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## Improving Health of the Next Generation: Dietary Intake and Physical Activity during Pregnancy in an Austrian Cohort

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### Abstract

There is sufficient evidence that the periconceptional period is a key window during which poor maternal nutrition can adversely influence long-term health and disease risk into adulthood. The higher rate of obesity in women of childbearing age and bad quality of mother's diet may result in higher incidence of hyperglycemia or hyperlipidemia, associated with an impaired metabolism in the offspring.

This cross-sectional study analysed dietary habits and physical activity of 190 pregnant women aged  $31 \pm 6$  years in the second and third trimester of their pregnancy in Austria. Dietary intake data were collected by two non-consecutive 24-h-recalls using GloboDiet software, physical activity was examined with the Pregnancy Physical Activity Questionnaire. 31.6 % of investigated women were overweight or obese; a moderate higher prevalence compared to non-pregnant women (21.9–27.8 %). Mean gestational weight gain (GWG) was  $3.9 (\pm 4.8)$  kg in the second and  $9.6 (\pm 5.1)$  kg in the third trimester. More than half of the pregnant women exceed the GWG recommendations of the Institute of Medicine (2009). In contrary, average energy consumption was 1765 kcal/d, which is below the DACH (German, Austrian and Swiss Society for Nutrition) reference value assuming a Physical Activity Level of 1,4. However, one quarter of participants exceeded reference value of energy intake. Ratio of energy supply by macronutrient intake was 36.2 E% fat: 48.5 E% carbohydrates: 15.3 E% protein. Mean intakes of linoleic acid and alpha-linoleic acid were within the DACH reference values, but DHA intake (125 mg/d) did not reach the recommendation of 200 mg/d. In addition, average intake of dietary fibre (19.8 g/d) was too low. Intakes of vitamins A, E, B1, B6, and folate as well as potassium, calcium, magnesium, iron, zinc, and iodine were unsatisfying. These results are in accordance with an inadequate supply with fruits, vegetables, cereals, and milk products, at the same time exceeding intake of meat(products) and sweets. Only half of the examined pregnant women have reached the recommendation of 120 minutes of physical activity of moderate to vigorous intensity per week.

This study demonstrates that dietary behaviour and physical activity during pregnancy need to be improved. Adequate energy and nutrient intake is essential before conception, as well as throughout pregnancy to support maternal needs, and to fill up stores required for foetal development. Health strategies supporting women in childbearing age in adopting a healthy lifestyle are important for the health of the next generation.

### Conflict of Interest

There is no conflict of interest