Background: Falls are a geriatric syndrome that is considered a significant public health problem in terms of morbidity and mortality because they lead to a decline in functional capacity and an impaired quality of life in the elderly. Lower limb muscle strengthening seems to be an effective intervention for preventing falls; however, there is no consensus regarding the best method for increasing lower limb muscle strength. Objectives: To analyze the effectiveness of lower limb muscle strengthening and to investigate and describe the protocols used for preventing falls in elderly subjects. Method: We performed a systematic review of randomized and controlled clinical trials published between 2002 and 2012 in the databases PubMed, EMBASE, Scopus, Web of Science, and PEDro that cited some type of lower limb muscle strengthening protocol and that evaluated the incidence of falls as the primary outcome exclusively in elderly subjects. Twelve studies met the inclusion criteria. Qualitative analysis was performed by independent reviewers applying the PEDro scale. Results: The data obtained from the selected studies showed lower fall rates in the intervention groups compared to controls. Six studies described the lower limb muscle strengthening protocol in detail. High methodological quality was found in 6 studies (PEDro score 7/10 points). Conclusions: The methodological quality of the studies in this area appears to leave little doubt regarding the effectiveness of lower limb strengthening exercises for preventing falls in elderly subjects, however the interventions in these studies were poorly reported.

Keywords: physical therapy, elderly, falls, strength training, rehabilitation, review.