研究業績　英文表記

和文	
表題	足関節の柔軟性は水中でのキック効率と三次元的な動作に影響を与えるか？
著者名	下門洋文 1)、奈良梨央 1)、馬場康博 1)、市川浩 1)、池田祐介 1)、下山好充 1)
所属	1)新潟医療福祉大学
英文	
Title	Does ankle joint flexibility affect underwater kicking efficiency and three-dimensional kinematics?
Author	Shimojo H[1)], Nara R[1)], Baba Y[1)], Ichikawa H[1)], Ikeda Y[1)], Shimoyama Y[1)].
Affiliation	1) Niigata University of Health and Welfare
Abstract	Ankle flexibility is critical to obtain a high swimming velocity in undulatory underwater swimming (UUS). The present study investigated the Froude (propelling) efficiency and three-dimensional (3D) kinematics of human UUS following the extrinsic restriction of the ankle by tape application. In Experiment 1, swimmers (9 male and 8 female college swimmers) performed UUS trials involving normal swimming (Normal) and swimming with tape application at the ankle (Tape). Kicking frequency was controlled in both settings. UUS kinematics were obtained with a two-dimensional motion analysis. Swimming velocity significantly decreased during swimming with tape application compared with that during normal swimming (Normal, 1.33 m・s-1; Tape, 1.26 m・s-1, $p < 0.05$). The Froude efficiency was not affected (Normal, 0.77; Tape, 0.76), and ankle plantar angle did not decrease during swimming (Normal, 159.02°; Tape, 160.38°). In Experiment 2, lower limb rotations of a male swimmer were analysed using 3D motion analysis under the same conditions as Experiment 1. An insufficient forefoot rotation was observed during downstroke kicks (the phase of the highest acceleration to forward direction). These findings suggest that UUS velocity is affected by the mobility of end effector.
keyword	Motion capture; foot; kick frequency; lower limb; taping.

※本データの英文表記は実際の論文上の表記とは異なります。