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[\[PDF \(243K\)\]](#) [\[References\]](#)**Dynamic movement of center of gravity with hand grip**Hideki MOMIYAMA¹⁾²⁾, Masahito KAWATANI¹⁾, Katsuaki YOSHIZAKI³⁾ and Hiroko ISHIHAMA¹⁾

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ABSTRACT

We studied the movement of center of gravity (CG) in young and aged subjects during maximum grip of right or left hand. Body-sway was recorded with stabilometry in rest-stand position and in maximum grip. The data from right- or left-handed young subjects were analyzed. Maximum grip power was not different between dominant hand and un-dominant hands. Total length (LNG) and total movement area of CG (REC AREA) during the measurements were significantly larger in maximum grip than in rest-stand. In right-handed subjects, LNG increased to 245% and 250% of rest-stand value, and REC AREA increased to 589% and 633% in right and left hand grip, respectively. In left-handed subjects, LNG increased to 186% and 188% of rest-stand value, and REC AREA increased to 400% and 533% in right and left hand grip, respectively. No significant difference of LNG and REC AREA was observed between right and left hand grip in either hand dominant subject. Maximum grip did not affect CG in rest-stand. In aged subjects, maximum grip power was significantly less than in young subjects (48%). LNG and REC AREA in rest-stand were significantly larger in aged subjects than in young subjects (220% and 400%, respectively). They were not different during maximum grip with either hand. While aged subjects have difficulty of controlling CG in rest-stand, they have less problems to stabilize CG during maximum grip. These data indicated that dynamic movement of CG might be important to understand person's activity of daily living.



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