

## **Changes of Lower Limb Kinematics during 2000m Ergometer Rowing among Male Junior National Rowers**

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### **ABSTRACT**

Rowing involves cyclic motions that have a number of similar repetitions of joint excursion. Similar movement patterns, physiological, muscular activity and biomechanical aspects were observed while rowing on dynamic ergometer and on water. The purpose of our study is to evaluate the changes of lower limb kinematics during 2000m rowing on dynamic ergometer among male junior national rowers. Ten male junior national-level rowers participated in the study. 24 passive reflective markers were attached on their lower extremity and their rowing motions were captured. Each phases of rowing

cycle was interpolated to 100 time points separately. The lower limb joint kinematics were compared across every 500m sections to evaluate its changes during 2000m rowing trial. There was a statistically significant difference between stroke rates for every 500m of 2000m rowing trial as determined by one-way ANOVA ( $F(3,36) = 4.880, p = 0.006$ ). Kinematical variabilities were observed across splits particularly in frontal and transverse planes of lower limb joints.

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