

## **Abstract**

**Aim:** In the past, in Czech Republic, Resting Energy Expenditure (REE) was not known in pregnant or lactating women. The results obtained from our study are intended for clinical use since up until now Resting Energy Expenditure was obtained from internationally published results, and were not a direct measure for Czech women due to differences in terms of nutrition and calories.

**Objective:** The measurements of Resting Energy Expenditure were conducted in 5 different time periods via indirect calorimetry to determine correlations between Resting Energy Expenditure and measured anthropometrical values.

**Design:** There were a total of 24 subjects in the study examined in 5 different time periods. The P0 being at the end of pregnancy, the L1 from birth up to 7 weeks post partum, L2 from the 10<sup>th</sup> to the 16<sup>th</sup> week post partum, L3 from the 20<sup>th</sup> to the 26<sup>th</sup> week post partum, and L4 from the 34<sup>th</sup> to the 47<sup>th</sup> week post partum. The pregnant subjects P0 were used as the comparison with L1 to L4 lactation subjects to observe changes in REE and other anthropometrical measures. The measurement of Resting Energy Expenditure was carried out via indirect calorimetry. The women arrived from their homes after 12 hours of fasting and were at rest 30 minutes before assessment.

**Results:** In our study resting energy expenditure was measured via indirect calorimetry. The results were P0  $1543 \pm 97.1$  kcal/day, L1  $1449 \pm 88.6$  kcal/day, L2  $1428 \pm 94.5$  kcal/day, L3  $1429 \pm 95.2$  kcal/day, L4  $1415 \pm 99.8$  kcal/day, the REE in the end of pregnancy was 6.48 to 9.05% higher than in the lactation periods, during the lactation periods REE remained in a similar high range.

**Conclusion:** From our study we found that we are in accordance with the international studies in terms of predicting a higher REE in pregnant women. Maximum REE in pregnancy, lower and balanced was determined. As for lactating women, it is difficult to compare and find a difference in REE between lactating women and pregnant women as most studies compare either non pregnant non lactating women REE to pregnant women REE, or non pregnant women REE to lactating women REE.