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Journal Homepage






## The Effects of Strength Training on Motor Control and Functional Performance in Older Adults: A Narrative Review

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### 1. Round 1

#### 1.1 Reviewer 1

Reviewer:

The phrase "This demographic shift has brought increased attention to the challenges associated with maintaining physical function and independence in older adults" could benefit from referencing specific studies or statistics that highlight the growing prevalence and importance of these challenges.

The statement "strength training induces significant neurophysiological adaptations" would be stronger with a more detailed explanation of the specific adaptations mentioned, such as neural drive or motor unit recruitment, with corresponding citations.

The discussion on "increased balance, coordination, and movement accuracy" should be supported by more specific data or examples from the literature reviewed, possibly including effect sizes or the magnitude of improvement observed in studies.

The article mentions the importance of "tailored strength training interventions" but does not elaborate on how these should be individualized based on factors like baseline fitness levels, comorbidities, or specific goals. Adding this detail would enhance the practical value of the recommendations.

The conclusion suggests that "future research should focus on optimizing strength training protocols," but this statement would be more impactful with suggestions on specific areas that require further exploration, such as the role of intensity vs. volume or the potential for integrating cognitive training.

Some statements in the introduction, such as "Strength training has emerged as a potent intervention," could be supported with more recent references to reflect the latest developments in this field.

The section discussing the sustainability of strength training benefits lacks specific examples or studies that have examined long-term adherence and outcomes. Including this information would strengthen the argument for its inclusion in regular care for older adults.

Author revised the manuscript and uploaded the updated document.

## 1.2 Reviewer 2

Reviewer:

The description of sarcopenia as "a condition known as sarcopenia" could be expanded to include more specific information on its diagnostic criteria, prevalence, and impact on health outcomes in older adults, supported by current literature.

The description of the search strategy, particularly the use of Boolean operators, lacks detail on how these were applied. It would be useful to include an example of a search string used, along with any filters applied (e.g., language, study type).

The inclusion criteria state that studies were included if they "assessed outcomes related to motor control and/or functional performance." However, it would be beneficial to clarify whether studies needed to assess both motor control and functional performance or if one was sufficient for inclusion.

The process of data extraction is mentioned briefly but would benefit from more detail on how consistency was ensured across reviewers, such as whether a standardized form was used or how discrepancies were resolved.

The findings on reduced fall risk following strength training interventions would be clearer if they included a comparison of different study outcomes, perhaps in a table, to visualize the variation in results across different studies.

The article discusses neural adaptations but could delve deeper into how these changes manifest behaviorally, with specific examples of improvements in daily activities or motor tasks that older adults experience post-training.

The practical implications section could be expanded to discuss how clinicians might implement strength training programs, including potential barriers to implementation in community or clinical settings.

Author revised the manuscript and uploaded the updated document.

## 2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.