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Does overweight affect the footprint and balance of school-aged children?

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KEYWORDS

Body mass index;
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Abstract

Purposes: This study aimed to analyze the differences in the footprint and balance performance in school-aged children, with and without overweight.

Material and methods: Twenty six school aged children (age = 11.6 ± 0.5 years), 15 girls and 11 boys participated in the study. Their footprints, average plantar pressures and their balance performance were analyzed with photograph developer, fixer, photo paper and a force platform.

Results: The girls with overweight showed greater Arch Index ($p = 0.06$, effect size (ES) = 1) and footprint areas than their normal weight counterparts. The area covered by the center of pressure during the single-leg balance test was greater in the overweight groups (overweight boys = 225.71 mm^2 ; normal weight boys = 163.77 mm^2 ; overweight girls = 157.74 mm^2 ; normal weight girls = 83.52 mm^2 ; ES = 0.86 and 0.74, respectively). There were no differences between overweight and normalweight subjects in the postural sway test.

Conclusions: Overweight girls showed flatter feet than the normal weight ones. In the balance tests, only appeared statistically significant differences between boys and girls, although the practical significance of the differences between overweight and normal weight groups point to a lower balance performance in overweight children.

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