

Nº de abstracts = 18

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### **Resistance exercise for muscular strength in older adults: a meta-analysis.**

Peterson MD, Rhea MR, Sen A, Gordon PM.: Ageing research reviews, 2010 9(3):226-37. Laboratory for Physical Activity and Exercise Intervention Research, Department of Physical Medicine and Rehabilitation, University of Michigan, Ann Arbor, MI 48108, USA

**PURPOSE:** The effectiveness of resistance exercise for strength improvement among aging persons is inconsistent across investigations, and there is a lack of research synthesis for multiple strength outcomes. **METHODS:** The systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations. A meta-analysis was conducted to determine the effect of resistance exercise (RE) for multiple strength outcomes in aging adults. Randomized-controlled trials and randomized or non-randomized studies among adults  $\geq 50$  years, were included. Data were pooled using random-effect models. Outcomes for 4 common strength tests were analyzed for main effects. Heterogeneity between studies was assessed using the Cochran Q and I(2) statistics, and publication bias was evaluated through physical inspection of funnel plots as well as formal rank-correlation statistics. A linear mixed model regression was incorporated to examine differences between outcomes, as well as potential study-level predictor variables. **RESULTS:** Forty-seven studies were included, representing 1079 participants. A positive effect for each of the strength outcomes was determined however there was heterogeneity between studies. Regression revealed that higher intensity training was associated with greater improvement. Strength increases ranged from 9.8 to 31.6 kg, and percent changes were  $29 \pm 2$ ,  $24 \pm 2$ ,  $33 \pm 3$ , and  $25 \pm 2$ , respectively for leg press, chest press, knee extension, and lat pull.

CONCLUSIONS: RE is effective for improving strength among older adults, particularly with higher intensity training. Findings therefore suggest that RE may be considered a viable strategy to prevent generalized muscular weakness associated with aging.

## **Gait Speed and Survival in Older Adults**

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**Context** Survival estimates help individualize goals of care for geriatric patients, but life tables fail to account for the great variability in survival. Physical performance measures, such as gait speed, might help account for variability, allowing clinicians to make more individualized estimates. **Objective** To evaluate the relationship between gait speed and survival.

**Design, Setting, and Participants** Pooled analysis of 9 cohort studies (collected between 1986 and 2000), using individual data from 34 485 community-dwelling older adults aged 65 years or older with baseline gait speed data, followed up for 6 to 21 years. Participants were a mean (SD) age of 73.5 (5.9) years; 59.6%, women; and 79.8%, white; and had a mean (SD) gait speed of 0.92 (0.27) m/s.

#### **Main Outcome Measures**

Survival rates and life expectancy.

#### **Results**

There were 17 528 deaths; the overall 5-year survival rate was 84.8% (confidence interval [CI], 79.6%-88.8%) and 10-year survival rate was 59.7% (95% CI, 46.5%-70.6%). Gait speed was associated with survival in all studies (pooled hazard ratio per 0.1 m/s, 0.88; 95% CI, 0.87-0.90; *P*