

D3 SPORT EFFECT

BONE STRENGTH



To understand the role of vitamin D more richly, it's first important to note that it's not a 'true vitamin', it is actually a hormone.

Humans undergo a special chemical reaction when in the sun, once the ultraviolet B radiation penetrates our skin's epidermis, our body begins the production of vitamin D, or specifically vitamin D3.

Identifying vitamin D as a hormone helps to explain how it's inextricably tethered to so many biological functions.

CHOLECALCIFEROL

Also known as Cholecalciferol, vitamin D3 helps to ensure optimal immune function, muscle recovery and the absorption of calcium and other nutrients into the body.

How do I know if I'm deficient in vitamin D?

It's a good idea to get tested periodically, particularly if you have symptoms of deficiency - including a history of stress fractures, frequent sickness, poor wound healing or recovery, mood or cognitive disorders. It's also important to note that prevalence is more common amongst women and increases with age; certain medications may interfere with the body's ability to produce or absorb vitamin D, and gut disorders such as Crohns or Celiac disease increase risk of deficiency. A simple blood test is all that is required to test your vitamin D levels.

Currently, clinical vitamin D levels are defined as follows:

Deficient (<20 ng/mL)

Insufficient (20 to 32 ng/mL)

Sufficient (>32 ng/mL).

Higher levels are often recommended for athletes for health as well as performance reasons.



“The role of vitamin D in supporting musculoskeletal health has now been corroborated by a plethora of data, with deficiencies linked to increased vulnerability towards muscle and bone related conditions, such as increasing the risk of osteopenia, precipitating and exacerbating osteoporosis, and increasing muscle weakness. This is because vitamin D plays a synergistic role in supporting the absorption of calcium.”

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WHEN TO TAKE FOR BEST PERFORMANCE OUTCOMES?

Vitamin D is fat soluble, so it's best taken with a meal that contains some fat. Given that it also boosts the absorption of calcium, these two should be taken together in the morning. Pay attention to consistent intake especially over the winter months.



Pip Taylor
Performance Dietician

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RELEVANT STUDIES

“A study of 214 NFL scouts (with a median age of 22) found that overall, 59% of the athletes had below-normal levels of vitamin D, defined as $> 50\text{nmol/L}$, placing them in an increased risk category for injury and illness. Additionally, of the study participants who missed at least one football game in the last season, 86% were found to have significantly low levels of vitamin D.

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Functional indices of vitamin D status and ramifications of vitamin D deficiency...

Evidence is reviewed that shows that serum 25(OH)D3 concentrations of $< 80\text{ nmol/L}$ are associated with reduced calcium absorption, osteoporosis, and increased fracture risk.

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Relation of dietary intake and serum levels of vitamin D to progression of osteoarthritis of the knee...

Evidence suggests that low intake and low serum levels of vitamin D each appear to be associated with an increased risk for progression of osteoarthritis of the knee. 556 participants had complete assessments. Incident osteoarthritis occurred in 75 knees; progressive osteoarthritis occurred in 62 knees.

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