Effects of Short-Term Ashwagandha Supplementation on Recovery Following Intense Exercise

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Introduction

Ashwagandha, an herbal supplement commonly used for stress reduction and general well-being, has gained attention in sports science for its potential role in muscle recovery. This study examined the short-term effects of ashwagandha supplementation on muscle recovery by assessing muscle strength, soreness, and swelling over a 72-hour period following resistance exercise. Ten healthy adults (ages 18–35 years) participated in a randomized, double-blind, placebo-controlled study. Participants were assigned to either a 600 mg/day ashwagandha supplementation group or a placebo group, receiving a vitamin B pill, for seven days before completing an acute resistance exercise protocol targeting the biceps. Muscle recovery was assessed using ultrasound (muscle thickness), a Biodex machine (torque), and subjective soreness ratings (Visual Analog Scale). Follow-up assessments occurred at 24-, 48-, and 72-hours post-exercise. Results of a 2 (group) × 5 (time) repeated-measures ANOVA revealed a significant group × time interaction for muscle thickness ($p = 0.013$). Post-hoc analysis indicated that muscle thickness in the ashwagandha group returned to baseline within 24 hours, whereas the placebo group exhibited persistent swelling at 24-, 48-, and 72-hours post-exercise ($p < 0.05$). No significant interaction was found for torque recovery, though a time main effect ($p < 0.01$) indicated that strength declined post-exercise and recovered by 48 hours in both groups. Similarly, muscle soreness followed a typical time-dependent recovery pattern, peaking at 24 hours and declining at 48 and 72 hours ($p < 0.05$), with no significant difference between groups. These findings suggest that short-term ashwagandha supplementation may accelerate muscle swelling reduction but does not significantly impact strength recovery or muscle soreness compared to placebo. Due to the small sample size, further research is necessary to confirm these results and establish a definitive relationship between ashwagandha and muscle recovery.

Keywords: Ashwagandha; Withania somnifera; Muscle recovery; Resistance exercise; Muscle swelling; Muscle thickness; Muscle strength; Adaptogens; Recovery kinetics; Young adults; Sports nutrition; Herbal supplements; Inflammation reduction, Kinesiology.

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