Review: intrinsic and environmental risk factor modification reduces falls in elderly people


QUESTION: In community dwelling and institutionalised elderly people, how effective are programmes designed to reduce the incidence of falls?

Data sources
Studies were identified by searching 8 databases. Bibliographies of relevant studies were reviewed, and researchers in the field were contacted for unpublished trials.

Data extraction
Data were extracted on setting, patient inclusion and exclusion criteria, sample size, key components of the intervention, study quality, and outcomes. Outcomes were the number of people who fell, the number of falls, and the severity of falls.

Main results
40 studies met the selection criteria. 14 RCTs evaluated exercise or physiotherapy interventions: participants in an individually tailored programme of progressive muscle strengthening, balance-retaining exercises, and a walking plan (3 RCTs) had lower rates of falls and injurious falls than did control group participants at 1 year (table). Participants exposed to a 15 week tai chi untargeted group intervention (1 RCT) had a lower rate of falling than did control group participants (risk ratio [RR] 0.51, 95% CI 0.36 to 0.73). 1 RCT evaluated a home safety intervention by an occupational therapist: among patients with a history of ≥ 1 fall in the previous year, the rate of falls was lower in the intervention group than in the control group (RR 0.64, CI 0.49 to 0.84). 1 RCT evaluated a placebo controlled medication withdrawal programme: the overall risk for falls was lower for the psychotropic medication withdrawal group (relative hazard 0.34, CI 0.16 to 0.74). Multidisciplinary, multifactorial, health, or environmental risk factor screening or intervention programmes, both for unselected community dwelling older people and for older people selected because of known risk factors, were evaluated in 7 and 2 RCTs, respectively. For both unselected (3 RCTs) and selected people (2 RCTs), the intervention groups had lower rates of falls than did control groups (table).

Conclusions
In community dwelling elderly people, intervention programmes that target both intrinsic and environmental risk factors may reduce the incidence of falls. However, evidence of effectiveness in institutional settings is lacking.