Bone Health and Eating Disorders

Decreased bone density and strength is a common consequence seen in individuals with eating disorders. Osteoporosis is characterised by significant bone loss and deterioration of the microarchitectural structure of bone.

Inadequate food intake, low weight, amenorrhoea, pubertal delay or arrest and a family history of osteoporosis puts an individual at risk of decreased bone density.

Eating disorders may interfere with peak bone mass acquisition during adolescence. Failure to achieve normal peak bone mass or early loss of bone mass may lead to premature development of osteoporosis in adulthood.

Individuals with persisting amenorrhoea, even with apparent minimal weight loss or within a normal weight range remain at high risk for early development of osteopaenia and osteoporosis.

Pubertal arrest, regression or slowed growth should prompt assessment of hormonal status, and if persistent, consideration should be given to seek the opinion of an endocrinologist.

Investigation of osteoporosis and osteopaenia should be considered for all individuals who have been amenorrhoeic for more than six months and annually thereafter. Dual-Energy X-ray Absorptiometry (DEXA) scanning services for adults are widely available. However, many services lack software and age specific ranges for meaningful interpretation in adolescents.

Osteoporosis and Osteopaenia Management Plan

A medical team, endocrinologist, dietitian and physiotherapist should be involved in the treatment plan for an individual with osteopaenia and/or osteoporosis.

The key to prevention or minimizing osteoporosis is nutritional rehabilitation and the resumption of normal sex hormone metabolism (usually indicated by resumption of menses in females).

The following recommendations should be followed:

1. Restoration of adequate nutritional status, including an increased energy intake to support adequate hormone production, menses and normal growth.
2. Restoration of normal weight and increased muscle mass.
3. Medical assessment of risk factors, or conditions, associated with osteoporosis (e.g., prolonged glucocorticoid therapy, chronic liver and renal disease, malabsorption disorders or thyroxine excess.)
4. Ensure adequate intake of calcium and vitamin D containing foods.
5. Supplement intake of vitamin D and calcium required. However calcium from food is always preferable.
6. Adequate sun exposure for vitamin D.
7. Whole body DEXA for individuals with AN with >six month of amenorrhoea, and annually thereafter. Consider DEXA in males with prolonged undernutrition and other risk factors too.

8. The use of HRT (hormone replacement therapy) to minimise bone demineralisation, might be considered in individuals with prolonged secondary amenorrhoea, otherwise this would be discouraged.
9. The use of estrogen and birth control is not recommneded in the treatment of osteoporosis.
10. The use of biphosphonates in AN has not been sufficiently studied. Initial results indicate that attainment of normal weight is the most effective measure.
11. If osteopaenia or osteoporosis is detected refer to a physiotherapist. A weight bearing and resistance program can be initiated if the individual is medically stable and nutritional intake allows for increased energy expenditure.