

Paper Category:	Others
Paper Title: (Arial Font; 14 Pt Size)	Intervention to reduce intermuscular adipose tissue in older adults: a systematic review and meta-analysis
Abstract Body: (Arial Font; 12Pt Size)	<ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions
<p>(Maximum word limit - 300 words)</p> <p>Background Observational studies have indicated an association between intermuscular adipose tissue (IMAT) accumulation and clinically adverse outcomes, including disability and mortality. However, interventions aimed to reduce IMAT to date are varied and fragmented; thus, this knowledge has not been systematized.</p> <p>Objectives To evaluate the effects of interventions on reducing IMAT in older adults through a systematic review and meta-analysis.</p> <p>Method This study is a subsection of a comprehensive review focusing on changes in muscle quality with interventions registered in PROSPERO (registration number: CRD42022357116). The target population, intervention, comparison, outcomes, and study design were adults aged ≥60 years, any program for >8 weeks, the least impactful program, IMAT reductions, and randomized controlled trials, respectively. Following a literature search, seven reviewers conducted a two-step screening process and assessed the risk of bias in the included studies. Standardized mean differences (SMDs) in IMAT between the intervention and control groups were calculated using a random-effects model. Heterogeneity within the dataset and publication bias were assessed.</p> <p>Results In total, 4832 studies were initially retrieved, and 43 studies involving 2177 participants were included. Of these, 15 studies demonstrated significant effects of the intervention. The number of studies available for meta-analysis was sufficient for exercise (10 studies), nutrition (7 studies), and a combination of both (5 studies). There were significant and positive intervention effects with exercise interventions (SMD [95% confidence interval], -0.30 [-0.59 to -0.01]; I², 47.9%) and combination interventions (SMD [95% confidence interval], -0.33 [-0.62 to -0.04]; I², 25.0%) but not with nutrition interventions (SMD [95% confidence interval], 0.19 [-0.39 to 0.77]; I², 72.1%). Potential publication bias appeared to influence the summary of exercise and combination interventions.</p> <p>Discussions and Conclusions With or without nutritional intervention, exercise effectively reduces IMAT in older individuals. However, further well-designed trials are necessary to confirm these findings.</p>	

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