consequences of decrease in total body water among breastfeeding women we registered increasing resistance characteristics.

We also monitored statistically significant negative correlation between total energy expenditure and water content in body on first and second period of gravidity. In the 3. and 9. month after birth we found positive correlation between energy expenditure for sleep and body surface area.

**Key words:** pregnancy, lactation, physical activity, bioimpedance analysis