

Pilates improves physical performance and decreases risk of falls in older adults: a systematic review and meta-analysis

- Fernandez-Rodriguez R.^{a, b},
- Alvarez-Bueno C.^{b, c},
- Ferri-Morales A.^d,
- Torres-Costoso A.^d,
- Pozuelo-Carrascosa D.P.^b,
- Martinez-Vizcaino V.^{b, e}

Abstract

Background: Falls are the leading cause of injury-related deaths in older adults. Physical exercise is a suitable strategy to reduce the risk of falls, but there is little research on the effectiveness of specific exercise modalities. Objectives: To estimate the effectiveness of Pilates compared to habitual or non-exercise on physical performance and the risk of falls in older adults. Data sources: Five databases were searched through April 15, 2021. Study selection: Randomized controlled trial in people aged ≥ 60 years. Outcomes: balance, strength, flexibility, functionality, and risk of falls. Data synthesis: Pooled standardized mean differences were calculated using a random-effects model. Subgroup analyses based on Pilates' modality, the existence of a detailed exercise protocol, supervision by a certified instructor, and overall risk of bias were performed. Results: Thirty-nine studies were included in the systematic review and meta-analyses. The meta-analyses indicated a moderate effect of Pilates on balance (ES = 0.36; 95% CI = 0.21 to 0.50), strength (ES = 0.63; 95% CI = 0.44 to 0.81), flexibility (ES = 0.41; 95% CI = 0.16 to 0.67), and functionality (ES = 0.51; 95% CI = 0.32 to 0.72) as well as a large effect on the risk of falls (ES = 0.90; 95% CI = 0.41 to 1.38) in older adults when compared with control groups. The level of certainty of the findings was low for balance, flexibility, and functionality and moderate for strength and falls. Conclusion and implications of key findings: Pilates may promote the autonomy of older people in their daily living activities. Systematic Review Registration Number PROSPERO CRD42018116452 © 2021 The Author(s)

Author keywords

Aging; Exercise therapy; Mind-body; Prevention