EXAMINING TESTOSTERONE AND STRENGTH TRAINING IN OLDER ADULT MALES: A SYSTEMATIC REVIEW

ABSTRACT

Introduction: Aging has been associated with decreases in lean muscle, functionality, and strength. These changes represent potential risk factors for adverse events in males aged 60 or older. A potential reason for the loss of muscle mass and strength is decreased testosterone production. While strength training in this population has been shown to increase strength and functionality, there is little impact on lean muscle gains.

Purpose: The purpose of this study was to evaluate if testosterone therapy combined with strength training would lead to gains in lean muscle mass and functional strength compared to strength training alone.

Methods: A systematic review of randomized control trials (RCT) published between January 2013 and October 2023 was conducted. Keywords were employed to identify RCTs involving older adult males aged 60 years or older who received exogenous testosterone as a sole intervention, strength training as a sole intervention, or a combination of exogenous testosterone and strength training. A predetermined set of inclusion and exclusion criteria were used to narrow the search. The selected articles were subjected to critical appraisal using the Critical Appraisal Skills Programme (CASP). The authors followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines in conducting the review.

Findings: Of the 6,149 articles identified initially, only 4 met the inclusion and exclusion criteria and were included in the study. These articles detailed various deliveries and dosimetries in testosterone administration. Quality assessment using the CASP indicated that the articles were

valid, although their applicability in a local setting was deemed infeasible. Review results showed that the administration of exogenous testosterone led to lean mass gains, but it did not result in significant strength gains. The administration of testosterone and strength training resulted in improvements in functionality and strength; these gains were not significantly greater than those achieved through strength training alone. The administration of strength training alone demonstrated similar improvements in strength and functionality.

Contribution: An understanding of how testosterone and/or strength training affects age-related declines in lean muscle, functionality, and strength among older adult males enables physical therapists to develop targeted interventions that address these impairments.