Exercise

Exercise

Specific modalities of exercise have a preventive and therapeutic role to play in modifying both skeletal and non-skeletal risk factors for osteoporosis and osteoporotic fracture.

Progressive resistance training (also known as strength training or weightlifting) is an exercise modality in which muscles are exposed to a progressively greater load against a resistance (e.g., one's own body weight or an external resistance such as free weights) and, in contracting to oppose this load, adapt by growing in size and strength. The muscle contractions and adaptations that occur create tension (strain) on bones that are associated with beneficial adaptations in bone density at skeletal sites attached to the trained muscle groups.

Weight-bearing impact exercises, which involve the skeleton supporting the weight of the body ('load') with an additional force (impact) imparted through the skeleton (e.g., jumping), are also an effective way to load and stimulate bones to maintain or increase bone density, structure, and strength.

Balance training in isolation does not improve BMD, although, if challenging, can reduce falls risk (refer also to **Section 2.2**). Other kinds of exercise, such as walking and non-weight-bearing activities (e.g., cycling and swimming) have minimal effects on BMD and no significant effects on falls risk in RCTs, and may increase (e.g., walking) the risk of fracture, especially in those with poor balance, frailty, and sarcopenia.

Recommendations

Recommendation 17	Grade
Exercises recommended to reduce fracture risk: • Muscle resistance (strength) training should be regular (at least twice a week), moderate–vigorous and progressive. • Weight-bearing impact exercises should be performed most days (at least 50 moderate impacts) and include moderate-to-high loads in a variety of movements in different directions. • Balance training activities should be challenging. Limit prolonged sitting (sedentary behaviour).	B
Recommendation 18	**Grade**