

EVALUATION INDEX FOR EXPANSION PATTERN OF CENTER OF PRESSURE USING CENTER OF PRESSURE DIAGRAM IN JAPANESE CHILDREN

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Background: Our previous research showed that standing postural stability develops until age 8 in Japanese girls and age 9 in Japanese boys. We have drawn up the assessment method for the standing posture of Japanese children (4 to 11 years old). However, we have not discussed how it can be clearly that parents and teachers can understand their assessment of COP in school settings.

Objective: This study examined whether the expansion patterns of centre of pressure (COP) using COP diagrams can be used as a simple evaluation index for static balance in the subjects.

Subjects and methods: The subjects were 178 (86 boys and 92 girls) students aged 5 to 11. The data collection instrument was the Gravicorder GS-7 (ANIMA corporation, Tokyo, Japan). The subjects instructed to stand upright with the centre of the sole of their foot aligned with the reference point on the examination table, whilst fixing their gaze on a fixed point two metres ahead at eye level during measurement. When subjects posture had stabilized, the subjects measured to take thirty seconds for each condition (eyes open and eyes closed). The expansion patterns of the COP classified into four types: 1) centre, 2) front and rear, 3) right and left and 4) random.

Results and conclusions: The average measurement values of LNG per Env. Area under both conditions for boys and girls in the centre type were higher than other types. This indicated the expansion patterns of the COP could evaluate the measurement values of COP in the same way as previous research. The evaluation of the COP patterns reflected the measurement values of LNG per Env. Area. Limitations exist with the reliability of the relationship between the expansion patterns of COP and the measurement values of COP.

Keywords: Centre of pressure; Expansion patterns of COP; COP diagrams; Japanese Children.