Osteoporosis is a metabolic bone disease characterised by low bone mass, making bones fragile and likely to fracture. It is also referred to as a ‘silent’ disease because symptoms and pain do not appear until a fracture has occurred.\(^1\) While calcium is critical for the development and maintenance of strong bones and teeth, emerging science shows that we need more than just calcium to optimise bone health. There are benefits to a combination of calcium, magnesium and vitamin D, which in fact go beyond just bone health.

**Why calcium, magnesium and vitamin D?**

- Research shows that adequate calcium and vitamin D as part of a healthy diet, along with physical activity, may reduce the risk of osteoporosis in later life.\(^1\)
- Magnesium helps build strong bones and stimulates calcium uptake.\(^2\)
- Calcium and magnesium necessary for strong bones and teeth also play a role in cardiovascular health, nerve and muscle function and many enzyme reactions.
- Vitamin D is essential for promoting calcium absorption in the body and for maintaining adequate calcium and phosphate in the blood to enable normal bone mineralisation and growth.

**Why GNLD Chelated Cal-Mag with 500 IU vitamin D?**

**Supports stronger bones and more.** Perfect blend of chelated calcium and magnesium with high potency vitamin D3 to support a broad range of health benefits.

**Proprietary double amino acid chelation.** Fast dissolution and maximum absorption of minerals, calcium and magnesium. Prevents irritation to stomach and intestines.

**Preferred 2:1 ratio** of calcium to magnesium.

**High potency and bioavailability.** 500 IU readily absorbable and highly available vitamin D3.

**Easy to swallow,** coated tablets.

**Pure.** Pharmaceutically pure, seashell sourced calcium.

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**THE VITAMIN D STORY**

**Technically not a vitamin**

Vitamin D is a fat-soluble micronutrient that is naturally present in very few foods. Technically, it is not a vitamin. Vitamin D is metabolised in the liver and kidneys to become calcitriol, the most powerful seco-steroid hormone in the human body. There are two forms; vitamin D2 and vitamin D3. Vitamin D2 is the form made by plants from the natural sterol ergosterol, while D3 is made in the skin of humans and animals from a natural form of cholesterol (7 – dehydrocholesterol) and exposure to UVB rays from sunlight. Two common ways to gain vitamin D are through the consumption of foods such as fatty fish as well as other foods specifically fortified with vitamin D and through sunlight when ultraviolet rays touch the skin and trigger vitamin D synthesis.1, 2

**Vitamin D teams up with calcium for stronger bones**

Vitamin D is essential for promoting calcium absorption in the body and for maintaining adequate calcium and phosphate concentrations in the blood to enable normal bone mineralisation and growth. Without sufficient vitamin D, bones can become thin, brittle, or misshapen. Vitamin D prevents rickets in children, osteomalacia in adults, and together with calcium, osteoporosis in older adults.3, 4

**Are we getting enough vitamin D?**

As the recommended Adequate Intake (AI) amounts for vitamin D have increased, some of the sources of vitamin D have decreased. Very few foods contain Vitamin D naturally. The best sources are oily fish and fish livers oils (such as Cod Liver Oil) with smaller amounts in beef liver, cheese and egg yolks.5 For several health reasons including concerns about skin cancer.6 Also, as people age, the amount of vitamin D synthesis, most people now realise it is prudent to limit exposure of skin to sunlight and tanning beds due to the potential for lifetime cumulative UV damage that can lead to skin cancer.7, 8 Despite the importance of sun in vitamin D synthesis, many people now realise it is prudent to limit exposure of skin to sunlight and tanning beds due to the potential for lifetime cumulative UV damage that can lead to skin cancer.7, 8 Also, as people age, the amount of vitamin D made in the skin after exposure to sunlight declines, and the body loses some of its ability to convert vitamin D into the active hormone needed for proper calcium metabolism.

**How much vitamin D is adequate?**

The Food and Nutrition Board (FNB) at the Institute of Medicine established an Adequate Intake (AI) for vitamin D in 1997 at 200 IU from birth to 50 years and 400 IU for people 50+, representing the daily intake sufficient to maintain bone health and normal calcium metabolism in healthy people. Since that time, substantial new research has been published to justify a re-evaluation of adequate vitamin D intakes per the FNB’s expert committee on vitamin D established in 2008. Many health experts today believe the AI for vitamin D should be increased to between 600 and 1,000 IU for adults.

**Other health risks associated with vitamin D deficiency**

In addition to weaker bones, vitamin D malnutrition may be associated with an increased susceptibility to several chronic diseases.9 While ongoing research points to the importance of vitamin D, the facts remain that modern lifestyles and diets may lead to many people not getting enough.

**GNLD provides multiple sources of vitamin D**

Chelated Cal-Mag with 500 IU of vitamin D3 provides a unique amino-acid-chelated calcium to help improve absorption in a 2-to-1 ratio with magnesium. GNLD’s proprietary double amino acid chelation supports maximum absorption of calcium and magnesium while including a powerful dose of vitamin D3, the most readily absorbable and highly bioavailable form of vitamin D. Several other GNLD products contain vitamin D, including:

- Vitamin A & D
- Vita-Squares
- Liqui-Vite
- Formula IV and Formula IV Plus
- Multi
- Daily Vitality Pack
- GR2 Control Meal Replacement Shakes
- Nutrishake
- Pro Vitality+

**REFERENCES**

6) Holick MF. Vitamin D: the undersappreciated D-lightful hormone that is important for skeletal and cellular health. Curr Opin Endocrinol Diabetes 2002;9:87-98.