

## 研究業績 英文表記

和文	
表題	5分間のスタティックストレッチングが他動的性質に及ぼす経時的変化の検討
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英文	
Title	Time course of changes in passive properties of the gastrocnemius muscle-tendon unit during 5 min of static stretching
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Abstract	<p>The minimum time required for Static stretching (SS) to change the passive properties of the muscle-tendon unit (MTU), as well as the association between these passive properties, remains unclear. This study investigated the time course of changes in the passive properties of gastrocnemius MTU during 5 min of SS. The subjects comprised 20 healthy males (<math>22.0 \pm 1.8</math> years). Passive torque as an index of MTU resistance and myotendinous junction (MTJ) displacement as an index of muscle extensibility were assessed using ultrasonography and dynamometer during 5 min of SS. Significant differences before and every 1 min during SS were determined using Scheffé's post hoc test. Relationships between passive torque and MTJ displacement for each subject were determined using Pearson's product-moment correlation coefficient. Although gradual changes in both passive torque and MTJ displacement were demonstrated over every minute, these changes became statistically significant after 2, 3, 4, and 5 min of SS compared with the values before SS. In addition, passive torque after 5 min SS was significantly lower than that after 2 min SS. Similarly, MTJ displacement after 5 min SS was significantly higher than that after 2 min SS. A strong correlation was observed between passive torque and MTJ displacement for each subject (<math>r = -0.886</math> to <math>-0.991</math>). These results suggest that SS for more than 2 min effectively increases muscle extensibility, which in turn decreases MTU resistance.</p>
keyword	Ultrasonography, passive torque, static stretching, Muscle-tendon unit

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