# 研究業績　英文表記

| 和文 | |
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| 表題 | フライホイールを用いたトレーニングセット間ストレッチングが筋力・筋量, 関節可動域に及ぼす影響の検討 |
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| **英文** | |
| Title | Effects of Adding Inter-Set Static Stretching to Flywheel Resistance Training on Flexibility, Muscular Strength, and Regional Hypertrophy in Young Men. |
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| Abstract | Performing static stretching (SS) during resistance training (RT) rest periods is posited to potentiate muscular adaptations, but the literature is scarce on the topic. Thus, the purpose of this study was to investigate the effects of adding inter-set SS to a lower-limb flywheel RT program on joint flexibility, muscular strength, and regional hypertrophy. Sixteen untrained male adults (21 ± 1 y) completed the study, where they performed progressive flywheel bilateral squatting twice a week for 5 weeks. One leg of each participant was randomly allocated to perform SS during the inter-set rest period (RT+SS), while the other leg served as control (RT only). Before and after the intervention, knee flexion range of motion; knee extension isometric, concentric, and eccentric peak torque; 1-repetition maximum; and muscle thickness of the lower-limb muscles were assessed. Following the training period, additional effects were observed for the inter-set SS side on increasing joint flexibility ($p < 0.05$), whereas the average increase in strength measures was 5.3% for the control side, and 10.1% for the inter-set SS side, however, SS intervention induced significantly greater gains only for knee extension isometric strength, but not for dynamic 1-RM, concentric, and eccentric tests. Hamstrings and gluteus maximus did not hypertrophy with training; increases quadriceps muscle thickness depended on the site/portion analyzed, but no significant difference was observed between legs (average: RT = 7.3%, RT+SS = 8.0%). The results indicate that adding inter-set SS to RT may provide large gains in flexibility, slightly benefits for muscular strength (especially for isometric action), but do not impact muscle hypertrophy in untrained young men. |
| keyword | advanced techniques; concentric strength; eccentric strength; maximal voluntary isometric contraction; muscle thickness; ultrasound. |

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