The Effects of Warm-Up Duration on 1-Repetition Maximum Leg Press/Bench Press and Push-Ups to Exhaustion

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Introduction: Warming up as recommended by fitness experts is thought to reduce the risk for injuries, but little is known about how warming up prior to exercise influences strength development over a six-week period. PURPOSE: The purpose of this study was to investigate the influence of warming up on strength training as measured by a 1-repetition maximum (1-RM) bench press/leg press, and push-ups performed to exhaustion. METHODS: Eighteen undergraduate students enrolled in a machine weight training class were assigned to one of three groups prior to training: no warm-up (G0), five-minute warm-up on an elliptical machine (G5), and ten-minute warm-up on an elliptical machine (G10). All groups performed the same resistance training as prescribed by their instructor, originally designed for a 14-week semester. Pre- and post-training tests were conducted for 1-RM of bench/leg press and pushups to exhaustion. Analysis of Variance (ANOVA) was calculated for all dependent variables and significance levels for all were set at p<.05. RESULTS: No significant difference was found between groups in bench press and push-up tests. However, leg press approached the significance level, measuring at p = .058. Leg press mean change measured as follows: G0 = 19 ± 7 kg, G5 = 13 ± 12 kg, and G10 = 31 ± 12 kg. CONCLUSIONS: These results indicate that engaging in a warm-up prior to resistance training does not enhance strength development over a six-week time period.