

## 研究業績 英文表記

和文	
表題	大学生と中高生競泳選手間のフラッターキック動作の比較.
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英文	
Title	Comparison of flutter kick movement between college and junior high/high school swimmers.
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Abstract	<p>The purpose of this study was to compare the flutter kick movements of college students and junior high/high school swimmers. The twelve college students and twenty junior high/high school students were participated in this experiment. The trials of the flutter kicking were performed, and the motion was analyzed to obtain hip and knee joint angles. The measured joint angles were approximated by a sinusoidal function with four variable parameters: angle amplitude, period, initial phase, and average angle. And each parameter was compared between the groups. The mean hip joint angle, knee joint angle amplitude, and hip-knee joint angle phase difference were significantly larger in the college student group than the junior high/high school group (<math>p&lt;0.05</math>), and the period was significantly shorter in the college student group than the other group (<math>p&lt;0.05</math>). College students had their hip joints in a more flexed position during the entire kicking motion than junior high/high school students. In addition, college students had a deeper maximum knee joint flexion angle than junior high/high school students, indicating that the knee joint operated with more delay relative to the hip joint.</p>
keyword	Flutter kicking, hip angle, knee angle, kinematical simulation.

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