## 研究業績 英文表記

和文	
表題	ストリームライン姿勢での脊柱アライメントが前方牽引による受動抵抗に与える影響.
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英文	
Title	The effect of spinal alignment in streamlined position on passive drag generated by towing.
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Abstract	For competitive swimmers, the streamlined position is the most important position for reducing water resistance. Therefore, this study investigated the effect of spinal alignment during the streamlined position on passive drag generated by towing. Twenty-three male collegiate swimmers underwent a spinal alignment test and a passive drag test. The spinal alignment test measured the angles of thoracic kyphosis and lumbar lordosis when the participants took the prone streamlined position on land. The spinal alignment data were collected using a Spinal Mouse to record the sagittal outline of the back. The passive drag test at streamlined position was measured by the passive towing method using a towing series comprising four 20-m towing trials at towing speeds of 0.7 m/s, 1.2 m/s, 1.7 m/s, and 2.2 m/s. Significant correlations were found between the angle of thoracic kyphosis and the coefficients of drag at 1.2 m/s, 1.7 m/s, and 2.2 m/s. No significant correlations were found between the angle of lumbar lordosis and coefficient of drag at any towing speed. These results suggest that the angle of thoracic kyphosis during the streamlined position would have a significantly effect on passive drag generated by towing.
keyword	swimming, thoracic kyphosis angle, lumbar lordosis angle, passive drag

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