

Is there a relationship between the level of physical activity and walking ability in children and adolescents with cerebral palsy?

childhood
disability
LINK



Summary

The main aim of these studies was to determine if the level of physical activity is related to walking ability in individuals with mild cerebral palsy (who are able to walk without support). First, the general level of physical activity of a group of children with cerebral palsy was measured using a heart rate test that was then converted to how much oxygen was used. Then, during a clinic visit, the group's walking ability was evaluated. This was accomplished by measuring how much oxygen was used while the person walked on a treadmill at various speeds. In general, children with cerebral palsy who have more difficulty walking independently use more oxygen during walking than those with better walking skills. The authors' results revealed a strong relationship between the level of physical activity and the oxygen used during walking at all but the fastest walking speeds. For children and adolescents with cerebral palsy who are able to walk without support, it appears that those with the lower levels of physical activity, as measured by how much oxygen is used, may also be the ones who have the lower levels of walking ability.

Another way the authors measured level of physical activity was by collecting and recording the acceleration (movement) of the body over a period of time. Walking ability was assessed at the research laboratory visit made shortly before or after the physical activity assessments. Walking skill was determined by measuring how much the center of the body moved up and down during walking at various speeds. It has been shown that, in general, the amount that the body moves up and down during walking is related to walking skill. The less the movement, up to a point, the better the walking ability. The results revealed a strong correlation between the level of physical activity (acceleration) and the extent to which the body moved up and down during walking, at all walking speeds. For children and adolescents with cerebral palsy who are able to walk without support, it appears that those with the lower levels of physical activity may also be the ones who have the lower levels of walking ability.

Implications for families and practitioners

It has been previously shown that the level of physical activity in children with cerebral palsy is lower than that of their typically developing peers. Moreover, for both children and adults, physical activity is considered to be beneficial to health. The results of this study suggest that to improve the level of physical activity of a child with CP, it might be beneficial to consider a program that improves their walking skills and general fitness.

Reference

Maltais, D. B., Pierrynowski, M. R., Galea, V. & Bar-Or, O. (2005). Physical activity level is associated with the O₂ cost of walking in cerebral palsy. *Medicine & Science in Sports & Exercise*, 37, 347-353.

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