

## 研究業績 英文表記

和文	
表題	ヒトのドルフィンキック動作と泳速度の関係
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英文	
Title	Relationship between dolphin kick movement in humans and velocity during undulatory underwater swimming.
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Abstract	<p>The present study was conducted to identify the kinematic variables associated with dolphin kick performance during the acceleration and deceleration phases. Nine male competitive swimmers performed 3–5 × 15-m dolphin kick swimming trials with maximum effort. The underwater motion of the dolphin kick was recorded using a digital video camera for a two-dimensional motion analysis. Upper-lower trunk and leg angles in addition to shoulder, hip, and knee joint angles were calculated as kinematic variables. The average horizontal velocity of the greater trochanter during two cycles of the dolphin kick correlated with the angular displacement of the lower trunk in the acceleration (<math>r = -0.715</math>, <math>p &lt; 0.05</math>) and deceleration phases (<math>r = 0.682</math>, <math>p &lt; 0.05</math>). Furthermore, greater angular displacement of the lower trunk was associated with smaller angular displacement of the upper leg and greater angular displacement of the hip, knee, and lower leg in both phases. These results suggest that the movement of the lower trunk is a key kinematic variable for dolphin kick performance, and also that swimming coaches and swimmers need to focus on the movement of the lower trunk as well as upper-lower legs in order to improve dolphin kick motion.</p>
keyword	Swimming performance; kinematics; phase; undulatory swimming.

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