

Craig Sale – Skeletal Health Across the Lifespan

Bone changes across the lifespan; rapid accumulation of bone mass occurs in childhood and adolescence, with peak bone mass being achieved between the ages of 20 and 30 years. Following this, bone mass stabilises before entering an age-related decline. In some, the bone tissue undergoes such significant compositional, architectural, and metabolic alterations that osteopenia and osteoporosis can ensue, with it being difficult to completely reverse this age-related decline. Whilst pharmacological interventions are the front line for osteoporosis management and prevention of fragility fractures, their effectiveness can be transient and there are always concerns over the costs and side-effects. Given this, there is also a need to examine potential non-pharmacological interventions against bone weakening, with potential directions for this being identified when considering the possible modifiable factors underpinning bone weakening. Both exercise and diet/nutrition have been identified as potential interventions for the maintenance of skeletal health across the lifespan, particularly during childhood, adolescence, and early adulthood, with a view to maximising peak bone mass. This is relevant to the general population but also to the athlete who, by their very nature, undertake significant amounts of exercise training during this period of their lives. Not all athletes, however, have good skeletons, with some of the possible reasons for this being explained by the types of exercise being performed and interactions with dietary and nutritional factors that may negatively influence bone. Whilst this is so, it remains somewhat less clear how this might influence the longer-term bone health of athletes as they age. This talk will cover the potential roles of diet, particularly alongside exercise, in maintaining skeletal health across the lifespan and will draw upon specific reference to athletes where possible.