Osteoporotic fractures, especially hip fractures, constitute a large and growing problem worldwide, in both women and men, with a profound impact on quality of life and mortality. The fracture risk is influenced both by the genetic constitution and by environmental factors, with lifestyle becoming more important with increasing age.

Physical activity is one modifiable risk factor that can potentially prevent osteoporotic fractures by either improving muscle mass and balance, and thus prevent injurious falls, or by increasing skeletal strength. Even if it is intuitively appealing that physical activity should prevent osteoporotic fractures, the scientific evidence for this opinion has been unexpectedly weak.

The investigation of the effects of physical activity on the most important outcome — osteoporotic fracture risk — should ideally be evaluated in a randomized study, but this design is unlikely to ever be well performed due to methodological issues, e.g. study size, compliance, drop-outs, blinding and long follow-up. Therefore, it is not surprising that there are no randomized trials in this area.

The second best design, a prospective observational study of physical activity on the risk of fractures has been used in some publications. Recent results of such studies, design concepts and interpretation of the findings will be discussed during the presentation. Special attention will be held for the new fracture results from the Uppsala Longitudinal Study of Adult Men (ULSAM) cohort from Sweden, an investigation with five repeated measurements during a 35 year follow up from the age 50 years to 85 years of age.

Keywords: Hip, Osteoporosis, Exercise