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**None declared.**

# Effect of Exercise Intervention on the Activities of Daily Living of the Elderly: A Meta-Analysis

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**Review question / Objective:** **Question 1: Does exercise intervention improve the activities of daily living of the elderly? Question 2: Which single intervention time, intervention frequency and intervention cycle have the most significant effects on the activities of daily living of the elderly? Question 3: Which type of exercise intervention has the most significant impact on the activities of daily living in the elderly?**
**Condition being studied:** **The impairment or loss of the ability of daily life of the elderly not only seriously reduces their quality of life, but also makes the family and society face many challenges such as medical care, rehabilitation care and resource allocation. Currently, exercise has been shown to have positive effects in improving and maintaining the daily living ability of the elderly, but there are still few studies in China, the purpose of this study was to explore the dose-effect relationship between exercise and activities of daily living (ADL) in the elderly.**

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 April 2021 and was last updated on 27 April 2021 (registration number INPLASY202140136).

## INTRODUCTION

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## METHODS

**Participant or population:** In this study, we selected healthy and non-healthy older adults.

**Intervention:** In the study, we select the articles with the intervention by exercise, physical activity, sport, and so on.

**Comparator:** The control group received placebo intervention, health education, daily activities, or routine care, etc.

**Study designs to be included:** RCT.

**Eligibility criteria:** (1) The subjects were elderly (> 60 years old) and did not distinguish between types of disability and physical fitness; (2) There was a specific exercise intervention program; (3) The outcome indicator or some of the indicators were activities of daily living, and there were specific analyses and discussions about the indicator; (4) Concrete experimental data are available for calculation.

**Information sources:** A computer was used to search the literature of exercise intervention on the activities of daily living of the elderly in the core WOS database, EBSCOhost database and PubMed database.

**Main outcome(s):** The main outcome is activity of daily living.

**Quality assessment / Risk of bias analysis:** The Cochrane bias analysis was used to evaluate the quality of the study. Two researchers independently used "Low bias risk", "Bias uncertainty" and "High bias risk" for each indicator according to the criteria, a third researcher was consulted or identified through group discussions on the entries that differed.

**Strategy of data synthesis:** In this study, we used Rev man 5.4.0 software to test heterogeneity, sensitivity analysis and draw the forest map. The outcome index included in this study was a continuous variable. If the outcome index test unit was identical, the effect unit was selected as Mean Difference (MD). If the unit was not identical, then the standard Difference (STD Mean Difference, SMD) was selected and 95% confidence interval was calculated. P value and I2 were used to test heterogeneity. I2 represents the level of heterogeneity across studies, with values ranging from 0 to 100%. When i2 is 0 ~ 40%, there is low degree of heterogeneity, when I2 is 41% ~ 60%, when I2 is 61% ~ 75%, there is great heterogeneity, when I2 is 76% ~ 100%, there is great heterogeneity. When I2≤50%, the fixed effect model was used for Meta-analysis and the random effect model was used for Meta-analysis. If $p < 0.05$, there was significant difference in heterogeneity among the studies, otherwise there was no difference. If there was heterogeneity, subgroup analysis and sensitivity analysis were used to find and determine the source of heterogeneity.

**Subgroup analysis:** The study was divided into six sub-groups: (1)population sub-group, (2)Intervention Cycle sub-group, (3) intervention frequency sub-group, (4) single intervention time sub-group, (5) intervention form sub-group, (6) Assessment Method sub-group.

**Sensitivity analysis:** In this study, the combined effects of the remaining studies were analyzed by eliminating the remaining studies one by one.

**Country(ies) involved:** China.

**Keywords:** exercise intervention; the elderly; activities of daily living; meta-analysis.

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