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Abstract

The role of the lifestyle and exposure to prenatal sex hormone in body composition shaping and fatty tissue distribution in young women

The subject area of human biological development is involvedly related to genetic and environmental factors. It is a process of transitions that are not only genetically determined but result from the interaction of the genotype and environmental factors. The wide spectrum of factors is a reason behind interindividual variation.

At the end of the last century, the scientific literature has shown that the ratio between the 2nd and 4th digits (digit ratio or 2D:4D) is sexually dimorphic. It has been demonstrated that the differentiation of the digits is under the control of Hox genes, hence the index is formed in early fetal stages. The value of the digit ratio is related to the distribution of adipose tissue, the WHR, physical performance, muscle strength, as well as fertility, and autism. The digit ratio reflects the balance of prenatal sex hormones, therefore can be widely used in developmental biology and medicine. The latest research shows a significant increase in the percentage of overweight and obese people, but also those who are underweight and with eating disorders. This issue is the research subject and concerns related to reduced physical activity. Reduced physical activity may lead to health consequences, affecting further functioning. Adolescents and young adults are struggling with the problem of overweight, and obesity, and researchers have been alarmed that more and more young people lead a sedentary lifestyle.

The main objective of the study was to determine the role of lifestyle, including sedentary lifestyle and physical activity, as well as prenatal sex hormone exposure in body composition and fat distribution in young women.

The research group of 408 students of the Adam Mickiewicz University in Poznań was at the doorstep of adulthood, aged from 18 to 22 years. This period is characterized by numerous changes, which often take on a violent character. The study period is an extremely important moment in the life of young women. They often stare down the barrel of a multitude of new situations and responsibilities. This is the moment when students start living independently, they have to decide on their diet or lifestyle.

The innovative nature of the research results from taking into account the influence of many factors, which gives a broad, holistic view, and what's more the possibility of an appropriate selection of physical activities and the use of specialized preventive programs to raise awareness of the importance of healthy lifestyle among young people.

The results of the research showed that lifestyle and exposure to prenatal sex hormones significantly influenced body composition and the distribution of adipose tissue in young women. Moreover, studies have shown that the role of lifestyle in the context of health and disease prevention deserves special attention, while exposure to prenatal sex hormones shows the direction of the predisposition to physical activity. The growing percentage of young women who are overweight and obese, and the restrictions introduced by the COVID-19 pandemic, which in many cases have resulted in physical activity reduction, seems to be a disturbing forecast for the future, which is why it is so important to expand research on this subject.