



## Vegan Vitamin D3 - Sales & Science Brief

Vitamin D is both a nutrient we consume and a hormone our bodies make. It has also been referred to as the “sunshine vitamin” because exposure to the sun’s ultraviolet light will convert a form of cholesterol under the skin into vitamin D. It is a fat-soluble vitamin that has long been known to help the body absorb and retain calcium and phosphorus. As such, vitamin D is critical for building bones and for so many other aspects of human health.

### VITAMIN D3 & D2

There are two primary forms of vitamin D available for use in dietary supplements: cholecalciferol (vitamin D3) and ergocalciferol (vitamin D2). Cholecalciferol is the form made in the human body, and it is more active than ergocalciferol. In fact, vitamin D2 potency is less than one third that of vitamin D3<sup>1</sup>—so D3 is generally considered the preferred form of vitamin D. Heretofore, commercial cholecalciferol was exclusively synthesized from lanolin (from sheep) or fish oil, and so was not considered vegan, nor was it necessarily a sustainable or non-GMO source. Furthermore, lanolin from sheep’s wool undergoes esterification, dehydrogenation, and saponification to become 7-dehydrocholesterol. It then undergoes photoreaction, crystallization, and concentration to become cholecalciferol. This is a synthetic process. To be clear, *vitamin D3 (cholecalciferol) derived from lanolin is synthetic*. Now, however, there is now a vegan and natural source of D3: reindeer lichen (*Cladonia rangiferina*) derived **VegaDelight® Vegan D3** from Nutraland USA which is sustainable and non-GMO.

### VITAMIN D’S BIOLOGICAL FUNCTIONS

This nutrient is best known for its role in helping to facilitate the absorption of calcium and phosphorus (as well as magnesium), and so helping to promote bone health.<sup>2</sup> If you are deficient in vitamin D you will not be able to absorb enough calcium to satisfy your body’s calcium needs.<sup>3</sup> This will have a significant impact on bone health.<sup>4 5</sup> In addition, vitamin D is a potent immune system modulator<sup>6 7</sup>, supports healthy insulin/blood sugar metabolism<sup>8</sup>, plays important roles in cardiovascular health<sup>9 10</sup>, cognitive function<sup>11</sup> and many other aspects of human health and wellness.

### VITAMIN D DEFICIENCY AND SUFFICIENCY

Vitamin D sufficiency is measured by serum 25-hydroxyvitamin D levels [25(OH)D] in the body,<sup>12</sup> and deficiency occurs serum 25(OH)D are < 50 nmol/L. Research<sup>13</sup> indicates that 29% of the US population is vitamin D deficient

(equivalent to <50 nmol/L) and an additional 41% are vitamin D insufficient (equivalent to <75 nmol/L).

### VEGADELIGHT® VEGAN D3

**VegaDelight® Vegan D3** is a plant-sourced and self-affirmed GRAS natural vitamin D3. It is vegan.org Vegan Certified, AVA Vegan Certified, Non-GMO Project Verified, Star-K Kosher Certified, and AHF Halal Certified.



It is derived from reindeer lichen, a natural source of D3<sup>14</sup>. Reindeer lichen has a traditional history of use by the Inuit and other indigenous populations<sup>15</sup>. It is also sustainably harvested through eco-friendly and responsible wildcrafting from alpine regions. Available in oil and powder forms, **VegaDelight® Vegan D3** has excellent stability over 24 months.

### STRUCTURE/FUNCTION CLAIMS

*NOTE: The following structure/function claims are, to the best of our knowledge and expertise, compliant with the regulations established by The Dietary Supplement Health & Education Act of 1994 (DSHEA). Nonetheless, we recommend that you review any structure/function claims for your branded products with your regulatory attorney or other regulatory expert prior to using them.*

### VegaDelight vegan D3 related claims

- Unlike most vitamin D3 ingredients, VegaDelight® is a naturally derived, plant-based vitamin D3 from reindeer lichen (*Cladonia rangiferina*).
- VegaDelight® is a GRAS-affirmed, natural, vegan vitamin D3. It is vegan.org Vegan Certified, AVA Vegan Certified, Non-GMO Project Verified, Star-K Kosher Certified, and AHF Halal Certified.
- VegaDelight® vegan D3 materials are fairly and ethically sourced.

### Deficiency/insufficiency-related claims

- Globally, 44.7% of the population is vitamin D deficient.†
- In the United States, 29% of the population is vitamin D deficient and an additional 41% are vitamin D insufficient.†



### **Blood sugar-related claims**

- Vitamin D supplementation has been shown to help support healthy blood sugar levels already in a normal range.†
- Vitamin D supplementation has been shown to help maintain healthy long-term blood sugar already in a normal range.†
- Vitamin D supplementation has been shown to help support insulin sensitivity.†

### **Cardiovascular-related claims**

- Vitamin D supplementation helps support healthy heart function.†
- Vitamin D supplementation has been shown to help support healthy cholesterol levels already in a normal range.†

### **Gastrointestinal-, liver-, and thyroid-related claims**

- Vitamin D supplementation has been shown to help support healthy intestinal function.†
- Vitamin D supplementation has been shown to help support healthy liver function.†
- Vitamin D supplementation has been shown to help support healthy thyroid function.†

### **Genitourinary-related claims**

- Vitamin D supplementation has been shown to help support a healthy menstrual cycle.†
- Vitamin D supplementation has been shown to help support reproductive health in women and men.†
- Vitamin D supplementation has been shown to help support healthy ovarian function.†
- Vitamin D supplementation has been shown to help support healthy urinary function.†

### **Immune-related claims**

- Vitamin D helps act as a modulator of the immune system.†
- Vitamin D helps regulate immune response.†
- Vitamin D helps promote innate immunity.†

### **Musculoskeletal-related claims**

- Vitamin D supplementation has been shown to help support healthy bones in various populations. †
- Vitamin D supplementation has been shown to help support muscle comfort.†

- Vitamin D and protein supplementation has been shown to help support muscle strength in an older population.†
- Vitamin D helps facilitate the absorption of calcium and phosphorus (as well as magnesium), and so helps to promote bone health.†
- Vitamin D supplementation has been shown to help support healthy joints.†

### **Pregnancy and birth-related claims**

- Vitamin D supplementation during pregnancy has been shown to help support healthy fetal growth.†
- Vitamin D supplementation during pregnancy has been shown to help support fetal health.†
- Vitamin D supplementation during pregnancy has been shown to help support healthy birth weight.†

### **Mood-related claims**

- Vitamin D supplementation has been shown to help support common, stress-related anxiety.†
- Vitamin D supplementation has been shown to help support a positive mood.†

### **Respiratory system-related claims**

- Vitamin D supplementation has been shown to help support healthy respiratory function in adults and children.†
- Vitamin D supplementation has been shown to help support healthy lung function in adults and children.†

### **Skin-related claims**

- Vitamin D supplementation has been shown to help reduce lesions in non-cystic acne.†
- Vitamin D supplementation has been shown to help support comfortable, healthy skin in children.†
- Vitamin D supplementation has been shown to help support comfortable, healthy skin in adults.†

### **Testosterone-related claims**

- Provides 3,332 IU of vitamin D, which may help increase healthy testosterone levels.†
- Research shows that men with higher levels of vitamin D tend to have higher levels of testosterone.†

### **References**

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<sup>8</sup> Farahmand MA, et al. BMC Endocr Disord 2023;23(1):15.

<sup>9</sup> Acharya P, et al. Am J Cardiol 2022;173:56-63.

<sup>10</sup> Morvaridzadeh M, et al. Clin Ther 2021;43(9):274-296.

<sup>11</sup> Balion C, et al. Neurology 9-25-2012;79(13):1397-1405.

<sup>12</sup> Wharton B, et al. Lancet. 2003;362(9393):1389-1400.

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