

## Summary

**Title:** Body posture in people with mild and moderate intellectual development disorders living in the Podkarpackie voivodeship

**Introduction:** Individuals with intellectual and developmental disabilities (IDD) are characterized by comorbidity. The more severe the disability, the more coexisting conditions present, such as epilepsy, circulatory system problems, digestive system issues, or hormonal imbalances. Individuals with complex IDD, where at least one additional disability coexists with IDD, form a particular group. Additional disabilities can significantly limit mobility and body stability, thus impacting posture. It is suggested that the majority of individuals with IDD experience mobility limitations and lead sedentary lifestyles. This may contribute to a higher prevalence of abnormal body posture. A thorough analysis of scientific research has revealed that researchers have focused on postural stability and locomotion rather than the impact of IDD on body posture.

**Aim:** The objective of this study is to assess body posture in individuals with mild and moderate intellectual and developmental disabilities compared to individuals with typical intellectual functioning.

**Material and method:** The study was conducted at the UNICEF Special School in Rzeszów. A total of 318 individuals were included in the study. 159 of those individuals had IDD and 159 comprised the control group. Inclusion criteria for the study group included the consent of the caregiver and the participant, a diagnosis of mild to moderate intellectual and developmental disability, the absence of significant neurological or orthopaedic deviations that would impede the assessment of body posture, and an age between 10 and 23. Body height measurements were taken with the mobile stadiometer Seca 213, while body weight was measured using the electronic scale OMRON BF 500. Assessment of body posture was conducted using the photogrammetric technique using the Mora 4G CQ Elektronik System. Mann-Whitney U test, t-test, Spearman's rank correlation coefficient, and Pearson's linear correlation were utilized as statistical analysis tools.

**Results:** A greater inclination of the upper thoracic spine was observed in both women and men with IDD ( $p=0.000$ ,  $p=0.000$ ), as well as a higher thoracic kyphosis ( $p=0.019$ ,  $p=0.001$ ), greater values of the posterior trunk asymmetry coefficient ( $p=0.000$ ,  $p=0.000$ ), and a higher sum of absolute values of the Th1-L5 vertebral rotations ( $p=0.000$ ,  $p=0.000$ ) compared to women and men with typical intellectual functioning. No other significant differences in body posture were observed between women with mild and moderate IDD. However, a greater lower thoracic kyphosis was observed in men with mild IDD compared to those with moderate IDD ( $p=0.023$ ). Women with complex IDD exhibited a greater inclination of the upper thoracic spine ( $p=0.013$ ) and a higher thoracic kyphosis ( $p=0.021$ ) compared to women with IDD without complex conditions. Men with complex IDD had a greater inclination of the lumbosacral spine ( $p=0.02$ ) compared to men with IDD without complex conditions. With increasing age, greater left-sided trunk rotation was observed in women and men with IDD, in those with mild IDD, and in those with IDD without complex conditions. Among women in the study group and women with IDD without complex conditions, an increase in body weight was associated with right-sided deviation of spinous processes and right-sided pelvic rotation, while an increase in BMI was associated with increased inclination of the lumbosacral spine. In men with complex IDD, an increase in BMI was associated with a decrease in thoracic kyphosis. With increasing body height, the angle of inclination of the upper thoracic spine decreased in women with IDD, while men with IDD exhibited posterior deviation of the lower scapular angle on the right side and elevation of the iliac crest on the left side.

**Conclusion:** Body posture significantly differs between individuals with IDD and those with typical intellectual functioning. There were no significant differences observed between women and men with mild and moderate IDD, as well as between individuals with complex and non-complex IDD. Body posture is significantly influenced by age and anthropometric parameters, such as BMI and body weight.

**Keywords:** intellectual disability, kyphotic posture, lordotic posture, scoliosis, body posture asymmetry