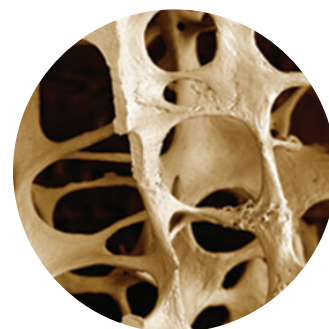


Osteoporosis²

Osteoporosis is a medical condition of brittle and fragile bones due to loss of bone tissue, increasing the risk of fracture. Currently it is estimated that over 200 million people worldwide suffer from the disease.⁶ This could happen as a result of hormonal changes, or long term deficiency of calcium or vitamin D.



Healthy bone



Osteoporosis

Calcium

Calcium is a crucial mineral that is necessary to build bones and keep them healthy.

99% of calcium is found in our bones and teeth, while the remaining 1% is found in our blood.⁷

Functions of Calcium⁸

- Builds strong bones and teeth
- Protects against osteoporosis
- Regulates muscle contraction, including heartbeat
- Ensures blood clots normally

Vitamin D

Vitamin D, or the sunshine vitamin, is produced by the skin when exposed to sunshine.

Vitamin D deficiency can lead to osteomalacia, which causes both weak bones and muscle.⁹

Functions of Vitamin D⁹

- Increases the absorption of calcium in the intestines
- Keeps bones and teeth healthy
- Protects against osteoporosis

Recommended daily intake for Calcium¹⁰

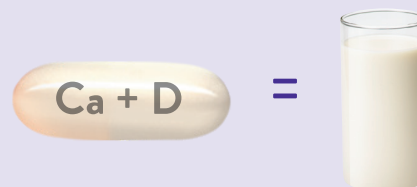
Age (years)	Male	Female
4 - 9	1,000 mg	1,000 mg
10 - 12	1,300 mg	1,300 mg
13 - 18	1,300 mg	1,300 mg
19 - 49	1,000 mg	1,000 mg
50 - 59	1,000 mg	1,200 mg
≥ 60	1,000 mg	1,200 mg

Age (years)	Pregnancy	Lactation
13 - 19	1,300 mg	1,300 mg
20 - 49	1,000 mg	1,000 mg



**Daily requirement:
3 glasses of milk**

**ONE capsule of 350mg
elemental calcium supplement is
equivalent to ONE glass of milk**



References:

1. NIH. 2016. Handout on Health: Osteoporosis. <https://www.bones.nih.gov/health-info/bone/osteoporosis/osteoporosis-hoh>. Accessed on 14 Aug 2018.
2. Malaysia Osteoporosis Society. Clinical Practice Guidelines on Management of Osteoporosis. Malaysia: Malaysian Osteoporosis Society.
3. Clinical Guidance on Management of Osteoporosis 2012 (Revised 2015); 1-63.
4. Levinson DI, Bockman RS. A review of calcium preparations. *Nutr Rev* 1994;52(7):221-232.
5. How to take extra calcium. Retrieved from <https://medlineplus.gov/ency/article/007477.htm>. Accessed on 21 Dec 2018.
6. International Osteoporosis Foundation. 2017. Osteoporosis. <http://www.iofbonehealth.org/osteoporosis>. Accessed on 14 Aug 2018.
7. NIH. 2015. What is Bone? <https://www.bones.nih.gov/health-info/bone/bone-health/what-is-bone>. Accessed on 14 Aug 2018.
8. NIH. 2017. Calcium. <https://ods.od.nih.gov/factsheets/Calcium-HealthProfessional/>. Accessed on 14 Aug 2018.
9. NHS. 2017. Vitamin D-Vitamins and minerals. <https://www.nhs.uk/conditions/vitamins-and-minerals/vitamin-d/>. Accessed on 14 Aug 2018.
10. Recommended Nutrient Intake for Malaysia RNI 2017; 1-542.