

原著論文

重心動揺図を用いた重心動揺パターンの評価について
—小学生の重心動揺パターンと重心動揺値および体力テストの関係から—
Assessment of center of pressure pattern using center of pressure diagram
— Relationship between center of pressure and measurement values of center
of pressure, fitness tests in primary school children —

溝畑潤^{1,2)} 田路秀樹¹⁾
Jun Mizobata^{1,2)} Hideki Toji¹⁾

Abstract

The purpose of this study was to assess the four types of expansion pattern of center of pressure using center of pressure diagrams focusing on Japanese primary school children. The subjects were 178 (86 boys and 92 girls) students who were enrolled from first to six grades from primary school in Hyogo prefecture. The measurement values of center of pressure which calculated total locus length (LNG) and environment area (Env. Area) using Gravicorder (GS-7, ANIMA corporation). The expansion pattern of the center of pressure was classified into four types: 1) center type; 2) front and rear type; 3) right and left type; and 4) random type. The results indicated the ratio of center type was especially high in the upper grades showing a significant difference for boys and girls both under open-eye and close eye conditions. The average measurement values of total locus length per environment area (LNG/Env.area) under both conditions for boys and girls in the center type were higher than another types. There were no significant differences relationship between the expansion pattern of the center of pressure and fitness tests other than side step.

キーワード：重心動揺図，重心動揺パターン，小学生

center of pressure diagram, the expansion pattern of center of pressure,
primary school children

1. 緒言

直立姿勢における姿勢制御（以下直立能力と略す）を足圧中心動揺（Center of Pressure：以下COPと略す）から客観的に評価する方法に重心動揺がある（時田，2008，pp.1-12）。重心動揺は重心点の総移動距離（総軌跡長）、軌跡の最外郭の面積（外周面積）、実効値を半径と

した円の面積（実効値面積）、各軸の最大幅における長方形の面積（矩形面積）、開閉眼比（ロンベルグ率）、周波数（パワースペクトル）などの重心動揺値により評価している。平沢・青木（1979）は、直立能力の経年変化について6歳から20歳までを発達期、20歳から50歳までを充実期、50歳以降を衰退期の三期に分類し、

1) 兵庫県立大学大学院環境人間学研究科
2) 関西学院大学人間福祉学部

Graduate course of Human Science and Environment, University of Hyogo
School of Human Welfare Studies, Kwansai Gakuin University