

NUTR3000

Week 6 Calcium

Calcium, Exercise and Bone Density

Calcium is needed for bones (and muscle/nerve function). Blood-calcium levels are maintained within narrow limits. 90% is stored in bones.

If diet fails to adequately maintain blood calcium levels, calcium will be taken from bone stores. Bone density will then fall and bone strength reduced.

- Only a few foods are rich in calcium yet a number of foods interfere with its absorption.
- Good sources include milk and milk products, fish, tofu, calcium fortified foods, dark leafy vegetables.
- Given that 99% of the body's calcium is found in bones, assessing BMD provides a good measure of calcium reserves

RDI for calcium:

- 14 – 18 years: 1300mg/day
- 19-30 years: 1000mg/day
- RDI is higher for children/adolescents. Laying down done for the future.

A very high protein intake can result in excess calcium excretion in the kidney; Sulphur amino acids reduce calcium reabsorption and can lead to hypercalciuria. (has not been shown to reduce BMD).

Caffeine, alcohol, nicotine and oxalic acid will impair calcium uptake. However, 1-4 cups of coffee per day will only have a small influence on calcium intake.

- **Rickets** lack of vitamin D – soft bones.

In addition to adequate amounts of calcium being made via the diet, bone health also depends on sufficient amount of vitamin D and also oestrogen.

Oestrogen – plays an important role in BMD.

Poor BMD increases risk of fractures

Hip fracture has most severe implications: 1 in 5 indiv. Die within the 1st year, while 60% of indiv. Who survive still required assistant to walk one year later, 33% are totally dependent or admitted to a nursing home.