INPLASY

What is the effect of resistance training using bodyweight on balance and mobility in older adults?

INPLASY202420098

doi: 10.37766/inplasy2024.2.0098

Received: 23 February 2024

Published: 23 February 2024

Lanza, MB[1]; Fu, Y[2]; Dinardi, RR[3]; da Silva, GF[4]; Claudino, JG[5]; Martins-Costa, HC[6].

Corresponding author:
Ricardo Dinardi

dinardi06@hotmail.com

Author Affiliation:
Pontifícia Universidade Católica de Minas Gerais.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202420098

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 February 2024 and was last updated on 23 February 2024.

INTRODUCTION

Review question / Objective The primary objective of this review is to investigate the influence of resistance training using bodyweight on balance and mobility function in older adults.

Rationale Does resistance training with your own body weight have any effect on balance and mobility? One of the main reasons is to apply this type of training due to easy engagement, economical, low risk of injury, among other benefits. Our concern regarding balance and mobility due to the significant reduction of these capabilities with advancing age.

Condition being studied Healthy elderly individuals over 65 years of age, of both sexes, who performed tests of strength, static and/or dynamic balance, mobility, among others.

METHODS

Search strategy PUBMED, EMBASE, SCOPUS, and CINAHL. A search strategy was developed conjointly with an experienced information scientist. Searches had no language restriction, and focused on original research articles published in peer reviewed journals. The research was complemented by selecting lists of references of identified studies, previous systematic literature reviews, and publications known to the authors.

Participant or population Older individuals with a minimum mean age of 65 years of age. Healthy elderly individuals over 65 years of age, of both sexes.

Intervention Randomized control trial studies that includes resistance training using bodyweight to assess changes in mobility and/balance in older adults.

Comparator Individuals who did not exercise.

Study designs to be included Randomized controlled trials (RCTs).

Eligibility criteria This review included randomized control trials that evaluate the influence of resistance training using bodyweight on balance and mobility in healthy adults above 65 years old. Eligible studies those who performed resistance training using body weight and analysed how that influenced balance and mobility tasks such as: Gait/walk test; Staircase test; Time up and Go; Any Sit-To-Stand test; Berg Balance Scale; Star Excursion Balance Test; Balance Self-Efficac; Community Balance and Mobility Scale.

Information sources The studies found in the electronic databases were brought together in a single database for deleting duplicates. The selection will be carried out in two stages by two independent reviewers and included the analysis of titles/abstracts and full texts. Disagreements will be resolved by a third reviewer. Data will be extracted and collected in duplicate in Excel form developed for this purpose and previously tested. PUBMED, EMBASE, SCOPUS, and CINAHL. A search strategy was developed conjointly with an experienced information scientist. Searches had no language restriction, and focused on original research articles published in peer reviewed journals. The research was complemented by selecting lists of references of identified studies, previous systematic literature reviews, and publications known to the authors. Gray literature will also be carried out throughout the review progress.

Main outcome(s) Eligible studies will include those that have performed resistance training using body weight and analysed how that influenced balance and mobility tasks such as :
-Gait/walk test;
-Staircase test;
-Time up and Go;
-Any Sit-To-Stand test;
-Berg Balance Scale;
-Star Excursion Balance Test;
-Balance Self-Efficac;
-Community Balance and Mobility Scale.

Additional outcome(s) To answer the second questions the studies may also have measured the following variables:
-Muscle strength
-Neuromuscular activation by using any technique;
-Intramuscular fat, myosteatosis, intermuscular fat, low density lean tissue;
-Muscle size;
-Muscle composition;
Only full-text, peer reviewed articles will be considered.

Data management The studies found in the electronic databases were brought together in a single database for deleting duplicates. The selection will be carried out in two stages by two independent reviewers and included the analysis of titles/abstracts and full texts. Disagreements will be resolved by a third reviewer. Data will be extracted and collected in duplicate in Excel form developed for this purpose and previously tested. If the data from the different studies are relatively homogeneous, a meta-analysis will be performed.

Quality assessment / Risk of bias analysis The Cochrane Collaboration's tool was used to appraise the risk of bias in experimental studies.

Strategy of data synthesis If the data from the different studies are relatively homogeneous, a meta-analysis will be performed.

Subgroup analysis Perhaps individuals who were accompanied during training vs individuals who were not accompanied.

Sensitivity analysis None.

Language restriction No date or language restrictions.

Country(ies) involved Brazil and USA.

Other relevant information The review is being carried out by researchers from Brazil (Pontifical Catholic University of Minas Gerais and Federal University of Piauí) and the USA (University of Maryland). According to the researchers, the data from this review will be of important relevance in the field of resistance training and the elderly, a population that is growing in the world.

Keywords Bodyweight training, Resistance Training, Elderly, Old People.

Dissemination plans Scientific journals in the areas of training, rehabilitation, medicine and health.

Contributions of each author
Author 1 - Marcel Lanza - Conception, design, analysis and interpretation of data, writing of the manuscript, critical review of the text, final approval of the manuscript. Analysis and

interpretation of data, data collection and statistical analysis.
Email: marcel.lanza@gmail.com
Author 2 - Ricardo Dinardi - Conception, design, analysis and interpretation of data, writing of the manuscript, data collection.
Email: dinardi06@hotmail.com
Author 3 - Gisele da Silva - Conception, design, analysis and interpretation of data, writing of the manuscript, data collection.
Email: giselepersonal@yahoo.com.br
Author 4 - João Claudino - Analysis and interpretation of data, data collection and statistical analysis.
Email: joaogustavoclaudino@gmail.com
Author 5 - Hugo Martins-Costa - Conception, design, analysis and interpretation of data, writing of the manuscript, critical review of the text, final approval of the manuscript. Analysis and interpretation of data, data collection and statistical analysis.
Email: hugocmc@gmail.com
Author 6 - Yunting Fu - Analysis and interpretation of data, data collection and statistical analysis.
Email: yfu@hshsl.umaryland.edu