

SAFETY ASSESSMENT OF LOW-INTENSITY RESISTANCE EXERCISE WITH SLOW MOVEMENT AND TONIC FORCE GENERATION FOR OLD WOMEN

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Introduction: The low-intensity resistance training with slow movement and tonic force generation (LST) has been proven to be an effective means of realizing both muscle hypertrophy and maximal strength development in young men. To evaluate the safety of LST, we compared acute responses to three different protocols in older women. Methods: Twelve healthy women (68 ± 2 yrs) performed knee extension machine exercise according to three regimens: low-intensity (50%1RM) resistance exercise with slow movement and tonic force generation (3 seconds (s) for eccentric and concentric actions with no relaxing phase: LST); normal speed strategy (1 s for concentric and eccentric actions, 1 s for relaxing) at a high-intensity (80% 1RM: HN); and normal speed strategy at a low-intensity (50% 1RM: LN). Results: Protocol compliance was perfect without causing any adverse events during all testing sessions. The withdrawing number was 0. The delayed onset muscle soreness was assessed by using the visual analog scale. At any time points, no significant difference was seen between exercise regimens. The peak systolic blood pressure during HN was not significantly but higher than that during LST and significantly higher than that during LN, and no significant difference was seen between those during LST and LN. The increase of heart rate was significantly larger in HN than in both LST and in LN, and no significant difference was seen between those in LST and in LN. Conclusion: This pilot study indicated that LST is a safe, feasible, and promising intervention for healthy older women.