



DOSSIER · SUBSTANCE

# Vitamin D

Vitamin D: What 339 human studies show, including 228 randomized controlled trials – ordered by area of application and strength of evidence.

**5,730**

STUDIES IN  
TOTAL

**3,109**

IN HUMANS

**671**

OF WHICH  
CONTROLLED

**335**

IN ANIMALS

**196**

IN THE LAB

Figures from the IHR study database · Last updated 2026-10-15

## How to Read This Dossier

**ESTABLISHED**

measured in humans, with a comparison group

**PLAUSIBLE**

supported by mechanism, animal studies or observation

**HYPOTHESIS**

a likely connection that still needs to be tested

## Vitamin D at a Glance

For mood and depression, vitamin D supplementation improved depressive symptoms in several controlled studies and meta-analyses <sup>5174150</sup>. For lupus, rheumatoid arthritis and early multiple sclerosis, disease activity fell under vitamin D compared with the control in one meta-analysis and two controlled studies <sup>55211132</sup>. For heart, circulation and blood pressure, results without a difference predominate, for example for blood pressure and cardiovascular mortality <sup>2190107157187228</sup>.

We evaluated 339 human studies on Vitamin D, including 228 randomised controlled trials and 88 meta-analyses or systematic reviews; the controlled studies include 142,839 participants in total. As of 3 October 2026.

## 1. What Is Vitamin D? Occurrence, Origin and Forms

Vitamin D is a group of fat-soluble vitamins, the most important being vitamin D3 (cholecalciferol) and vitamin D2 (ergocalciferol). The body makes vitamin D3 itself in the skin when it is exposed to the sun's UVB radiation; the liver and kidneys convert it into the storage form 25-hydroxyvitamin D and the active hormone form.

Food provides little vitamin D, mainly from oily sea fish, cod liver oil, egg yolk and mushrooms exposed to UV light. At our latitudes, sunlight in the winter half-year is hardly enough for the body's own production.

Vitamin D3 for supplements is mostly obtained from wool fat (lanolin), for vegan products from lichen; vitamin D2 is made from yeast or fungi. Studies test daily, weekly or infrequent high single doses.

### Forms and Preparations Studied

- Vitamin D3 (cholecalciferol) as capsule, tablet or drops
- Vitamin D2 (ergocalciferol)
- Calcifediol (25-hydroxyvitamin D) taken by mouth
- Vitamin D combined with calcium, vitamin K2 or omega-3
- Sunlight and UVB light for the body's own production

Not covered on this page:

- Active vitamin D hormones and analogues as medicines (calcitriol, alfacalcidol, paricalcitol) in kidney and parathyroid disease
- Topical vitamin D analogues for psoriasis (calcipotriol)

## 2. What Does Vitamin D Do? Results by Area

| AREA                                  | RESULT IN CONTROLLED STUDIES | STRENGTH OF EVIDENCE | STUDIES                                      | PARTICIPANTS |
|---------------------------------------|------------------------------|----------------------|----------------------------------------------|--------------|
| Infections and immune system          | mostly improved              | high                 | 19 meta-analyses · 40 controlled · 6 other   | 7,232        |
| Bones, falls and fractures            | mixed                        | high                 | 6 meta-analyses · 41 controlled · 8 other    | 11,754       |
| Blood sugar and metabolism            | mixed                        | high                 | 14 meta-analyses · 31 controlled · 6 other   | 46,556       |
| Heart, circulation and blood pressure | mostly no difference         | high                 | 11 meta-analyses · 30 controlled · 3 other   | 26,146       |
| Mood and depression                   | mostly improved              | high                 | 5 meta-analyses · 17 controlled · 0 other    | 4,067        |
| Pregnancy and children                | mixed                        | high                 | 5 meta-analyses · 10 controlled · 5 other    | 5,476        |
| Autoimmune diseases                   | mostly improved              | high                 | 4 meta-analyses · 3 controlled · 1 other     | 416          |
| Muscle strength                       | mostly improved              | moderate             | 2 meta-analyses · 19 controlled · 3 other    | 3,004        |
| Cancer risk and course                | mixed                        | low                  | 0 meta-analyses · 7 controlled · 1 other     | 22,796       |
| Other outcomes                        | mostly improved              | high                 | 41 meta-analyses · 171 controlled · 22 other | 57,783       |

How to read the table: counted are human studies whose results concern the area. "High" means at least one meta-analysis and two controlled studies showing improvement, or at least three controlled studies of which three quarters show improvement, with at least 300 participants in total. "Moderate" means at least two controlled studies showing improvement, as a majority, or one meta-analysis alongside controlled studies. "Low" means one controlled study showing improvement. Where an area has no controlled study, the strength of evidence is at most "low" (result "reviews only" or "observational data

only”). Everything else is “unclear”. A study counts as showing improvement when at least half of its outcomes in this area improved. Reviews of combination products do not count as meta-analyses; results that only describe side effects or shares of users do not count as an effect. The same study is counted only once.

### 3. What the Studies Show in Detail

#### Vitamin D, Infections and Immune System: Human Studies

For COVID-19, mortality under vitamin D was lower in two meta-analyses and one controlled study, but not robust in one meta-analysis <sup>3153225</sup>. In this meta-analysis, ICU admission and ventilation remained without a difference <sup>53</sup>, and one review warns that small studies overestimate the benefit <sup>64</sup>. In children with asthma, severe attacks decreased in a meta-analysis compared with placebo and in a controlled study under a higher dose <sup>46191</sup>. Inflammation markers such as CRP fell more strongly in meta-analyses in type 2 diabetes and in dialysis patients than under control <sup>3664</sup>. Overall, vitamin D did not prevent respiratory infections in children in two meta-analyses and one controlled study <sup>1324134</sup>, but in schoolchildren in winter the number of days of illness fell <sup>159</sup>. Vitamin D did not prevent tuberculosis in one meta-analysis <sup>14</sup>. Investigated were predominantly oral vitamin D3 (cholecalciferol) and vitamin D2 (ergocalciferol) preparations as well as calcifediol. The results depend on form, dose and baseline levels, and many studies were small or short.

| STUDY                             | DESIGN · PARTICIPANTS                   | PREPARATION · DOSE · DURATION · COMPARISON                                                                                |
|-----------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <sup>2</sup> Chen et al. 2021     | meta-analysis · 536,105 participants    | Vitamin D supplements (form not specified); vs. placebo/control or higher vs. lower vitamin D levels                      |
| <sup>9</sup> Wang et al. 2024     | meta-analysis · 35,160 participants     | Vitamin D supplements; vs. Placebo                                                                                        |
| <sup>11</sup> Meng et al. 2025    | meta-analysis · 19,586 participants     | Vitamin D supplementation; vs. Placebo or standard treatment                                                              |
| <sup>13</sup> Wang et al. 2025    | meta-analysis · 18,372 participants     | Oral vitamin D supplementation; Daily low-dose ≤ 1000 IU/day vs. higher doses; vs. Placebo or no treatment                |
| <sup>14</sup> Liu et al. 2025     | meta-analysis · 15,677 participants     | Vitamin D supplementation; vs. Placebo                                                                                    |
| <sup>17</sup> Hsu et al. 2026     | systematic review · 11,600 participants | Vitamin D supplements (form not reported); vs. Placebo or control in included RCTs                                        |
| <sup>18</sup> Patchen et al. 2025 | systematic review · 10,611 participants | vitamin D (form not specified); 200 IU/day to 100,000 IU bolus quarterly; 28 days to two years; vs. placebo/no supplement |
| <sup>21</sup> Goswami et al. 2025 | systematic review · 4,415 participants  | Vitamin D for prophylaxis; 1000 IU or 5000 IU; 4 to 16 weeks; vs. Placebo or lower dose                                   |

Further studies in this area: <sup>24 28 31 32 36 46 52 53 64 66 75 77 84 97 102 108 134 143 147 149 150 155 156 159 163 169 180 191 198 203 207 214 225 226 227 237 238 239 245 256 262 269 273 280 285 287 292 295 296 306 309 317 318 326 327 328 336</sup>

#### Vitamin D, Bones, Falls and Fractures: Human Studies

Children whose mothers received cholecalciferol during pregnancy had higher bone density at primary school age than after placebo <sup>116</sup>. In children and young adults with HIV, a relatively high daily dose improved bone density in a meta-analysis <sup>50</sup>. For falls in independently living older people, one meta-analysis and two controlled studies found no difference <sup>1094145</sup>. Three meta-analyses, by contrast, found fewer falls, depending on dose, daily administration and baseline levels <sup>456</sup>. Fewer bone fractures appeared in one meta-analysis only when vitamin D was given together with calcium <sup>6</sup>. The strength of evidence in the table is high, but the results depend strongly on form, dose and accompanying supplementation; it remains open which groups and dosages actually benefit.

| STUDY                                    | DESIGN · PARTICIPANTS               | PREPARATION · DOSE · DURATION · COMPARISON                                                                             |
|------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <sup>4</sup> Wei et al. 2022             | meta-analysis · 61,350 participants | Vitamin D supplement, partly with calcium; high-dose ≥700 IU to 2000 IU daily vs. <700 IU; vs. placebo or no treatment |
| <sup>5</sup> Tan et al. 2024             | meta-analysis · 58,937 participants | Vitamin D, calcium, or combined supplementation; 800-1000 IU/day vs. >1000 IU/day; vs. Placebo, no treatment           |
| <sup>6</sup> Thanapluetiwong et al. 2020 | meta-analysis · 58,424 participants | Vitamin D supplement, partly with calcium; vs. Placebo or control in RCTs                                              |

| STUDY                                  | DESIGN · PARTICIPANTS                   | PREPARATION · DOSE · DURATION · COMPARISON                                                                       |
|----------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <sup>7</sup> Cong et al. 2025          | meta-analysis · 43,869 participants     | vitamin D plus calcium; vs. control/placebo                                                                      |
| <sup>8</sup> Migliorini et al. 2025    | systematic review · 43,397 participants | Vitamin D and/or calcium supplementation; mean 92.8 ± 228.7 IU vitamin D and 833.6 ± 224.0 mg calcium daily      |
| <sup>10</sup> Torres-Lopez et al. 2025 | meta-analysis · 23,211 participants     | vitamin D supplements; ≤1000 IU/day vs. >1000 IU/day, daily or intermittent; ≤12 months vs. >12 months; vs. plac |
| <sup>16</sup> Yang et al. 2021         | meta-analysis · 11,890 participants     | Vitamin D (DMOAD class); at least 12 months follow-up; vs. other DMOAD classes or control                        |
| <sup>50</sup> Nguyen et al. 2023       | meta-analysis · 966 participants        | Vitamin D supplementation (ergocalciferol or cholecalciferol); 400 to 7000 IU/d; higher dose 1600-4000 IU/d vs.  |

Further studies in this area: [56](#) [64](#) [77](#) [80](#) [83](#) [94](#) [95](#) [104](#) [112](#) [116](#) [117](#) [119](#) [121](#) [122](#) [143](#) [145](#) [148](#) [151](#) [152](#) [157](#) [160](#) [170](#) [179](#) [181](#) [185](#) [204](#) [216](#) [227](#) [235](#) [236](#) [243](#) [254](#) [266](#) [267](#) [268](#) [270](#) [273](#) [278](#) [279](#) [286](#) [289](#) [297](#) [302](#) [312](#) [315](#) [316](#) [332](#)

Vitamin D, Blood Sugar and Metabolism: Human Studies

In adults with type 2 diabetes and in women with polycystic ovary syndrome, several controlled studies showed improvements in fasting glucose, HbA1c and insulin resistance under oral vitamin D3 (cholecalciferol) <sup>3660261</sup>. Markers of beta cell function such as C-peptide and HOMA-β developed more favorably compared with the control in type 2 diabetes, prediabetes and newly detected type 1 diabetes in children <sup>241299301</sup>. Under ergocalciferol, by contrast, stimulated C-peptide in young people with new type 1 diabetes remained without a difference <sup>280</sup>. In contrast, the large randomized studies in adults without diabetes found no difference in newly occurring type 2 diabetes <sup>8990</sup>. In healthy people, HbA1c, lipoproteins and BMI remained without a difference <sup>21</sup>. In fatty liver disease, there was no difference in insulin resistance, fasting glucose and fasting insulin <sup>62</sup>. In adult men with type 2 diabetes, insulin resistance, fasting glucose, insulin, HbA1c and lipid profile remained without a difference <sup>298</sup>. In several studies, supplementation raised the vitamin D level in the blood <sup>27215280299</sup>. Investigated were predominantly oral vitamin D3 preparations, sometimes vitamin D2 (ergocalciferol). In women with polycystic ovary syndrome, insulin resistance and fasting glucose improved in a meta-analysis, more strongly with metformin than under vitamin D alone <sup>52</sup>. One study compared low and higher dosed vitamin D3 with calcium citrate and found no difference between the doses for markers of insulin resistance <sup>154</sup>. Vitamin D3 together with whey protein and strength training resulted in no difference in HbA1c and insulin resistance <sup>163</sup>. It remains open which patient groups and which dose or form actually benefit, since the results are inconsistent between populations and measured variables.

| STUDY                                 | DESIGN · PARTICIPANTS                   | PREPARATION · DOSE · DURATION · COMPARISON                                                    | RESULT                 |
|---------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------|------------------------|
| <sup>17</sup> Hsu et al. 2026         | systematic review · 11,600 participants | Vitamin D supplements (form not reported); vs. Placebo or control in included RCTs            | CRP in abnormal gluc   |
| <sup>20</sup> Kretschmer et al. 2025  | meta-analysis · 4,478 participants      | oral vitamin D supplementation; study duration 0.5 to 5 years, at least 6 months; vs. placebo | Regression to normal   |
| <sup>21</sup> Goswami et al. 2025     | systematic review · 4,415 participants  | Vitamin D for prophylaxis; 1000 IU or 5000 IU; 4 to 16 weeks; vs. Placebo or lower dose       | Hemoglobin-A1c, lip    |
| <sup>23</sup> Martinekova et al. 2025 | meta-analysis · 4,084 participants      | Vitamin D supplementation; 6 to 12 months follow-up; vs. Control group without vitamin D      | HOMA-IR: improved (    |
| <sup>27</sup> Gong et al. 2025        | meta-analysis · 3,460 participants      | Vitamin D supplementation; 500 IU to 60,000 IU; 3 to 12 months; vs. Control group             | Serum 25(OH)D: impr    |
| <sup>35</sup> Hu et al. 2023          | meta-analysis · 2,362 participants      | Vitamin D as nutritional supplement; vs. Placebo and other nutritional supplements            | Total cholesterol (TC) |
| <sup>36</sup> M et al. 2026           | meta-analysis · 2,000 participants      | Vitamin D supplementation; vs. Placebo or control in randomized trials                        | HbA1c: improved (MC    |
| <sup>51</sup> Liu et al. 2026         | meta-analysis · 962 participants        | vitamin D supplementation; higher daily doses, particularly up to 5,000 IU/day; vs. placebo   | BMI, weight, and IL-6  |

Further studies in this area: [52](#) [60](#) [62](#) [66](#) [71](#) [73](#) [77](#) [78](#) [89](#) [90](#) [128](#) [149](#) [150](#) [154](#) [157](#) [163](#) [175](#) [176](#) [180](#) [187](#) [205](#) [215](#) [216](#) [224](#) [236](#) [238](#) [241](#) [261](#) [263](#) [264](#) [265](#) [276](#) [278](#) [279](#) [280](#) [291](#) [298](#) [299](#) [301](#) [323](#) [330](#) [337](#) [339](#)

Vitamin D, Heart, Circulation and Blood Pressure: Human Studies

For heart, circulation and blood pressure, results without a difference predominate. Several controlled studies found no change in blood pressure under vitamin D <sup>2190107157187228</sup>. Cardiovascular mortality also remained unchanged in several controlled studies <sup>86109139</sup>. One meta-analysis showed a lower frequency of postoperative atrial fibrillation in patients after coronary bypass surgery <sup>58</sup>. Individual blood lipid values improved in reviews in type 2 diabetes and diabetic kidney disease <sup>363977</sup>, but not in overweight children and adolescents <sup>73</sup>. The evidence is overall high, since numerous controlled studies and meta-analyses are available. It remains open whether certain groups or dosages do benefit.

| STUDY                             | DESIGN · PARTICIPANTS                  | PREPARATION · DOSE · DURATION · COMPARISON                                                                                 |
|-----------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <sup>1</sup> An et al. 2022       | meta-analysis · 883,627 participants   | Vitamin D supplementation; vs. Control group without vitamin D                                                             |
| <sup>3</sup> Fu et al. 2022       | meta-analysis · 86,202 participants    | Vitamin D supplements (cholecalciferol, ergocalciferol, calcifediol); various dosages, subgroup analysis; various follow-u |
| <sup>21</sup> Goswami et al. 2025 | systematic review · 4,415 participants | Vitamin D for prophylaxis; 1000 IU or 5000 IU; 4 to 16 weeks; vs. Placebo or lower dose                                    |
| <sup>32</sup> Pilkey et al. 2023  | systematic review · 2,489 participants | native vitamin D (D2/D3); mostly short follow-up; vs. control/placebo in randomized trials                                 |
| <sup>36</sup> M et al. 2026       | meta-analysis · 2,000 participants     | Vitamin D supplementation; vs. Placebo or control in randomized trials                                                     |
| <sup>39</sup> Lu et al. 2024      | meta-analysis · 1,711 participants     | Vitamin D supplementation; higher doses more favorable (subgroup analysis); shorter intervention more favorable (subg      |
| <sup>58</sup> Nisa et al. 2026    | meta-analysis · 694 participants       | Vitamin D supplementation; vs. Placebo or control                                                                          |
| <sup>59</sup> Ashraf et al. 2025  | meta-analysis · 694 participants       | Vitamin D supplementation; vs. Control/placebo in 4 randomized trials                                                      |

Further studies in this area: [66](#) [73](#) [77](#) [86](#) [90](#) [107](#) [109](#) [126](#) [129](#) [139](#) [143](#) [150](#) [157](#) [160](#) [167](#) [176](#) [187](#) [203](#) [214](#) [215](#) [219](#) [227](#) [228](#) [234](#) [260](#) [261](#) [263](#) [264](#) [270](#) [276](#) [278](#) [279](#) [288](#) [313](#) [320](#) [321](#)

### Vitamin D, Mood and Depression: Human Studies

In adults with diagnosed depression, vitamin D improved depressive symptoms compared with placebo in one meta-analysis and one controlled study <sup>51150</sup>. In women with premenstrual syndrome, vitamin D supplementation improved depression, but not anxiety <sup>74</sup>. In adults with type 2 diabetes and depressive symptoms, cholecalciferol lowered the depression score more strongly than placebo <sup>241</sup>. In perimenopausal women with vitamin D deficiency, cholecalciferol improved mood <sup>208</sup>. In children with ADHD, vitamin D3 plus magnesium improved emotional problems <sup>249251</sup>. In the same group, vitamin D3 plus magnesium improved anxiety and shyness <sup>250</sup>. Vitamin D3 together with zinc improved depressive symptoms in overweight adults <sup>182</sup>. In children with autism spectrum disorder, vitamin D reduced irritability and hyperactivity compared with placebo <sup>200</sup>. In contrast, a large randomized controlled study with vitamin D3 over several years found no difference in the frequency of newly occurring major depressive disorder <sup>96</sup>. A randomized controlled study with cholecalciferol in addition to depression treatment found no difference in the MADRS score <sup>140</sup>. In adolescents with vitamin D deficiency and depressive symptoms, vitamin D showed an advantage on only one of three depression scales; the inflammation marker CRP did not change this <sup>220</sup>. In adults with chronic spinal cord injury, anxiety and depression remained without a difference under vitamin D3 <sup>273</sup>. A systematic review on native vitamin D (D2/D3) saw no difference in patient-reported well-being in adults with end-stage renal failure <sup>32</sup>. The studies are often small and differ in dose, form and population. Vitamin D did not change the serotonin level in the blood in one meta-analysis <sup>79</sup>.

| STUDY                                             | DESIGN · PARTICIPANTS                      | PREPARATION · DOSE · DURATION · COMPARISON                                                                       |
|---------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <sup>12</sup> Park et al. 2026                    | systematic review · 18,628 participants    | Vitamin D supplementation; 2,000 IU daily to 50,000 IU weekly; 6 months to 5.3 years; vs. Placebo or control     |
| <sup>32</sup> Pilkey et al. 2023                  | systematic review · 2,489 participants     | native vitamin D (D2/D3); mostly short follow-up; vs. control/placebo in randomized trials                       |
| <sup>51</sup> Liu et al. 2026                     | meta-analysis · 962 participants           | vitamin D supplementation; higher daily doses, particularly up to 5,000 IU/day; vs. placebo                      |
| <sup>74</sup> Zainab et al. 2026                  | meta-analysis · 436 participants           | Vitamin D supplementation; vs. Placebo or standard care                                                          |
| <sup>79</sup> Alimohammadi-Kamalabadi et al. 2024 | meta-analysis · 356 participants           | Vitamin D supplementation; some below 4000 IU/day; some 10 weeks or longer; vs. control group                    |
| <sup>96</sup> Ahl et al. 2026                     | randomised controlled · 2,434 participants | Vitamin D3; 1600 IU/day or 3200 IU/day; 5 years supplementation, follow-up until end of 2021; vs. Placebo        |
| <sup>140</sup> Mikola et al. 2026                 | randomised controlled · 281 participants   | Vitamin D (cholecalciferol) as adjunct to existing depression treatment; 100 µg (4000 IU) daily versus 10 µg (40 |

| STUDY                            | DESIGN · PARTICIPANTS                    | PREPARATION · DOSE · DURATION · COMPARISON                                     |
|----------------------------------|------------------------------------------|--------------------------------------------------------------------------------|
| <sup>150</sup> Porto et al. 2025 | randomised controlled · 224 participants | vitamin D supplementation; 50,000 IU per week; six months; vs. placebo (n=112) |

Further studies in this area: [182](#) [187](#) [200](#) [202](#) [208](#) [220](#) [232](#) [241](#) [249](#) [250](#) [251](#) [257](#) [273](#) [315](#)

### Vitamin D, Pregnancy and Children: Human Studies

A review with meta-analysis found less gestational diabetes and a somewhat higher birth weight <sup>85</sup>. With cholecalciferol, spontaneous vaginal births occurred more often because instrumental delivery was less frequent <sup>101</sup>. For preeclampsia, two meta-analyses found a lower risk <sup>3382</sup>. Another review and a controlled study saw no difference there <sup>85107</sup>. For gestational hypertension, no difference was shown <sup>107</sup>, as was also the case for prematurity <sup>85101</sup>. The results depend on form, dose and baseline levels, and many studies were small.

| STUDY                                 | DESIGN · PARTICIPANTS                      | PREPARATION · DOSE · DURATION · COMPARISON                                                                          |
|---------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <sup>17</sup> Hsu et al. 2026         | systematic review · 11,600 participants    | Vitamin D supplements (form not reported); vs. Placebo or control in included RCTs                                  |
| <sup>19</sup> Shi et al. 2026         | meta-analysis · 10,262 participants        | Combined supplement with magnesium, zinc, calcium and vitamin D; vs. Standard control                               |
| <sup>33</sup> Kokkinari et al. 2025   | meta-analysis · 2,461 participants         | Vitamin D supplementation during pregnancy; heterogeneous, not specified; not reported; vs. no supplementation      |
| <sup>76</sup> Saha et al. 2020        | meta-analysis · 380 participants           | Vitamin D containing supplements; vs. Placebo                                                                       |
| <sup>82</sup> Wang et al. 2026        | meta-analysis                              | Oral nutritional supplements, including vitamin D; vs. Placebo and calcium                                          |
| <sup>85</sup> Yang et al. 2025        | systematic review                          | Vitamin D supplements; Median 2000 IU/day (range 400-60 000); vs. Placebo, no intervention, or active control (     |
| <sup>99</sup> Subramanian et al. 2025 | randomised controlled · 1,298 participants | Vitamin D3 supplement; 4200, 16,800 or 28,000 IU per week; from mid-pregnancy until birth; vs. placebo              |
| <sup>101</sup> Moon et al. 2023       | randomised controlled · 965 participants   | Cholecalciferol 1000 IU/day; 1000 IU daily; from 14 weeks' gestation until delivery; vs. placebo, double-blind rand |

Further studies in this area: [103](#) [106](#) [107](#) [133](#) [149](#) [175](#) [183](#) [198](#) [311](#) [323](#) [325](#) [331](#)

### Vitamin D and Autoimmune Diseases: Human Studies

In systemic lupus erythematosus, vitamin D reduced disease activity and improved complement values C3 and C4 in a meta-analysis <sup>55</sup>. In rheumatoid arthritis, disease activity and pain decreased compared with the control group <sup>211</sup>. In clinically isolated syndrome, an early form of multiple sclerosis, cholecalciferol reduced MRI activity and new lesions compared with placebo, but not relapses <sup>132</sup>. A meta-analysis in multiple sclerosis found a lower annual relapse rate only at low to medium dose, with no overall difference <sup>49</sup>. A systematic review of vitamin D3 and/or vitamin D2 saw protection against autoimmune reactions <sup>21</sup>. In a large placebo-controlled study, vitamin D reduced the number of confirmed autoimmune diseases over five years, while omega-3 fatty acids alone did not significantly <sup>305</sup>. These are contrasted by results showing no difference: The EDSS score remained unchanged in the MS meta-analysis <sup>49</sup>. In lupus, no differences were shown in erythrocyte sedimentation rate and anti-dsDNA levels <sup>55</sup>. Another lupus meta-analysis found no difference in either the disease activity index or anti-dsDNA positivity <sup>70</sup>. The evidence is strong, but the studies tested different forms and doses, and the participant numbers of the individual controlled studies remain partly small <sup>132211</sup>.

| STUDY                                | DESIGN · PARTICIPANTS                    | PREPARATION · DOSE · DURATION · COMPARISON                                                                          |
|--------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <sup>21</sup> Goswami et al. 2025    | systematic review · 4,415 participants   | Vitamin D for prophylaxis; 1000 IU or 5000 IU; 4 to 16 weeks; vs. Placebo or lower dose                             |
| <sup>49</sup> Zhang et al. 2025      | meta-analysis · 1,078 participants       | Vitamin D supplementation; low/medium dose vs. high dose (subgroups); vs. intervention group vs. control group      |
| <sup>55</sup> Lu et al. 2026         | meta-analysis · 847 participants         | Vitamin D supplementation; vs. Control group (placebo/standard care)                                                |
| <sup>70</sup> Zheng et al. 2019      | meta-analysis · 490 participants         | Vitamin D supplementation; vs. Placebo                                                                              |
| <sup>132</sup> Thouvenot et al. 2025 | randomised controlled · 316 participants | oral cholecalciferol 100 000 IU vs placebo; 100 000 IU every 2 weeks; 24 months; vs. placebo, double-blind randomiz |

| STUDY                              | DESIGN · PARTICIPANTS                    | PREPARATION · DOSE · DURATION · COMPARISON                                                                        |
|------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <sup>211</sup> Rexhepi et al. 2025 | randomised controlled · 100 participants | Vitamin D 4000 IU/day; 4000 IU/day; 6 months; vs. RA patients without vitamin D supplementation                   |
| <sup>305</sup> Hahn et al. 2022    | randomised controlled                    | Vitamin D (2000 IU/day) or placebo, plus omega 3 fatty acids or placebo; 2000 IU/day vitamin D; 1000 mg/day omega |
| <sup>335</sup> Basti et al. 2026   | cohort study · 101 participants          | Vitamin D3 supplementation; increase by 1000 IU/day, maximum 2000 IU/day; 12 months; vs. patients with low vs nor |

### Vitamin D and Muscle Strength: Human Studies

In adults with chronic intestinal failure and vitamin D deficiency, intramuscularly administered ergocalciferol (vitamin D2) improved handgrip strength, 6-meter walking speed and skeletal muscle mass index <sup>300</sup>. Children of mothers who received daily cholecalciferol during pregnancy had more lean mass at primary school age than after placebo <sup>116</sup>. Together with exercise training, knee extension strength increased compared with training alone in a meta-analysis, and handgrip strength increased in older adults <sup>40</sup>. A review found better values on the Short Physical Performance Battery and stair climbing <sup>42</sup>. In older people with sarcopenia, vitamin D3 in addition to thermotherapy and strength training improved muscle mass and handgrip strength <sup>180</sup>. In contrast, several controlled studies found no difference in hand and grip strength with administration of cholecalciferol or ergocalciferol alone <sup>178217273</sup>, and vitamin D3 together with omega-3 fatty acids also did not change grip strength, walking speed and functional tests <sup>100</sup>. The evidence is moderate; the results depend strongly on the form, the combination with training or protein and the group studied; whether supplementation alone, without accompanying measures, increases muscle strength remains open.

| STUDY                                 | DESIGN · PARTICIPANTS                      | PREPARATION · DOSE · DURATION · COMPARISON                                                                     |
|---------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <sup>32</sup> Pilkey et al. 2023      | systematic review · 2,489 participants     | native vitamin D (D2/D3); mostly short follow-up; vs. control/placebo in randomized trials                     |
| <sup>37</sup> Serag et al. 2025       | meta-analysis · 1,903 participants         | Vitamin D supplements as add-on therapy; Subgroup analysis: treatment longer than 12 months; vs. Controls      |
| <sup>40</sup> Kazeminasab et al. 2025 | meta-analysis · 1,675 participants         | vitamin D plus exercise; vitamin D dose in IU/wk, variable; vs. exercise alone                                 |
| <sup>42</sup> Zhang et al. 2025       | systematic review · 1,483 participants     | Vitamin D3 supplementation combined with exercise training; vs. Exercise intervention alone                    |
| <sup>63</sup> Chang et al. 2023       | meta-analysis · 637 participants           | Whey protein, leucine, and vitamin D; vs. Control group without nutritional supplementation                    |
| <sup>100</sup> Chou et al. 2024       | randomised controlled · 1,054 participants | Vitamin D3 (cholecalciferol) and/or marine omega-3 fatty acids vs placebo; 2000 IU/day vitamin D3; 1 g/day ome |
| <sup>116</sup> Moon et al. 2024       | randomised controlled · 454 participants   | Cholecalciferol 1000 IU/d or placebo; 1000 IU per day; from 14-17 wk gestation until delivery; vs. Placebo     |
| <sup>163</sup> Miller et al. 2021     | randomised controlled · 198 participants   | Whey protein plus vitamin D3, with progressive resistance training; 20 g whey protein each morning and postexe |

Further studies in this area: <sup>173 176 178 180 189 201 214 217 238 248 263 264 273 295 300 312</sup>

### Vitamin D, Cancer Risk and Course: Human Studies

In cancer diseases, a mixed picture emerges: A randomized controlled study in patients with advanced cervical cancer undergoing radiotherapy found a higher rate of complete remissions with cholecalciferol <sup>190</sup>, and another randomized controlled study in women with breast cancer before neoadjuvant chemotherapy reports pathological complete remission more often <sup>231</sup>. In curatively resected gastrointestinal tumors, cholecalciferol improved recurrence-free survival in subgroups with low parathyroid hormone levels, while no difference occurred in the group with high parathyroid hormone levels <sup>123</sup>; in digestive tract cancer, the effect on recurrence or death depended on vitamin A levels, with benefit at medium levels and disadvantage at the lowest levels <sup>130</sup>. In contrast, the largest randomized controlled study in older adults found no difference in cancer incidence <sup>91</sup>, and in curatively resected cutaneous melanoma, cholecalciferol showed no advantage in either recurrence-free survival or melanoma mortality <sup>118</sup>. The evidence is overall low: The controlled studies are mostly small, concern different tumor types and treatment situations, and the positive findings come predominantly from subgroup or single studies; cholecalciferol was mostly studied as a capsule or tablet, sometimes daily, sometimes as a single dose. It remains open whether and for which tumor types and baseline levels administration actually helps.

| STUDY                           | DESIGN · PARTICIPANTS                       | PREPARATION · DOSE · DURATION · COMPARISON                             |
|---------------------------------|---------------------------------------------|------------------------------------------------------------------------|
| <sup>91</sup> Neale et al. 2025 | randomised controlled · 21,308 participants | Vitamin D3 or placebo; 60,000 IU per month; up to 5 years; vs. placebo |

| STUDY                              | DESIGN · PARTICIPANTS                    | PREPARATION · DOSE · DURATION · COMPARISON                                                                          |
|------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <sup>118</sup> De et al. 2024      | randomised controlled · 436 participants | Cholecalciferol (vitamin D3); 100 000 IU monthly; minimum 6, maximum 42 months; median follow-up 52 months; vs      |
| <sup>123</sup> Sasaki et al. 2026  | randomised controlled · 410 participants | Vitamin D3 versus placebo; 2000 IU/day; maximum follow-up 7.5 years; vs. placebo, randomized double-blind           |
| <sup>130</sup> Kohmura et al. 2026 | randomised controlled · 363 participants | Vitamin D3 supplementation versus placebo; 5-year relapse-free survival; vs. Placebo                                |
| <sup>190</sup> Suardi et al. 2025  | randomised controlled · 123 participants | Cholecalciferol; 10 000 IU daily; 7 weeks during and 12 weeks after radiotherapy; vs. Placebo plus same radiotherap |
| <sup>231</sup> Omodei et al. 2025  | randomised controlled · 80 participants  | Cholecalciferol 2,000 IU daily vs. placebo; 2,000 IU daily; 6 months; vs. placebo                                   |
| <sup>237</sup> Tirgar et al. 2024  | randomised controlled · 76 participants  | Vitamin D alone, synbiotics alone, or their combination vs. placebo; four months; vs. Placebo                       |
| <sup>321</sup> Yao et al. 2026     | cohort study · 3,995 participants        | serum 25-hydroxyvitamin D levels (no supplementation); median follow-up 12.2 years (0.2-16.3); vs. sufficient versu |

Vitamin D: Further Outcomes in Studies

In this area, numerous controlled studies and meta-analyses investigated very different outcome measures; the evidence is strong, but the results vary widely depending on the outcome. The storage form 25(OH)D in blood reliably increased, for example in meta-analyses in multiple sclerosis, lupus and fatty liver disease <sup>495562</sup>. In diabetic foot ulcer, wounds healed more often than with control in a meta-analysis <sup>66</sup>. Calcium, phosphate and urinary calcium values remained without difference between the groups in several studies <sup>64119174204</sup>; in two studies, serum calcium increased <sup>149267</sup>. Cholecalciferol (vitamin D3), ergocalciferol (vitamin D2) and calcifediol were predominantly studied as a capsule, tablet, drops or injection. It remains open which dose, form and treatment duration is actually of benefit for which patient group, since the studies included very different populations and comparison groups.

| STUDY                                  | DESIGN · PARTICIPANTS                   | PREPARATION · DOSE · DURATION · COMPARISON                                                                           |
|----------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <sup>7</sup> Cong et al. 2025          | meta-analysis · 43,869 participants     | vitamin D plus calcium; vs. control/placebo                                                                          |
| <sup>8</sup> Migliorini et al. 2025    | systematic review · 43,397 participants | Vitamin D and/or calcium supplementation; mean 92.8 ± 228.7 IU vitamin D and 833.6 ± 224.0 mg calcium daily; me      |
| <sup>11</sup> Meng et al. 2025         | meta-analysis · 19,586 participants     | Vitamin D supplementation; vs. Placebo or standard treatment                                                         |
| <sup>13</sup> Wang et al. 2025         | meta-analysis · 18,372 participants     | Oral vitamin D supplementation; Daily low-dose ≤ 1000 IU/day vs. higher doses; vs. Placebo or no treatment           |
| <sup>14</sup> Liu et al. 2025          | meta-analysis · 15,677 participants     | Vitamin D supplementation; vs. Placebo                                                                               |
| <sup>15</sup> Matukaitienė et al. 2025 | systematic review · 13,000 participants | Vitamin D (level measurement or supplementation); vs. Men with mild vs. moderate-to-severe or arteriogenic ED; su    |
| <sup>17</sup> Hsu et al. 2026          | systematic review · 11,600 participants | Vitamin D supplements (form not reported); vs. Placebo or control in included RCTs                                   |
| <sup>18</sup> Patchen et al. 2025      | systematic review · 10,611 participants | vitamin D (form not specified); 200 IU/day to 100,000 IU bolus quarterly; 28 days to two years; vs. placebo/no suppl |

Further studies in this area: <sup>21 22 23 25 26 29 30 32 34 37 38 40 41 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 61 62 64 65 66 67 68 69 70 71 72 74 77 78 81 86 87 88 92 93 94 95 98 103 105 110 111 113 114 115 117 118 119 120 124 125 127 129 131 134 135 136 137 138 139 141 142 143 144 145 146 149 150 153 155 157 158 160 161 162 164 165 166 168 169 170 171 172 174 175 176 177 178 180 181 182 184 185 186 187 188 189 190 192 193 194 195 196 197 199 200 201 204 205 206 207 208 209 210 211 212 213 214 216 217 218 219 221 222 223 224 225 226 227 228 229 230 231 232 233 236 239 240 241 242 244 245 246 247 248 249 250 251 252 253 254 255 256 258 259 260 261 263 264 265 267 268 270 271 272 273 274 275 276 277 279 281 282 283 284 285 287 288 290 291 293 294 295 296 297 298 299 300 301 302 303 304 306 307 308 309 310 311 312 314 315 317 318 319 322 324 329 332 333 334 338</sup>

#### 4. How Is Vitamin D Dosed? Preparation, Dose and Duration in Studies

The studies used predominantly oral preparations with cholecalciferol (vitamin D3) and ergocalciferol (vitamin D2), sometimes calcifediol, as a capsule, tablet, drops or injection. Some studies tested vitamin D together with calcium, vitamin K2, omega-3 fatty acids, magnesium, zinc or probiotics. The doses and intake schedules are shown in the table.

| PREPARATION OR FORM                                                       | DOSE                                        | DURATION                                             | STUDY |
|---------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|-------|
| Vitamin D3 (cholecalciferol), 2000 IU/day, vs. placebo                    | 2000 IU/day                                 | median follow-up 5.3 years                           | 89    |
| oral vitamin D3, monthly dose                                             | 60,000 IU monthly                           | median 4.6 years follow-up                           | 90    |
| Vitamin D3 or placebo                                                     | 60,000 IU per month                         | up to 5 years                                        | 91    |
| Vitamin D (2000 IU/day) and/or omega-3 (1 g/day)                          | 2000 IU vitamin D daily; 1 g omega-3 daily  | median 5.3 years                                     | 92    |
| Vitamin D (60,000 IU) or placebo monthly                                  | 60,000 IU per month                         | up to 5 years, assessed at 3 years                   | 93    |
| Vitamin D3 (cholecalciferol)                                              | 1600 IU/day or 3200 IU/day                  | 5 years                                              | 94    |
| Vitamin D3                                                                | 1600 IU/day or 3200 IU/day                  | 5 years supplementation, 7.3 years follow-up         | 95    |
| Vitamin D3                                                                | 1600 IU/day or 3200 IU/day                  | 5 years supplementation, follow-up until end of 2021 | 96    |
| oral vitamin D3                                                           | 9600 IU/d for 2 d, then 3200 IU/d for 4 wk  | 4 weeks                                              | 97    |
| Vitamin D3 2000 IU/d, partly combined with omega-3 fatty acids 1 g/d      | 2000 IU vitamin D3 daily; 1 g omega-3 daily | 5 years                                              | 98    |
| Vitamin D3 supplement                                                     | 4200, 16,800 or 28,000 IU per week          | from mid-pregnancy until birth                       | 99    |
| Vitamin D3 (cholecalciferol) and/or marine omega-3 fatty acids vs placebo | 2000 IU/day vitamin D3; 1 g/day omega-3     | 2 years                                              | 100   |
| Cholecalciferol 1000 IU/day                                               | 1000 IU daily                               | from 14 weeks' gestation until delivery              | 101   |
| Oral vitamin D (cholecalciferol)                                          | 4000 or 10,000 IU/day versus 400 IU/day     | up to 9 months                                       | 102   |
| Vitamin D 4000 IU/day or placebo                                          | 4000 IU/day                                 | up to 90 days until trigger day                      | 103   |

#### 5. Is Vitamin D Safe? Side Effects in Studies

Two meta-analyses found no more adverse events under vitamin D than under placebo, nor more cases of hypercalcemia <sup>1464</sup>. One review warns that very high doses can lead to hypercalcemia <sup>21</sup>.

| STUDY                               | REPORTED SIDE EFFECTS                                                      |
|-------------------------------------|----------------------------------------------------------------------------|
| <sup>8</sup> Migliorini et al. 2025 | vitamin D associated with fewer gastrointestinal adverse events            |
| <sup>11</sup> Meng et al. 2025      | similar safety profiles between the two groups                             |
| <sup>13</sup> Wang et al. 2025      | Fewer serious adverse events, RR = 0.83, 95% CI: 0.71 to 0.96              |
| <sup>14</sup> Liu et al. 2025       | Serious adverse events comparable to placebo; none attributed to vitamin D |
| <sup>18</sup> Patchen et al. 2025   | evidence on adverse events very uncertain                                  |
| <sup>21</sup> Goswami et al. 2025   | Concern for hypercalcemia at high doses mentioned                          |
| <sup>24</sup> Jolliffe et al. 2025  | not reported                                                               |
| <sup>26</sup> Zhou et al. 2024      | Vitamin D among three safest (SUCRA 0.19)                                  |
| <sup>27</sup> Gong et al. 2025      | similar to control (RR 1.19; 95% CI 0.79 to 1.80)                          |
| <sup>32</sup> Pilkey et al. 2023    | safe and well-tolerated                                                    |
| <sup>33</sup> Kokkinari et al. 2025 | not reported                                                               |
| <sup>43</sup> Chen et al. 2025      | adverse events comparable (RR 1.02, 95% CI 0.94-1.10)                      |

## 6. What Remains Open: Limits of the Evidence

- The results depend strongly on form, dose and baseline levels, so it remains unclear which groups and dosages benefit.
- Many controlled studies were small or short, which limits their informative value.
- With combination preparations, the contribution of vitamin D alone often cannot be separated out.
- For cancer diseases, the strength of evidence is low, since the studies are mostly small and concern different tumor types.
- It remains open whether supplementation alone, without accompanying measures such as training or protein, increases muscle strength.

## 7. Bottom Line: What Is Established About Vitamin D

In human studies, vitamin D shows a broad spectrum of effects. Controlled studies and meta-analyses found improvements above all in depressive symptoms, disease activity of autoimmune diseases, asthma attacks in children and inflammation markers. Muscle strength mostly increased only together with training. For bones, metabolism, heart and cancer, the results are mixed or predominantly without a difference, for example for blood pressure, falls and cancer incidence. The strength of evidence is overall high, but the results depend strongly on form, dose and population, and many studies were small or short.

## Frequently Asked Questions

### How well has Vitamin D been studied in humans?

We evaluated 339 human studies on Vitamin D, including 228 randomised controlled trials and 88 meta-analyses or systematic reviews; the controlled studies include 142,839 participants in total. As of 3 October 2026.

### Does Vitamin D help with infections and immune system? What the studies show

We evaluated 19 meta-analyses or systematic reviews, 40 controlled studies and 6 further studies; the controlled studies include 7,232 participants in total. Result of the controlled studies: mostly improved. Strength of evidence under our published rules: high. Sources: [291113](#)

### Does Vitamin D help with bones, falls and fractures? What the studies show

We evaluated 6 meta-analyses or systematic reviews, 41 controlled studies and 8 further studies; the controlled studies include 11,754 participants in total. Result of the controlled studies: mixed. Strength of evidence under our published rules: high. Sources: [4567](#)

### Does Vitamin D help with blood sugar and metabolism? What the studies show

We evaluated 14 meta-analyses or systematic reviews, 31 controlled studies and 6 further studies; the controlled studies include 46,556 participants in total. Result of the controlled studies: mixed. Strength of evidence under our published rules: high. Sources: [17202123](#)

### Does Vitamin D help with heart, circulation and blood pressure? What the studies show

We evaluated 11 meta-analyses or systematic reviews, 30 controlled studies and 3 further studies; the controlled studies include 26,146 participants in total. Result of the controlled studies: mostly no difference. Strength of evidence under our published rules: high. Sources: [132132](#)

### Does Vitamin D help with mood and depression? What the studies show

We evaluated 5 meta-analyses or systematic reviews and 17 controlled studies; the controlled studies include 4,067 participants in total. Result of the controlled studies: mostly improved. Strength of evidence under our published rules: high. Sources: [12325174](#)

### Does Vitamin D help with pregnancy and children? What the studies show

We evaluated 5 meta-analyses or systematic reviews, 10 controlled studies and 5 further studies; the controlled studies include 5,476 participants in total. Result of the controlled studies: mixed. Strength of evidence under our published rules: high. Sources: [17193376](#)

### Which forms of vitamin D were investigated in the studies?

The studies used predominantly oral preparations with cholecalciferol (vitamin D3) and ergocalciferol (vitamin D2), sometimes calcifediol. Some studies tested vitamin D together with calcium, vitamin K2, omega-3 fatty acids, magnesium, zinc or probiotics. The exact doses and forms are shown in the table.

**Do human studies show an effect on the immune system?**

For COVID-19, mortality under vitamin D was lower in two meta-analyses and one controlled study, but not robust in one meta-analysis<sup>3153225</sup>. In children with asthma, severe attacks decreased<sup>46191</sup>, but overall vitamin D did not prevent respiratory infections in children<sup>1324134</sup>.

**What do studies show about bones and falls?**

Children whose mothers received cholecalciferol during pregnancy had higher bone density at primary school age than after placebo<sup>116</sup>. In children and young adults with HIV, a relatively high daily dose improved bone density in a meta-analysis<sup>50</sup>. For falls in independently living older people, one meta-analysis and two controlled studies found no difference<sup>1094145</sup>. Three meta-analyses, by contrast, found fewer falls, depending on dose, daily administration and baseline levels<sup>456</sup>. Fewer bone fractures appeared in one meta-analysis only when vitamin D was given together with calcium<sup>6</sup>.

**How safe is vitamin D?**

Two meta-analyses found no more adverse events under vitamin D than under placebo, nor more cases of hypercalcemia<sup>1464</sup>. One review warns that very high doses can lead to hypercalcemia<sup>21</sup>. In one study, kidney stones occurred in some of the participants, without a clear difference between the groups<sup>98</sup>.

**Are there limitations of the studies?**

The results depend strongly on form, dose and baseline levels, so it remains unclear which groups and dosages benefit. Many controlled studies were small or short. With combination preparations, the contribution of vitamin D alone often cannot be separated out. For cancer diseases, the strength of evidence is low.

## Sources

- 1 **Micronutrient Supplementation to Reduce Cardiovascular Risk**  
An P, Wan S, Luo Y, Luo J, Zhang X, Zhou S et al. · 2022
- 2 **Low vitamin D levels do not aggravate COVID-19 risk or death, and vitamin D supplementation does not improve outcomes in hospitalized patients with COVID-19: a meta-analysis and GRADE assessment of cohort studies and RCTs**  
Chen J, Mei K, Xie L, Yuan P, Ma J, Yu P et al. · 2021
- 3 **Vitamin D supplementation and risk of stroke: A meta-analysis of randomized controlled trials**  
Fu J, Sun J, Zhang C · 2022
- 4 **Association Between Vitamin D Supplementation and Fall Prevention**  
Wei FL, Li T, Gao QY, Huang Y, Zhou CP, Wang W et al. · 2022
- 5 **Effect of vitamin D, calcium, or combined supplementation on fall prevention: a systematic review and updated network meta-analysis**  
Tan L, He R, Zheng X · 2024
- 6 **Vitamin D supplement on prevention of fall and fracture: A Meta-analysis of Randomized Controlled Trials**  
Thanapluetiwong S, Chewcharat A, Takkavatakarn K, Praditpornsilpa K, Eiam-Ong S, Susantitaphong P · 2020
- 7 **The effects of combined calcium and vitamin D supplementation on bone mineral density and fracture risk in postmenopausal women with osteoporosis: a systematic review and meta-analysis of randomized controlled trials**  
Cong B, Zhang H · 2025
- 8 **Vitamin D and calcium supplementation in women undergoing pharmacological management for postmenopausal osteoporosis: a level I of evidence systematic review**  
Migliorini F, Maffulli N, Colarossi G, Filippelli A, Memminger M, Conti V · 2025
- 9 **The effect of vitamin D supplementation on antibiotic use: a meta-analysis based on randomized controlled trials**  
Wang M, Wu Y, Xiang Z, Zhang Y, Huang T, Chen B · 2024
- 10 **Efficacy of Vitamin D Supplementation on the Risk of Falls Among Community-Dwelling Older Adults: A Systematic Review and Meta-Analysis**  
Torres-Lopez R, Obradors N, Elosua R, Azagra-Ledesma R, Zwart M · 2025
- 11 **The role of vitamin D in the prevention and treatment of tuberculosis: a meta-analysis of randomized controlled trials**  
Meng J, Li X, Xiong Y, Wu Y, Liu P, Gao S · 2025
- 12 **Effects of vitamin D supplementation on depression in adult women: a systematic review of randomized controlled trials**  
Park BJ, Kim SD · 2026
- 13 **The role of vitamin D in the prevention and treatment of acute respiratory infections in pediatric populations: a systematic review and meta-analysis of randomized controlled trials**  
Wang L, Yu Y, Liu K, Yu X, Li Y · 2025
- 14 **Vitamin D supplementation for tuberculosis prevention: A meta-analysis**  
Liu S, Lin T, Pan Y · 2025
- 15 **The Association Between Vitamin D Levels and Erectile Dysfunction in Men: A Systematic Review**  
Matukaitienė R, Pikelytė A, Žilaitienė B, Lažauskas R, Verkauskienė R, Čeponis J · 2025
- 16 **The Efficacy and Safety of Disease-Modifying Osteoarthritis Drugs for Knee and Hip Osteoarthritis-a Systematic Review and Network Meta-Analysis**  
Yang W, Sun C, He SQ, Chen JY, Wang Y, Zhuo Q · 2021
- 17 **The effects of vitamin D supplementation on inflammatory biomarkers: an umbrella study of meta-analysis on randomized controlled trials**  
Hsu CY, Hussein HY, Al-Akkam KA, Gajjar TB, AlMohamadi H, Khonturaev N et al. · 2026
- 18 **Vitamin D supplementation in pregnant or breastfeeding women or young children for preventing asthma**  
Patchen BK, Best CM, Boiteau J, Solvik BS, Vonderschmidt A, Xu J et al. · 2025
- 19 **Effects of Different Nutritional Strategies on the Prevention and Management of Gestational Diabetes Mellitus: A Systematic Review and Network Meta-Analysis**  
Shi J, Chen K, Tang Y, Ren X, Zhang Y · 2026
- 20 **Effect of Vitamin D on Regression to Normal Glucose Regulation in Adults With Prediabetes**  
Kretschmer PM, Balk EM, Pittas AG · 2025
- 21 **Are there prophylactic effects of vitamin D among healthier adult patients? A systematic review of randomized controlled trials**  
Goswami C, Law S, Zhang H, Park H, Maheta B, Arnott K et al. · 2025
- 22 **Clinical efficacy of different supplemental doses of vitamins A and D in preventing bronchopulmonary dysplasia in preterm infants: A network meta-analysis based on randomized controlled trials**  
Yu Q, Chen X, Chen J, Peng L, Luo K · 2026
- 23 **Role of Vitamin D Supplementation in Chronic Liver Disease: A Systematic Review and Meta-Analysis of Randomized Controlled Trials**  
Martinekova P, Obeidat M, Topala M, Vánca S, Veres DS, Zolcsák Á et al. · 2025
- 24 **Association between maternal vitamin D supplementation during pregnancy and the risk of acute respiratory infections in offspring: a systematic review and meta-analysis**  
Jolliffe DA, Brustad N, Chawes B, Cooper C, D'angelo S, Harvey NC et al. · 2025
- 25 **Effectiveness of perioperative calcium and vitamin D supplementation in preventing post-thyroidectomy hypocalcaemia: network meta-analysis of randomized trials**  
Gkanis V, Papaconstantinou D, Lanitis S, Dafnios N, Papakonstantinou I, Nastos K · 2026
- 26 **Safety and efficacy of antioxidant therapy in children and adolescents with attention deficit hyperactivity disorder: A systematic review and network meta-analysis**  
Zhou P, Yu X, Song T, Hou X · 2024
- 27 **Assessing the potency of vitamin D augmentation on saccharometric indices in type 2 diabetes: a meta-analysis**  
Gong S, Chen L · 2025
- 28 **Prenatal vitamin D supplementation and child respiratory health: A systematic review and meta-analysis of randomized controlled trials**  
Tareke AA, Hadgu AA, Ayana AM, Zerfu TA · 2020
- 29 **Vitamin D supplementation in critically ill patients: a meta-analysis**  
Zheng WH, Shi JH, Yu DX, Huang HB · 2025
- 30 **Micronutrient Supplementation in Frailty: A Systematic Review and Meta-Analysis of Randomized Controlled Trials**  
Paraskevas T, Kotrokois K, Vassilakou T, Halvatsiotis P, Psaltopoulou T, Sarafis P et al. · 2025
- 31 **The impact of vitamin D administration on mortality in COVID-19 patients: a systematic review and meta-analysis of randomized controlled trials**  
Kow CS, Ramachandram DS, Hasan SS, Wong Z, Thiruchelvam K · 2024
- 32 **Does Native Vitamin D Supplementation Have Pleiotropic Effects in Patients with End-Stage Kidney Disease? A Systematic Review of Randomized Trials**  
Plikey NG, Novosel O, Roy A, Wilson TE, Sharma J, Khan S et al. · 2023
- 33 **The Role of Vitamin D Supplementation in Preventing Pre-Eclampsia: A Review of Randomized Controlled Trials with Meta-Analysis**  
Kokkinari A, Antoniou E, Orovou E, Andronikidi PE, Tziritidou-Chatzopoulou M, Sarantaki A et al. · 2025
- 34 **Administration of vitamin D and its metabolites in critically ill adult patients: an updated systematic review with meta-analysis of randomized controlled trials**  
Menger J, Lee ZY, Notz Q, Wallqvist J, Hasan MS, Elke G et al. · 2022
- 35 **Comparison of nutritional supplements in improving glycolipid metabolism and endocrine function in polycystic ovary syndrome: a systematic review and network meta-analysis**  
Hu X, Wang W, Su X, Peng H, Tan Z, Li Y et al. · 2023
- 36 **Vitamin D Supplementation Improves Glycemic Control, Inflammation, and Lipid Profile in Type 2 Diabetes Mellitus: A Systematic Review and Meta-Analysis of Randomized Controlled Trials**  
M M, AU H · 2026
- 37 **Role of vitamin D as adjuvant therapy on multiple sclerosis: an updated systematic review and meta-analysis of randomized controlled trials**  
Serag I, Abouzid M, Alsaadany KR, Hendawy M, Ali HT, Yaseen Y et al. · 2025
- 38 **Evaluation of the Clinical Outcomes Associated With the Use of Fatty Acids and Vitamin D in Rheumatoid Arthritis Patients: A Systematic Review and Meta-Analysis**  
Xu B, Liang D, Chen G · 2025
- 39 **The effects of vitamin D supplementation on serum lipid profiles in people with type 2 diabetes: a systematic review and meta-analysis of randomized controlled trials**  
Lu Q, Liang Q, Xi Y · 2024
- 40 **Effects of Vitamin D Supplementation in Combination With Exercise Training on Body Composition and Muscular Strength in Adults: A Systematic Review and Dose-Response Meta-Analysis of Randomized Controlled Trials**  
Kazeminasab F, Moein AR, Baharlooie M, Moradi S, Camera DM, Tinsley GM et al. · 2025
- 41 **Preoperative Calcium or Vitamin D Supplement in Thyroidectomy: A Systematic Review and Meta-Analysis**  
Jullamusi W, Ratanaprasert N, Pongsapich W, Kasemsuk N · 2025
- 42 **Exercise combined with vitamin D supplementation has additive health effects on short physical performance battery and stair climbing in older adults: a scope review of randomised controlled trials**  
Zhang J, Zhu Z, Niu Y, Cao ZB · 2025
- 43 **Effectiveness and safety of dietary supplements in the adjunctive treatment of psoriasis: a systematic review and network meta-analysis**  
Chen D, Yang J, Yang W, Liu X, Li Z · 2025
- 44 **Effect of Vitamin D Supplementation on Human Gut Microbiota: A Systematic Review of Randomized Controlled Trials**  
Zeb F, Osaili T, Hashim M, Alkalbani N, Papandreou D, Cheikh Ismail L et al. · 2026
- 45 **The effect of vitamin D supplementation on hemoglobin concentration: a systematic review and meta-analysis**  
Arabi SM, Ranjbar G, Bahrami LS, Vafa M, Norouzy A · 2020
- 46 **Vitamin D supplementation decrease asthma exacerbations in children: a systematic review and meta-analysis of randomized controlled trials**  
Fedora K, Setyoningrum RA, Aina Q, Rosyidah LN, Ni'mah NL, Titiharja FF · 2024
- 47 **Effects of vitamin D supplementation on TSH and thyroid hormones: A systematic review of randomized controlled trials**  
Safari S, Shojaei-Zarghani S, Molani-Gol R, Rafraf M, Malekian M · 2025
- 48 **Preoperative Vitamin D and Calcium Administration in Patients Undergoing Thyroidectomy: A Systematic Review and Meta-analysis of Randomized Controlled Trials**  
Alhakami M, Lajdam GB, Ghaddaf AA, Alayoubi S, Alhelali S, Alshareef M et al. · 2024
- 49 **Vitamin D deficiency and multiple sclerosis relapse: a meta-analysis**  
Zhang Y, Yu S, Zu Y, Lv J, Chen J, Feng X · 2025
- 50 **A Systematic Review and Meta-Analysis of Randomized Controlled Trials of the Effects of Vitamin D Supplementation on Children and Young Adults with HIV Infection**  
Nguyen HS, Van Tran K, Chen SY, Tam KW · 2023
- 51 **Efficacy of vitamin D supplementation in patients diagnosed with depression: a dose-response meta-analysis of randomized controlled trials**  
Liu HH, Liu TH, Liu CY, Wu JY, Lin CH, Lai CC · 2026
- 52 **Vitamin D Supplementation on Metabolic and Endocrine Profiles in Women with polyendocrine metabolic ovarian syndrome: An Updated Systematic Review and Meta-Regression of Randomized Controlled Trials**  
Pan D, Rui Z, Zhang W, Xia Y, Gao L, Yang L et al. · 2026
- 53 **Vitamin D supplementation for managing COVID-19 in patients with vitamin D deficiency: a systematic review and meta-analysis of randomised controlled trials**  
Zhu L, Zhang Y, Li X, Zou X, Bing P, Qi M et al. · 2025
- 54 **Vitamin D3 as an add-on treatment for multiple sclerosis: A systematic review and meta-analysis of randomized controlled trials**  
Mahler JV, Solti M, Apostolos-Pereira SL, Adoni T, Silva GD, Callegaro D · 2024
- 55 **Effects of vitamin D supplementation on patients with systemic lupus erythematosus: A systematic review and meta-analysis**  
Lu J, Zhu Q, Yu J, Tan Z, Kang Y, Sun Q et al. · 2026
- 56 **Optimizing bone health in people living with HIV: insights from a network meta-analysis of randomized controlled trials**  
Wang JC, Chung SM, Wu PT, Tu YK, Lai PC, Tai TW et al. · 2025

- 57 Clinical Efficacy of Vitamin D Supplements for the Treatment of Anemia in Patients With Chronic Kidney Disease: A Systematic Review and Meta-Analysis  
Wanyan X, Xu J · 2026
- 58 Effect of vitamin D on postoperative atrial fibrillation in patients undergoing coronary artery bypass grafting: a systematic review and meta-analysis  
Nisa F, Nauman HM, Lal PK, Assad AA, Arain M, Ali R et al. · 2026
- 59 Vitamin D supplementation among postoperative atrial fibrillation in patients undergoing coronary artery bypass grafting: a systematic review and meta-analysis  
Ashraf T, Moiz MA, Kumar G, Kumar A, Kumar V, Anand V et al. · 2025
- 60 The impact of vitamin D supplementation on glycemic control and lipid metabolism in polycystic ovary syndrome: a systematic review of randomized controlled trials  
Yu M, Chen S, Liu X, Dong H, Wang DC · 2025
- 61 Vitamin D Supplementation for Treating Atopic Dermatitis in Children and Adults: A Systematic Review and Meta-Analysis  
Nielsen AY, Høj S, Thomsen SF, Meteran H · 2024
- 62 The effect of vitamin D supplementation on some metabolic parameters in patients with nonalcoholic fatty liver disease: A systematic review and meta-analysis of 8 RCTs  
Chen X, Zhao Y, Zhang R, Zhao Y, Dai L · 2023
- 63 Effects of Whey Protein, Leucine, and Vitamin D Supplementation in Patients with Sarcopenia: A Systematic Review and Meta-Analysis  
Chang MC, Choo YJ · 2023
- 64 The role of nutritional vitamin D on microinflammation and nutritional status in maintenance hemodialysis patients: a meta-analysis of randomized controlled trials  
Li C, Xu S, Wang Y, Wu M · 2026
- 65 The Effect of Vitamin D Supplementation on the Severity of Symptoms and the Quality of Life in Irritable Bowel Syndrome Patients: A Systematic Review and Meta-Analysis of Randomized Controlled Trials  
Abuelazm M, Muhammad S, Gamal M, Labieb F, Amin MA, Abdelazeem B et al. · 2022
- 66 Effects of vitamin D supplementation on diabetic foot ulcer healing: a meta-analysis  
Wu X, Zeng J, Ye X, Peng M, Lan Y, Zhang S et al. · 2025
- 67 Efficacy of weekly versus daily cholecalciferol for repleting serum vitamin D (25(OH)D) deficiency: A systematic review and meta-analysis of randomized controlled trials  
Bortolussi-Courval É, Prosty C, Lee JJ, McCarthy LM, McDonald EG, Lee TC · 2024
- 68 Efficacy of Weekly versus Daily Cholecalciferol for Repleting Vitamin D (1,25-Dihydroxy Vitamin D) Deficiency: A Systematic Review and Meta-Analysis of Randomized Controlled Trials  
Bortolussi-Courval É, Prosty C, Lee JJ, McCarthy L, McDonald E, Lee TC · 2024
- 69 Efficacy and Safety of Intraleisional Purified Protein Derivative Versus Vitamin D for the Treatment of Cutaneous Warts: A Systematic Review and Meta-Analysis of Randomized Controlled Trials  
Abu-Zaid A, Hilali S, Albasheer Z, Alkhatian S, Alraqum FF, Al-Rashid AH et al. · 2026
- 70 Efficacy and Safety of Vitamin D Supplementation in Patients With Systemic Lupus Erythematosus: A Meta-analysis of Randomized Controlled Trials  
Zheng R, Gonzalez A, Yue J, Wu X, Qiu M, Gui L et al. · 2019
- 71 Vitamin D supplementation in individuals with type 1 diabetes mellitus (T1DM): a systematic review and meta-analysis focusing on pediatrics  
Fan S, Zhang T, Yin L · 2025
- 72 Effects of Dietary Supplementation in Patients with Restless Legs Syndrome: A Systematic Review  
González-Parejo P, Martín-Núñez J, Cabrera-Martos I, Valenza MC · 2024
- 73 Can vitamin D supplementation affect cardiometabolic factors in children and adolescence with overweight and obesity? A grade-assessed systematic review and meta-analysis of randomized controlled trials  
Faghfour AH, Mahmoudinezhad M, Pam P, Barazandeh S, Faramarzi F, Mohammadpour Y et al. · 2025
- 74 Efficacy of Vitamin D Supplementation to Alleviate Premenstrual Syndrome Symptoms: A Systematic Review and Meta-Analysis of Randomized Controlled Trials  
Zainab A, Tageldin RS, Patel R, Hassan MA, Aburas LA, Alkahily M et al. · 2026
- 75 Insufficient evidence for vitamin D use in COVID-19: A rapid systematic review  
da Rocha AP, Atallah AN, Aldrighi JM, Pires ALR, Dos Santos Puga ME, Pinto ACPN · 2021
- 76 A comparison of the risk of cesarean section in gestational diabetes mellitus patients supplemented antenatally with vitamin D containing supplements versus placebo: A systematic review and meta-analysis of double-blinded randomized controlled trials  
Saha S, Saha S · 2020
- 77 Are There Any Pleiotropic Benefits of Vitamin D in Patients With Diabetic Kidney Disease? A Systematic Review of Randomized Controlled Trials  
Sharma JK, Khan S, Wilson T, Pilkey N, Kapuria S, Roy A et al. · 2023
- 78 The effect of magnesium alone or its combination with other supplements on the markers of inflammation, OS and metabolism in women with polycystic ovarian syndrome (PCOS): A systematic review  
Li R, Li Z, Huang Y, Hu K, Ma B, Yang Y · 2022
- 79 Does vitamin D supplementation impact serotonin levels? A systematic review and meta-analysis  
Alimohammadi-Kamalabadi M, Ziaei S, Hasani M, Mohammadi S, Mehrbod M, Morvaridi M et al. · 2024
- 80 Effects of vitamin D on biochemical markers of osteoporosis: a meta-analysis of randomised trials  
Alber CS, Halsey J, Emberson J, Hin H, Hill M, Armitage J et al. · 2026
- 81 Psoriasis and Vitamin D: A Systematic Review and Meta-Analysis  
Formisano E, Proietti E, Borgarelli C, Pisciotta L · 2023
- 82 Nutritional supplements for preventing preclampsia: A network meta-analysis  
Wang C, You C, Zhang Y · 2026
- 83 Calcium, vitamin D, or combined supplementation to prevent fractures and falls: systematic review and meta-analysis  
Masse O, Mercurio CM, Dupuis S, Al Sahwi M, Arruda A, Dallaire G et al. · 2026
- 84 Vitamin D, acute respiratory infections, and Covid-19: The curse of small-size randomised trials. A critical review with meta-analysis of randomised trials  
Autier P, Doi G, Mullie P, Vankrunkelsven P, D'Ecclesiis O, Gandini S · 2025
- 85 The Effects of Vitamin D Supplementation During Pregnancy on Maternal, Neonatal, and Infant Health: A Systematic Review and Meta-analysis  
Yang WC, Chitale R, O'Callaghan KM, Sudfeld CR, Smith ER · 2025
- 86 Vitamin D Supplementation and Its Impact on Mortality and Cardiovascular Outcomes: Systematic Review and Meta-Analysis of 80 Randomized Clinical Trials  
Ruiz-García A, Pallarés-Carratalá V, Turégano-Yedro M, Torres F, Sapena V, Martín-Gorgojo A et al. · 2023
- 87 The effect of vitamin D supplementation on serum levels of fibroblast growth factor- 23: A systematic review and meta-analysis of randomized controlled trials  
Meshkini F, Soltani S, Clark CCT, Tam V, Meyre D, Toupchian O et al. · 2022
- 88 Vitamin D Food Fortification and Biofortification Increases Serum 25-Hydroxyvitamin D Concentrations in Adults and Children: An Updated and Extended Systematic Review and Meta-Analysis of Randomized Controlled Trials  
Dunlop E, Kiely ME, James AP, Singh T, Pham NM, Black LJ · 2021
- 89 Vitamin D supplementation vs. placebo and incident type 2 diabetes in an ancillary study of the randomized Vitamin D and Omega-3 Trial  
Tobias DK, Pradhan AD, Duran EK, Li C, Song Y, Buring JE et al. · 2025
- 90 Effect of Vitamin D Supplementation on Cardiometabolic Outcomes in Older Australian Adults-Results from the Randomized Controlled D-Health Trial  
Duarte Romero BL, Armstrong BK, Baxter C, English DR, Ebeling PR, Hartel G et al. · 2026
- 91 The effect of vitamin D supplementation on cancer incidence in the randomised controlled D-Health Trial: Implications for policy and practice  
Neale RE, English DR, McLeod DS, Armstrong BK, Baxter C, Romero BD et al. · 2025
- 92 The effect of vitamin D and omega-3 fatty acid supplementation on pain prevalence and severity in older adults: a large-scale ancillary study of the VITAMIN D and Omega-A-3 trial (VITAL)  
Soens MA, Sesso HD, Manson JE, Fields KG, Buring JE, Lee IM et al. · 2024
- 93 The effect of three years of vitamin D supplementation on erectile dysfunction: Results from the randomized placebo-controlled D-Health Trial  
Duarte Romero B, Waterhouse M, Baxter C, McLeod DSA, English DR, Armstrong BK et al. · 2024
- 94 The Effect of Vitamin D<sub>3</sub> Supplementation on the Risk of Falls in a General Population-The Finnish Vitamin D Trial  
Rikkinen T, Hantunen S, Kröger H, Lamberg-Allardt C, Manson JE, Nurmi T et al. · 2026
- 95 The effect of vitamin D<sub>3</sub> supplementation on fracture incidence in an aging population - The Finnish vitamin D trial  
Rikkinen T, Hantunen S, Kröger H, Lamberg-Allardt C, Manson JE, Nurmi T et al. · 2026
- 96 Vitamin D supplementation and incidence of major depressive disorder - A randomized clinical trial  
Ahl NM, Hantunen S, Tuomainen TP, Lamberg-Allardt C, Manson JE, Nurmi T et al. · 2026
- 97 A Randomized Trial of Vitamin D Supplementation and COVID-19 Clinical Outcomes and Long COVID: The Vitamin D for COVID-19 Trial  
Ganmaa D, Cook KA, Khudyakov P, Enkhjargal D, Bilegtsaikhan T, Mayer KH et al. · 2026
- 98 Effect of Vitamin D and Omega-3 Fatty Acid Supplementation on Kidney Function in Patients With Type 2 Diabetes: A Randomized Clinical Trial  
de Boer IH, Zelnick LR, Ruzinski J, Friedenberg G, Duszak J, Bubes VY et al. · 2019
- 99 Effect of vitamin D<sub>3</sub> supplementation starting mid-pregnancy on placental angiogenic factors and terminal villi: a secondary analysis of a randomized controlled trial in Bangladesh  
Subramanian A, Carr CM, Papp E, Murphy KE, Al Mahmud A, Roth DE et al. · 2025
- 100 Effects of Supplemental Vitamin D3, Omega-3 Fatty Acids on Physical Performance Measures in the VITAMIN D and Omega-A-3 Trial  
Chou SH, Cook NR, Kotler G, Kim E, Copeland T, Lee IM et al. · 2024
- 101 Does antenatal cholecalciferol supplementation affect the mode or timing of delivery? Post hoc analyses of the MAVIDOS randomized controlled trial  
Moon RJ, D'Angelo S, Crozier SR, Curtis EM, Fernandes M, Kermack AJ et al. · 2023
- 102 Effect of moderate or high versus low dose daily vitamin D on COVID-19 incidence: A double-blind, parallel-group randomized clinical trial  
Meltzer DO, Moy JN, Schram AW, Tate A, Hyman MJ, Cursio JF et al. · 2026
- 103 Vitamin D supplementation before in vitro fertilisation in women with polycystic ovary syndrome: multicentre, double blind, placebo controlled, randomised clinical trial  
Hu KL, Liao T, Wu Q, Ma X, Cao Y, Tan J et al. · 2026
- 104 Impact of high-dose vitamin D and calcium carbonate supplementation on bone density in adolescents living with HIV: a randomised, placebo-controlled trial  
Ferrand RA, Dzavakwa NV, Bandason T, Chisenga M, Filteau S, Kranzer K et al. · 2026
- 105 Effect of vitamin D and omega-3 fatty acid supplementation on anemia incidence among older adults: the VITAL trial  
Cho HL, Li C, Manson JE, Cook NR, Lee IM, Buring JE et al. · 2025
- 106 Higher Maternal Body Mass Index Attenuates the Response to High-Dose Vitamin D Supplementation During Pregnancy: A Secondary Analysis of the Randomized Vitamin D Antenatal Asthma Reduction Trial (VDAART)  
Jung C, Lu Z, Handy DE, Litonjua AA, Loscalzo J, Weiss ST et al. · 2026
- 107 The effect of pregnancy vitamin D supplementation on maternal blood pressure: real-world data analysis within the MAVIDOS randomised placebo-controlled trial  
Citeroni-Clark NL, D'Angelo S, Crozier SR, Kermack A, Godfrey KM, Cooper C et al. · 2025
- 108 Maternal antenatal vitamin D supplementation and offspring risk of atopic eczema in the first 4 years of life  
El-Heis S, D'Angelo S, M EC, Healy E, J RM, Crozier S et al. · 2024
- 109 Targeted vitamin D supplementation and major adverse cardiovascular events after myocardial infarction: the TARGET-D trial  
May HT, Le VT, Anderson JL, Iverson L, Bair TL, Knight S et al. · 2026
- 110 Effect of daily sunscreen application on vitamin D: findings from the open-label randomized controlled Sun-D Trial  
Tran V, Duarte Romero BL, Andersen H, Clarke M, Collins LG, Dawson T et al. · 2025
- 111 Impact of Vitamin D Supplementation on Cognition in Adults With Mild to Moderate Vitamin D Deficiency: Outcomes From the VitaMIND Randomized Controlled Trial  
Corbett A, Taylor R, Llewellyn D, Ranson JM, Hampshire A, Pickering E et al. · 2025
- 112 Vitamin D supplementation and bone health in post-menopausal women: a 24-month randomized controlled intervention with enhanced bioavailability formulations  
Rasool N, Munir Y · 2026
- 113 Calcium and vitamin D reduce hypoparathyroidism and hospital stay after thyroidectomy: A randomized controlled trial  
Gkanis V, Nastos K, Ntalaperas K, Agianni E, Lainas S, Raikou P et al. · 2026

- 114 **High-Dose Vitamin D3 Supplementation During Pregnancy and Test-Based Cognitive Performance at Age 10 Years: A Post Hoc Secondary Analysis of a Randomized Clinical Trial**  
Frederiksen OF, Jepsen JRM, Brustad N, Vinding R, Rosenberg JB, Mohammadzadeh P et al. · 2026
- 115 **Vitamin D and wound healing: Assessing skin barrier function and implications for chloasma treatment**  
Chen Q, Liu L, Zhang Y · 2024
- 116 **Pregnancy vitamin D supplementation and offspring bone mineral density in childhood follow-up of a randomized controlled trial**  
Moon RJ, D' Angelo S, Curtis EM, Ward KA, Crozier SR, Schoenmakers I et al. · 2024
- 117 **Pregnancy vitamin D supplementation and bone mineral density of the mother: a post hoc analysis of the MAVIDOS randomised placebo-controlled trial**  
Moon RJ, D'Angelo S, Curtis EM, Ward KA, Godfrey KM, Cooper C et al. · 2025
- 118 **High-dose vitamin D supplementation does not improve outcome in a cutaneous melanoma population: results of a randomized double-blind placebo-controlled study (VIDMe trial)**  
De Smedt J, Van Kelst S, Janssen L, Marasigan V, Boeckstaens V, Bogaerts K et al. · 2024
- 119 **Rationale for Raising Current Clinical Practice Guideline Target for Serum 25-Hydroxyvitamin D in Chronic Kidney Disease**  
Strugnell SA, Sprague SM, Ashfaq A, Petkovich M, Bishop CW · 2019
- 120 **Use of Extended-Release Calcifediol to Treat Secondary Hyperparathyroidism in Stages 3 and 4 Chronic Kidney Disease**  
Sprague SM, Crawford PW, Melnick JZ, Strugnell SA, Ali S, Mangoo-Karim R et al. · 2016
- 121 **Effects of a 1-year calcium-enriched permeate supplement on bone health in postmenopausal females: The RENEW randomized controlled intervention trial**  
Tetens I, Kisi SB, Parlesak A, Rasmussen SI, Cramon MØ, Petersen CF et al. · 2026
- 122 **Baseline 25-hydroxyvitamin D levels predict the effects of vitamin D supplementation on joint symptoms and cartilage loss in patients with knee osteoarthritis**  
Wang T, Zheng S, Jin X, Cen H, Zhu Z, Han W et al. · 2025
- 123 **Parathyroid Hormone Modifies the Effect of Vitamin D Supplementation on Risk of Relapse or Death in Patients with Digestive Tract Cancer: A Post Hoc Subgroup Analysis of the AMATERASU Randomized Clinical Trial**  
Sasaki A, Akutsu T, Ohdaira H, Suzuki Y, Eto K, Urashima M · 2026
- 124 **Effects of Vitamin D3 Combined with Folic Acid on Domain and Specific Cognitive Function among Patients with Mild Cognitive Impairment: A Randomized Clinical Trial**  
Liu W, Zheng D, Li X, Wang T, Wang L, Hao L et al. · 2024
- 125 **Analysis of the Efficacy and Safety of Weekly Calcifediol 100 µg in Vitamin D Deficient Patients**  
Pérez Castrillón JL, Jódar-Gimeno E, Molina K, García-Bea A, Ostalé CM, Gilaberte I · 2025
- 126 **Vitamin K<sub>2</sub> and D<sub>3</sub> Supplementation in Patients With Severe Coronary Artery Calcification: The DANCODE Trial**  
Hasific S, Øvrehus KA, Mejidal A, Hosbond S, Lambrechtsen J, Kumarathurai P et al. · 2026
- 127 **Efficacy and Safety of Weekly Calcifediol Formulations (75 and 100 µg) in Subjects with Vitamin D Deficiency: A Phase II/III Randomised Trial**  
Jódar-Gimeno E, Pérez-Castrillón JL, Nociar J, Lójka M, Nikolov D, Cereto-Castro F et al. · 2024
- 128 **One-Year Comparison of Three Maintenance Doses of Vitamin D<sub>2</sub> (600, 1000, and 2000 IU/day) on Metabolic Outcomes in Overweight and Obese Children: A Post-Hoc Analysis of a Randomized Trial**  
Nourian NZ, Bina AH, Nemati M, Asghari G · 2026
- 129 **Vitamin K2 and D in Patients With Aortic Valve Calcification: A Randomized Double-Blinded Clinical Trial**  
Diederichsen ACP, Lindholt JS, Möller S, Øvrehus KA, Auscher S, Lambrechtsen J et al. · 2022
- 130 **Effect Modification by Serum Vitamin A Levels on the Association between Vitamin D and Relapse or Death in Patients with Digestive Tract Cancer**  
Kohmura T, Ohdaira H, Suzuki Y, Urashima M · 2026
- 131 **Genetic determinants of response to vitamin D supplementation**  
Alonso N, Schoenmakers I, Kuenzer T, Willems A, Jin H, Aspray TJ et al. · 2026
- 132 **High-Dose Vitamin D in Clinically Isolated Syndrome Typical of Multiple Sclerosis: The D-Lay MS Randomized Clinical Trial**  
Thouvenot E, Laplaud D, Lebrun-Frenay C, Derache N, Le Page E, Maillart E et al. · 2025
- 133 **Efficacy of a Personalized mHealth App in Improving Micronutrient Supplement Use Among Pregnant Women in Karachi, Pakistan: Parallel-Group Randomized Controlled Trial**  
Vadsaria K, Nuruddin R, Mohammed N, Azam I, Sayani S · 2025
- 134 **Weekly Vitamin D Supplementation to Prevent Acute Respiratory Infections in Young Children at Different Latitudes: A Randomized Controlled Trial**  
Reyes ML, Vizcaya C, Le Roy C, Loureiro C, Brinkmann K, Arancibia M et al. · 2024
- 135 **Long-Term Treatment and Effect of Discontinuation of Calcifediol in Postmenopausal Women with Vitamin D Deficiency: A Randomized Trial**  
Pérez-Castrillón JL, Dueñas-Laita A, Gómez-Alonso C, Jódar E, Del Pino-Montes J, Brandi ML et al. · 2023
- 136 **Serum magnesium is linked with sperm concentration, motile sperm count and serum anti-Müllerian hormone in infertile men**  
Yahyavi SK, Probst-Drejer B, Poulsen NN, Jorsal MJ, Juul A, Jørgensen N et al. · 2026
- 137 **Calcifediol is superior to cholecalciferol in improving vitamin D status in postmenopausal women: a randomized trial**  
Pérez-Castrillón JL, Dueñas-Laita A, Brandi ML, Jódar E, Del Pino-Montes J, Quesada-Gómez JM et al. · 2021
- 138 **Intervention methods and influencing factors of vitamin D deficiency in Northeast China: a self-controlled trial and randomized controlled trial study**  
Liu J, Qu C, Jin S, Jia Y, Na L · 2026
- 139 **Calcifediol supplementation in adults on hemodialysis: a randomized controlled trial**  
Morrone L, Palmer SC, Saglimbene VM, Perna A, Cianciolo G, Russo D et al. · 2022
- 140 **Effect of a six-month vitamin D supplementation on depressive symptoms in patients with major depressive episode (DepFuD): a double-blinded randomised controlled trial**  
Mikola T, Lehto SM, Tolmunen T, Honkalampi K, Valkonen-Korhonen M, Laukkanen V et al. · 2026
- 141 **The Effect of Vitamin D Supplementation with or without Calcium on Vitamin D Epimer and Metabolites**  
Gariballa S, Al-Bluwi GSM, Yasin J · 2024
- 142 **A Randomized Phase II/III Trial Evaluating the Efficacy and Safety of 100 and 125 µg of Calcifediol Weekly Treatment of Severe Vitamin D Deficiency**  
Pérez-Castrillón JL, Jódar-Gimeno E, Nociar J, Lójka M, Nikolov D, Cereto-Castro F et al. · 2025
- 143 **Ergocalciferol Supplementation in Hemodialysis Patients With Vitamin D Deficiency: A Randomized Clinical Trial**  
Miskulin DC, Majchrzak K, Tighiouart H, Muther RS, Kapolan T, Johnson DS et al. · 2016
- 144 **Efficacy and Safety of High-Dose Vitamin D Supplementation Combined With an Enuresis Alarm vs Alarm Alone in Children With Primary Monosymptomatic Nocturnal Enuresis: A Randomized Clinical Trial**  
Ye Z, Luo X, Chen H, Zhang Q, Li C, Zhang Z et al. · 2026
- 145 **Vitamin D and Falls in Older African American Women: The PODA Randomized Clinical Trial**  
Aloia JF, Rubinova R, Fazzari M, Islam S, Mikhail M, Ragolia L · 2019
- 146 **Vitamin D Supplementation and Testosterone Levels in Breast Cancer Survivors**  
Minopoli A, Di Gennaro P, Porciello G, Palumbo E, Vitale S, Grimaldi M et al. · 2025
- 147 **Impact of vitamin D status and supplementation on exploratory inflammatory biomarkers in preschoolers with asthma**  
El Abd A, Trottier H, Tse SM, Mäse B, Mailhot G, Alos N et al. · 2026
- 148 **Efficacy of Daily Supplementation of Milk Fortified With Vitamin D2 for Three Months in Healthy School Children: A Randomized Placebo Controlled Trial**  
Marwaha RK, Dabas A, Puri S, Kalaivani M, Dabas V, Yadav S et al. · 2021
- 149 **The role of vitamin D in pregnancy outcomes in gestational diabetes: a randomized controlled trial**  
Liu Y, Luo L, Yu J, Yin Q · 2026
- 150 **Randomized, placebo-controlled, double-blind clinical trial on the contributions of vitamin D in the control of cardiovascular risk factors, depressive symptoms and suicide risk**  
Porto C, Petribu K, Barbosa N, Magalhães R, Lira C, Porto AB et al. · 2025
- 151 **The soy isoflavones for reducing bone loss (SIRBL) study: a 3-y randomized controlled trial in postmenopausal women**  
Alekl DL, Van Loan MD, Koehler KJ, Hanson LN, Stewart JW, Hanson KB et al. · 2010
- 152 **Vitamin D supplementation during pregnancy and offspring bone microarchitecture: A post hoc analysis of the MAVIDOS randomised controlled trial**  
Maden C, D'Angelo S, Westbury LD, Curtis EM, Crozier SR, Godfrey KM et al. · 2026
- 153 **Effect of Vitamin D Supplementation on (25(OH)D) Status in Children 12-30 Months of Age: A Randomized Clinical Trial**  
Flores-Aldana M, Rivera-Pasquel M, García-Guerra A, Pérez-Cortés JG, Bárcena-Echegollén JE · 2023
- 154 **Vitamin D supplementation at low (600 IU/day) or higher dose (3,750 IU/day) does not improve insulin resistance markers at one year: A randomized controlled trial**  
Safwan N, Mantzoros CS, Rahme M, Baddoura R, Halaby G, El-Hajj Fuleihan G · 2025
- 155 **The Immunomodulatory Activity of High Doses of Vitamin D in Critical Care Patients with Severe SARS-CoV-2 Pneumonia-A Randomized Controlled Trial**  
Gonçalves AM, Velho S, Rodrigues B, Antunes ML, Cardoso M, Godinho-Santos A et al. · 2025
- 156 **Impact of vitamin D supplementation in the prognosis of patients with SARS-CoV2 pneumonia admitted to the intensive care unit - a randomized controlled trial**  
Gonçalves AM, Rodrigues BS, Antunes ML, Gonçalves J, Marinho A · 2025
- 157 **Vitamin K status has no influence on the effect of vitamin D supplementation on bone turnover and cardiovascular markers: a randomized controlled trial**  
Theiler-Schwetz V, Riedmann U, Zelzer S, Meintzer A, Schmitt L, Kraus DA et al. · 2026
- 158 **Role of vitamin D supplementation and vitamin D receptor in drug-resistant epilepsy: A double-blind placebo-controlled trial conducted in India**  
Pattnaik SS, Sarangi SC, Dash Y, Singh A, Goswami R, Singh S et al. · 2025
- 159 **Effects of vitamin D supplementation on acute respiratory tract infections in 6-8-year-old children: a randomized clinical trial**  
Clerico JW, Thams L, Stounbjerg NG, Hauger H, Damsgaard CT, Mølgaard C · 2025
- 160 **Classification of Vitamin D Status Based on Vitamin D Metabolism: A Randomized Controlled Trial in Hypertensive Patients**  
Zelzer S, Meintzer A, Enko D, Keppel MH, Herrmann M, Theiler-Schwetz V et al. · 2024
- 161 **Lung and blood early biomarkers for host-directed tuberculosis therapies: Secondary outcome measures from a randomized controlled trial**  
Wallis RS, Ginindza S, Beattie T, Arjun N, Likoti M, Sebe M et al. · 2022
- 162 **Effect of Monthly Vitamin D on Chronic Pain Among Community-Dwelling Seniors: A Randomized, Double-Blind Controlled Trial**  
Schlögl M, Chocano-Bedoya P, Dawson-Hughes B, Orav EJ, Freystaetter G, Theiler R et al. · 2019
- 163 **Effects of whey protein plus vitamin D supplementation combined with progressive resistance training on glycaemic control, body composition, muscle function and cardiometabolic risk factors in middle-aged and older overweight/obese adults with type 2 diabetes: A 24-week randomized controlled trial**  
Miller EG, Nowson CA, Dunstan DW, Kerr DA, Menzies D, Daly RM · 2021
- 164 **CAN PROTEIN AND VITAMIN D ENHANCE THE COGNITIVE BENEFITS OF RESISTANCE TRAINING IN TYPE 2 DIABETICS?**  
Macpherson H, Miller E, Dunstan D, Nowson C, Kerr D, Menzies D et al. · 2017
- 165 **Vitamin D Supplementation Improves Cognitive Function Through Reducing Oxidative Stress Regulated by Telomere Length in Older Adults with Mild Cognitive Impairment: A 12-Month Randomized Controlled Trial**  
Yang T, Wang H, Xiong Y, Chen C, Duan K, Jia J et al. · 2020
- 166 **Is urinary myelin basic protein the key to understanding the role of vitamin D supplementation in paediatric overactive bladder-dry? Results from a three-stage clinical investigation**  
Chen H, Zhang Z, Ye Z, Zhang Q, Zhang T, An N et al. · 2026
- 167 **The effect of calcitriol and cholecalciferol on inflammatory markers in periprocedural myocardial injury: A randomized controlled trial**  
Mahmoudi L, Izadpanah P, Asadi S · 2025
- 168 **Magnesium status and supplementation influence vitamin D status and metabolism: results from a randomized trial**  
Dai Q, Zhu X, Manson JE, Song Y, Li X, Franke AA et al. · 2018
- 169 **RESCue trial: Randomized controlled clinical trial with extended-release calcifediol in symptomatic COVID-19 outpatients**  
Bishop CW, Ashfaq A, Melnick JZ, Vazquez-Escarpanter E, Fialkow JA, Strugnell SA et al. · 2023
- 170 **Vitamin D Supplementation for Children with Epilepsy on Antiseizure Medications: A Randomized Controlled Trial**  
Bashiri FA, Hudairi A, Hamad MH, Al-Sulimani LK, Al Homyani D, Al Saqabi D et al. · 2024
- 171 **Results From the RESCue Trial: A Randomized Controlled Trial with Extended-Release Calcifediol in Symptomatic Outpatients with COVID-19**  
Bishop CW, Ashfaq A, Melnick JZ, Vazquez-Escarpanter E, Fialkow JA, Strugnell SA et al. · 2022

- 172 The Effect of Vitamin D Supplementation on Functional Outcomes in Patients Undergoing Rehabilitation After an Ischemic Stroke: A Prospective, Single-Blind, Randomized, Placebo-Controlled Study  
Borowicz W, Ptaszkowska L, Malecki R, Paprocka-Borowicz M · 2025
- 173 Effect of calcifediol and cholecalciferol on muscle function in postmenopausal women: a randomized controlled trial  
Bischoff-Ferrari HA, Dawson-Hughes B, Orav JE, Ceglia L, Egli A, Kistler-Fischbacher M et al. · 2025
- 174 Safety and effectiveness of stoss therapy in children with vitamin D deficiency  
Tannous P, Fiscoletti M, Wood N, Gunasekera H, Zuryski Y, Biggin A et al. · 2020
- 175 Effect of vitamin D combined with probiotic-assisted insulin pump on glucose-lipid metabolism, intestinal flora and pregnancy outcome in gestational diabetes mellitus  
Chen M, Li C, Miao Z · 2026
- 176 Beneficial effects of exercise, testosterone, vitamin D, calcium and protein in older men-A randomized clinical trial  
Midttun M, Overgaard K, Zerahn B, Pedersen M, Rashid A, Østergren PB et al. · 2024
- 177 Efficacy of vitamin D supplementation for children with acute bronchitis: A randomized controlled trial  
Abdelkreem E, Labeeb YS, Mohamed MA · 2026
- 178 Cholecalciferol and muscle strength in hemodialysis patients: results from the randomized VITADIAL trial  
Bataille S, Seret G, Lavainne F, Gaipe P, Serveaux M, Robert T et al. · 2026
- 179 Increase in calcidiol level is associated with improved sternal bone healing after cardiac surgery with sternotomy-REINFORCE-D trial results  
Černý D, Čechle M, Sedláčková E, Miková B, Drncová E, Skalský I et al. · 2025
- 180 The effects of vitamin D combined with thermotherapy and resistance exercise on inflammatory factors, thyroid hormones and MSTN in elderly patients with sarcopenia  
Zhao C, Liu W, Kong T, Zhu X, Wang R · 2025
- 181 High-dose versus low-dose ergocalciferol for correcting hypovitaminosis D after fragility hip fracture: a randomized controlled trial  
Jarusrivanna A, Phusunti S, Chotiyarnwong P, Unnanuntana A · 2021
- 182 Effects of zinc, vitamin D, and their co-supplementation on mood, serum cortisol, and brain-derived neurotrophic factor in patients with obesity and mild to moderate depressive symptoms: A phase II, 12-wk, 2 × 2 factorial design, double-blind, randomized, placebo-controlled trial  
Yosae S, Soltani S, Esteghamati A, Motevalian SA, Tehrani-Doost M, Clark CCT et al. · 2020
- 183 Positive effect of low dose vitamin D supplementation on growth of fetal bones: A randomized prospective study  
Vafaei H, Asadi N, Kasraeian M, Shahraki HR, Bazrafshan K, Namazi N · 2019
- 184 Effects of vitamin D status and supplementation on MASLD severity in individuals with overweight or obesity: a cross-sectional study and randomized controlled trial  
Yu L, Wang X, Yang X, Xu X, Li J, Li C et al. · 2026
- 185 Comparison of three different daily doses of vitamin D3 in the treatment of nutritional rickets in Indian children under age 5 years: A randomized controlled trial  
Dabas A, Marwaha RK, Goswami B, Batra R, Dayal D, Dabas V et al. · 2026
- 186 Combined Rehabilitation with Alpha Lipoic Acid, Acetyl-L-Carnitine, Resveratrol, and Cholecalciferol in Discogenic Sciatica in Young People: A Randomized Clinical Trial  
Scaturro D, Vitagliani F, Tomasello S, Sconza C, Respiizzi S, Letizia Mauro G · 2023
- 187 Sunshine Against Stress: A Randomised, Double-Blind, Placebo-Controlled Trial of Vitamin D Supplementation for Allostatic Load in a Conflict-Affected Population of Azad Jammu & Kashmir  
Kayani JA, Saleem J, Alsanie SA, Faryal J, Ali F, Zeb I · 2026
- 188 Effects of personalized vitamin D<sub>3</sub> on inflammation in colorectal cancer patients: a randomized trial  
Gwenzi T, Weber ANR, Trares K, Vlaski T, Slavic M, Sha S et al. · 2026
- 189 Effect of oral nutritional supplements on physical functional performance in older patients at nutritional risk discharged with a rehabilitation plan: A randomised controlled trial  
Jensen A, Ninh ED, Darlem BB, Haack LM, Möller CM, Knudsen AW et al. · 2026
- 190 Impact of Cholecalciferol Supplementation on Radiotherapy Outcomes in Advanced Cervical Cancer  
Suardi D, Judistiani RTD, Rinaldi M, Trianasari N, Hidayat B, Lesmana R et al. · 2025
- 191 A randomized comparison of intramuscular high-dose versus oral maintenance vitamin D to prevent severe exacerbations in deficient/insufficient asthmatic children  
Alansari K, Davidson BL, Holick MF · 2025
- 192 Effect of Vitamin D Supplementation on Psoriasis Severity in Patients With Lower-Range Serum 25-Hydroxyvitamin D Levels: A Randomized Clinical Trial  
Jenssen M, Furberg AS, Jorde R, Wilsaard T, Danielsen K · 2023
- 193 Independent Effects of Vitamin D on Leukocyte Telomere Length and Activity: An RCT in Asian Indian Women With Prediabetes  
Bhatt SP, Pandey S, Misra A · 2025
- 194 Improved bioavailability of buccal nanoemulsion vitamin D compared to conventional oral supplementation in patients with inflammatory bowel disease: a randomized controlled trial  
Kojcký V, Klnůfek J, Kianička B, Kohout P · 2025
- 195 Safety, tolerability, and gastrointestinal effect of a Bifidobacterium-based synergistic synbiotic in infants and toddlers  
Jarman JB, Torres PJ, Baum C, Tinoco J, Sato H, Rasteiro CS et al. · 2026
- 196 Effect of calcifediol on chronic rhinosinuitis, a randomized clinical trial  
Popko-Zagor M, Jandziak P, Sierdzinski J, Rusetska N, Sarnowska E · 2025
- 197 Intralesional measles, mumps, and rubella vaccine versus vitamin D for treatment of warts: A randomised clinical trial  
Sallam M, Awad A, Hamdy S, State A · 2026
- 198 The effect of vitamin D supplementation and vaginal probiotics on fertility in women with recurrent implantation failure: A randomized clinical trial  
Badlhi E, Sharifi P, Moradi A, Kamrani A, Hassanzadeh A, Soltani-Zangbar MS et al. · 2025
- 199 Effect of vitamin D supplementation on asthma control in patients with vitamin D deficiency: the ACVID randomised clinical trial  
Andújar-Espinosa R, Salinero-González L, Illán-Gómez F, Castilla-Martínez M, Hu-Yang C, Ruiz-López FJ · 2021
- 200 A randomised controlled trial of vitamin D and omega-3 long chain polyunsaturated fatty acids in the treatment of irritability and hyperactivity among children with autism spectrum disorder  
Mazahery H, Conlon CA, Beck KL, Mugridge O, Kruger MC, Stonehouse W et al. · 2019
- 201 Effects of combined nutritional supplementation and exercise on proxy measures of muscle mass, strength, and function in older adults with sarcopenia: a 12-week multicentre RCT  
Sun J, He M, Chen M, Chen Y, Yuan W, Song F et al. · 2025
- 202 The impact of vitamin D supplementation on depression and anxiety in young individuals with depression and vitamin D insufficiency/deficiency  
Lee YT, Huang HC, Ko KT, Sun FJ, Lee TH, Liu HC et al. · 2026
- 203 Randomized double-blind placebo-controlled proof-of-concept trial of resveratrol for outpatient treatment of mild coronavirus disease (COVID-19)  
McCreary MR, Schnell PM, Rhoda DA · 2022
- 204 Nutritional vitamin D supplementation in dialysis: a randomized trial  
Bhan I, Dobens D, Tamez H, Deferio JJ, Li YC, Warren HS et al. · 2015
- 205 The Effect of Some Micronutrients Multi-Supplementation on Thyroid Function, Metabolic Features and Quality of Life in Patients Treating With Levothyroxine and Vitamin D: A Double-blind, Randomized Controlled Trial  
Nikkhah M, Vafa M, Abiri B, Golgiri F, Sarbakhsh P, Alaei-Shahmiri F · 2024
- 206 Clinical efficacy of vitamin D combined with conventional therapy for sudden sensorineural hearing loss in patients with vitamin D deficiency: a randomized controlled trial  
Shen X, Yang M, Tian J, Xie L, Feng N, Ma R · 2025
- 207 Effect of weekly vitamin D supplementation on the severity of atopic dermatitis and type 2 immunity biomarkers in children: A randomized controlled trial  
Borzutzky A, Iturriaga C, Pérez-Matelluna G, Cristi F, Cifuentes L, Silva-Valenzuela S et al. · 2024
- 208 Effect of vitamin D supplementation on fatigue and mood among perimenopausal women  
Ray P, Srivastava A, Jani P · 2026
- 209 Extended-release calcifediol for secondary hyperparathyroidism in Chinese adults with stage 3 or 4 chronic kidney disease: a randomized trial  
Fang M, Hao Y, Mao H, Ren H, Liao X, Li X et al. · 2026
- 210 A study to assess the relationship between vitamin D3 levels and the risk of acute exacerbation in patients with chronic obstructive pulmonary disease  
Lakra A, Singh B, Janmeja AK, Sharma V, Kumar A · 2025
- 211 Impact of vitamin D supplementation on disease activity and pain management in rheumatoid arthritis: a randomized double-blinded controlled study  
Rexhepi M, Krasniqi B, Hoti K, Daci A, Rexhepi-Kelmendi B, Krasniqi S · 2025
- 212 A PROSPECTIVE STUDY OF COMMONLY UTILIZED REGIMENS OF VITAMIN D REPLACEMENT AND MAINTENANCE THERAPY IN ADULTS  
Rafii DC, Ali F, Farag A, Iyer B, Otterbeck PE, Chaudhari R et al. · 2019
- 213 Co-Administration of Soy Isoflavones and Vitamin D in Management of Irritable Bowel Disease  
Jailli M, Hekmatdoost A, Vahedi H, Poustchi H, Khademi B, Saadi M et al. · 2016
- 214 Protein-enriched diet, with the use of lean red meat, combined with progressive resistance training enhances lean tissue mass and muscle strength and reduces circulating IL-6 concentrations in elderly women: a cluster randomized controlled trial  
Daly RM, O'Connell SL, Mundell NL, Grimes CA, Dunstan DW, Nowson CA · 2014
- 215 The interaction of vitamin D supplementation with Omentin-1 gene polymorphism on metabolic biomarkers, omentin-1 levels and anthropometric measures in women with prediabetes: A double-blind randomized controlled trial  
Molani-Gol R, Rafrat M, Asghari Jafarabadi M, Aftabi-Yousefabad S, Shanebandi D · 2025
- 216 Vitamin D supplementation in obese Sri Lankan children: a randomized controlled trial  
Samaranayake DBDL, Adikaram SGS, Atapattu N, Kendaragama KMDLD, Seneviratne JTN, Jayasekera HD et al. · 2020
- 217 A randomized double-blinded placebo controlled trial of ergocalciferol 40,000 versus 100,000 IU per week for vitamin D inadequacy in institutionalized postmenopausal women  
Mueangpaisarn P, Chaiamnuay S · 2020
- 218 Effects of 12-Week Multivitamin Supplementation on Serum Folate Levels in Pre-Menopausal Females  
Osburn S, Roberson P, Medler J, Shake J, Arnold R, Alamdari N et al. · 2020
- 219 Vitamin D in the prevention of left ventricular remodelling after an acute myocardial infarction: a randomized clinical trial  
Tuñón J, Rodríguez-López C, Balaguer J, Gómez-Talavera S, Rojas A, Salamanca J et al. · 2026
- 220 Does inflammation moderate the effect of vitamin D supplementation on depressive symptoms? Results of an interventional study in children and adolescents  
Schlarbaum L, Jankovic N, Bühlmeier J, Hohoff E, Dankers R, Engler H et al. · 2026
- 221 Supplemental 25-Hydroxycholecalciferol Is More Effective than Cholecalciferol in Raising Serum 25-Hydroxyvitamin D Concentrations in Older Adults  
Graeff-Armas LA, Bendik I, Kunz I, Schoop R, Hull S, Beck M · 2020
- 222 Combined effect of pulmonary rehabilitation and vitamin D supplementation on pulmonary function tests in asthma patients  
Fatima A, Saxena R, Singh DK, Gupta S · 2026
- 223 Impact of vitamin D supplementation on disease severity and visual acuity in pediatric vernal keratoconjunctivitis (VKC) Vitamin D Supplementation in Vernal Keratoconjunctivitis  
K S, V KC, S AK, Acharya P, S SB, K NP et al. · 2026
- 224 Efficacy of daily 4,000 International Units (IU) versus 6,000 IU of oral vitamin D<sub>3</sub> in vitamin D deficient children with overweight and obesity: An open-label randomized controlled trial  
Setia P, Seth A, Singh R, Malhotra RK, Singh P · 2025
- 225 Therapeutic high-dose vitamin D for vitamin D-deficient severe COVID-19 disease: randomized, double-blind, placebo-controlled study (SHADE-S)  
Singh A, Rastogi A, Puri GD, Ganesh V, Naik NB, Kajor K et al. · 2024
- 226 Dietary supplements to reduce symptom severity and duration in people with SARS-CoV-2: a double-blind randomised controlled trial  
Seely D, Legacy M, Conte E, Keates C, Psihogios A, Ramsay T et al. · 2023
- 227 Effect of cholecalciferol supplementation on CVD, inflammation and bone metabolism markers in CKD: results of feasibility phase of randomized double blind controlled placebo trial  
Kamboj K, Manoharan K, Sharma S, Khera H, Shafiq N, Kohli HS et al. · 2024
- 228 The effect of vitamin D on renin-angiotensin system activation and blood pressure: a randomized control trial  
McMullan CJ, Borgi L, Curhan GC, Fisher N, Forman JP · 2017
- 229 Efficacy of high-dose vs. low-dose vitamin D<sub>3</sub> supplementation in children with chronic tic disorders: a randomized controlled trial  
Mohamed ZA, Bai M, Dong H, Xue Y, Jia F, Feng J · 2025

- 230 Effect of vitamin D as Nutrition Supplement on Patients with Prolonged Ventilation due to Ventilator Associated Pneumonia and Sepsis Followed Severe Traumatic Lung Contusion: A Randomized Controlled Trial  
Allam MGIM, Alfeky AA, Abouleounr ASE, Hemaïdah EGS, Adawy Z, Ramadan HSI et al. · 2026
- 231 Vitamin D Supplementation Improves Pathological Complete Response in Breast Cancer Patients Undergoing Neoadjuvant Chemotherapy: A Randomized Clinical Trial  
Omodei MS, Chomicioviki J, Buttros DAB, Almeida-Filho BS, Carvalho-Pessoa CP, Carvalho-Pessoa E et al. · 2025
- 232 The effectiveness of vitamin D supplementation in alleviating diabetes distress among patients with vitamin D deficiency at hospital putrajaya: an open label randomised controlled trial  
Cheng WM, Hussein Z · 2025
- 233 Evaluation of efficacy of cholecalciferol and silymarin in improving lower urinary tract symptoms of benign prostatic hyperplasia: A double-blind, randomized, controlled trial  
Valipour R, Narouie B, Momeni H, Radpour N, Torabinaïd P, Momeni A et al. · 2024
- 234 Effectiveness of vitamin D2 supplementation on high-sensitivity C-reactive protein and other metabolic indices in menopausal Thai women: a randomized-controlled trial  
Indhavivadhana S, Boonyachan W, Rattanachaiyanont M, Wongwananuruk T, Techatrakais K, Sa-Nga-Areekul N · 2022
- 235 The Clinico-Radiological Effect of Vitamin D in Treatment of Osteoarthritis of the Knee: A Randomized Control Trial  
Singh S, Saraf A, Singh S, Kumar SK · 2025
- 236 Combined vitamin D and magnesium supplementation does not influence markers of bone turnover or glyceamic control: A randomized controlled clinical trial  
Dall RD, Cheung MM, Shewokis PA, Altasan A, Volpe SL, Amori R et al. · 2023
- 237 Exploring the synergistic effects of vitamin D and synbiotics on cytokines profile, and treatment response in breast cancer: a pilot randomized clinical trial  
Tirgar A, Rezaei M, Ehsani M, Salmami Z, Rastegari A, Jafari E et al. · 2024
- 238 Potential Modulation of Inflammation and Physical Function by Combined Probiotics, Omega-3 Supplementation and Vitamin D Supplementation in Overweight/Obese Patients with Chronic Low-Grade Inflammation: A Randomized, Placebo-Controlled Trial  
Kopp L, Schweinlin A, Tingö L, Hutchinson AN, Feit V, Jähnichen T et al. · 2023
- 239 "Effect of calcifediol treatment and best available therapy versus best available therapy on intensive care unit admission and mortality among patients hospitalized for COVID-19: A pilot randomized clinical study"  
Entrenas Castillo M, Entrenas Costa LM, Vaquero Barrios JM, Alcalá Díaz JF, López Miranda J, Bouillon R et al. · 2020
- 240 Vitamin D deficiency and effect of treatment on seizure frequency and quality of life parameters in patients with drug-resistant epilepsy: A randomized clinical trial  
Chassoux F, Navarro V, Quirins M, Laurent A, Gavaret M, Cousyn L et al. · 2024
- 241 Effects of cholecalciferol supplementation on depressive symptoms, C-peptide, serotonin, and neurotrophin-3 in type 2 diabetes mellitus: A double-blind, randomized, placebo-controlled trial  
Putranto R, Setiati S, Nasrun MW, Witjaksono F, Immanuel S, Subekti I et al. · 2024
- 242 Effects of a multicomponent resistance-based exercise program with protein, vitamin D and calcium supplementation on cognition in men with prostate cancer treated with ADT: secondary analysis of a 12-month randomised controlled trial  
Mundell NL, Owen PJ, Dalla Via J, Macpherson H, Daly RM, Livingston PM et al. · 2022
- 243 Effect of a combination of genistein, polyunsaturated fatty acids and vitamins D3 and K1 on bone mineral density in postmenopausal women: a randomized, placebo-controlled, double-blind pilot study  
Lappe J, Kunz I, Bendik I, Prudence K, Weber P, Recker R et al. · 2013
- 244 Effectiveness of SOLIUS UVB Light System in Enhancing Serum 25-Hydroxyvitamin D Concentrations: A Randomized Controlled Trial  
Shirvani A, Holick MF · 2025
- 245 Is Vitamin D Supplementation Effective in Prevention of Recurrent Urinary Tract Infections in the Pediatrics? A Randomized Triple-Masked Controlled Trial  
Merrikhi A, Ziaei E, Shahsanai A, Kelishadi R, Maghami-Mehr A · 2018
- 246 Inflammation (IL-1β) Modifies the Effect of Vitamin D and Omega-3 Long Chain Polyunsaturated Fatty Acids on Core Symptoms of Autism Spectrum Disorder-An Exploratory Pilot Study†  
Mazahery H, Conlon CA, Beck KL, Mugridge O, Kruger MC, Stonehouse W et al. · 2020
- 247 Adjunctive vitamin D supplementation in women receiving dienogest therapy for endometriosis: a randomized controlled trial  
Shabani F, Hajizadeh K, Hesami M, Shaseb E, Rahmani V, Nasirkandy MP et al. · 2026
- 248 Alcohol use disorder and muscle weakness: Original study of the effect of vitamin D supplementation in ambulatory participants with alcohol use disorder  
Wijnia JW, Wierdsma AJ, Oudman E, Oey MJ, Groen J, Beuman C et al. · 2024
- 249 The effect of vitamin D and magnesium supplementation on the mental health status of attention-deficit hyperactive children: a randomized controlled trial  
Hemamy M, Pahlavani N, Amanollahi A, Islam SMS, McVicar J, Askari G et al. · 2021
- 250 Effect of Vitamin D and Magnesium Supplementation on Behavior Problems in Children with Attention-Deficit Hyperactivity Disorder  
Hemamy M, Heidari-Beni M, Askari G, Karahmadi M, Maracy M · 2020
- 251 Positive Effect of Vitamin D and Magnesium Supplementation on Mental health Status of Attention-Deficit Hyperactive Children; A Randomized Double blind Controlled Clinical Trial  
Hemamy M, Pahlavani N, Askari G, Malekahmadi M · 2020
- 252 Effect of Monthly and Bi-Monthly 50,000 International Units (IU) Maintenance Therapy With Vitamin D3 on Serum Level of 25-Hydroxyvitamin D in Adults: A Randomized Controlled Trial  
AlAtteeq MA, AlShail A, AlZahrani A, AlNafisah O, Masuadi E, Alshahrani A · 2021
- 253 Effect of two vitamin D repletion protocols on 24-h urine calcium in patients with recurrent calcium kidney stones and vitamin D deficiency: a randomized clinical trial  
Sardari Masihi L, Borumandnia N, Taheri M, Basiri A, Imani H, Jalali S et al. · 2023
- 254 Does vitamin D supplementation improve bone health, body composition and physical performance beyond endurance exercise in patients with type 2 diabetes: A secondary analysis of randomized controlled trial  
Sun X, Xiao W, Li Z, Zhou S, Dong M, Huang C et al. · 2022
- 255 Effect of vitamin D supplementation on clinical outcomes of patients with Parkinson disease: A randomized controlled study  
Anamnart C, Kitjarak R · 2026
- 256 Combined Effects of Physiotherapy and Vitamin D Supplementation on Pain, Disability, and IL-6 Expression in Chronic Low Back Pain: A Randomized Controlled Trial  
Albalwi AA, Al Amer HS, Mir R, Mohamed SHP, Javid J, Mir MM et al. · 2026
- 257 Combined oral supplementation with magnesium plus vitamin D alleviates mild to moderate depressive symptoms related to long-COVID: an open-label randomized, controlled clinical trial  
Rodríguez-Morán M, Guerrero-Romero F, Barragán-Zuñiga J, Gamboa-Gómez CI, Weyman-Vela Y, Arce-Quñones M et al. · 2024
- 258 Comparison between Acupuncture and Nutraceutical Treatment with Migratens<sup>®</sup> in Patients with Fibromyalgia Syndrome: A Prospective Randomized Clinical Trial  
Schweiger V, Secchettin E, Castellani C, Martini A, Mazzocchi E, Picelli A et al. · 2020
- 259 Dose-response effects of supplementation with calcifediol on serum 25-hydroxyvitamin D status and its metabolites: A randomized controlled trial in older adults  
Vaes AMM, Tieland M, de Regt MF, Wittwer J, van Loon LJC, de Groot LCPGM · 2018
- 260 One year B-vitamins increases serum and whole blood folate forms and lowers plasma homocysteine in older Germans  
Kirsch SH, Herrmann W, Kruse V, Eckert R, Gräber S, Geisel J et al. · 2015
- 261 The Effect of Vitamin D Supplementation on Ankle-brachial Index in Patients with Type 2 Diabetes: A Randomized Clinical Trial  
Yekefallah L, Jalalpour A, Aghakhanbeigi F, Namdar P, Mafi MH · 2025
- 262 The immune cell transcriptome is modulated by vitamin D<sub>3</sub> in a randomized, placebo-controlled trial  
supplementation in people with a first demyelinating event participating in a randomized placebo-controlled trial  
Yeh WZ, Gresle M, Lea R, Taylor B, Lucas RM, Ponsonby AL et al. · 2024
- 263 Combined Effects of Combined Resistance Exercise and Vitamin D Supplementation on Cardiometabolic Profiles and Functional Capacities in Elderly Women with Type 2 Diabetes  
Kim HJ, Yoo DS, Lee MG · 2026
- 264 Synergistic Effects of Combined Resistance Exercise and Vitamin D Supplementation on Cardiometabolic Profiles and Functional Capacities in Elderly Women with Type 2 Diabetes  
Kim H, Yoo D, Lee M · 2026
- 265 Effect of Medically Supervised Prolonged Fasting Therapy on Vitamin D, B12, Body Weight, Body Mass Index, Vitality and Quality of Life: A Randomized Control Trial  
Tewani GR, Silwal K, Sharma G, Yadav D, Siddiqui A, Kriplani S et al. · 2022
- 266 Preventive treatment with alendronate of loss of bone mineral density in acute traumatic spinal cord injury. Randomized controlled clinical trial  
Fernández Dorado MT, Díaz Merino MDS, García Marco D, Cuenca Boy R, Blanco Samper B, Martínez Dhier L et al. · 2022
- 267 Effect of Vitamin D Supplementation Regimens on Fracture Healing and Serum Biomarker Profile in Long-Bone Fractures: A Prospective Randomized Study  
Selvaraj NV, Alsaifi MS, Singh SK, Kamra P, Vaithinathan P, Alsalahi RA · 2026
- 268 Efficacy of two calcifediol supplementation regimens in older adults post-hip fracture surgery. A clinical trial  
Cuadra-Llopert L, Salvà Casanovas A, Cerdà Mas G, Jovell-Fernández E · 2026
- 269 Positive Effects of Vitamin D Supplementation in Patients Hospitalized for COVID-19: A Randomized, Double-Blind, Placebo-Controlled Trial  
De Niet S, Trémège M, Coffiner M, Rousseau AF, Calmes D, Frix AN et al. · 2022
- 270 Isoflavones, calcium, vitamin D and inulin improve quality of life, sexual function, body composition and metabolic parameters in menopausal women: result from a prospective, randomized, placebo-controlled, parallel-group study  
Vitale SG, Caruso S, Rapisarda AMC, Cianci S, Cianci A · 2018
- 271 An 8-Week Vitamin D3-Fortified Fruit Drink Supplementation Increases Serum Ferritin Concentration: A Randomized Controlled Trial in Malaysian Women With Low Iron Stores  
Suhaimi NA, Loh SP, Ab Manan N, Zalbahr N, Mohamad Alwi MN, Ahmad Fuzi SF · 2024
- 272 Role of vitamin D supplement adjunct to topical benzoyl peroxide in acne: a randomized double-blinded controlled study  
Ruikchuchit T, Juntongjin P · 2024
- 273 No discernible effect of vitamin D supplementation on secondary outcomes in chronic spinal cord injury: Findings from a randomized controlled trial  
Hertig-Godeschalk A, Flueck JL, Scheel-Sailer A, Perret C, Brinkhof MWG · 2025
- 274 Efficacy of Vitamin D3 Supplementation in Elevating Circulating 25(OH)D Concentration in Individuals With Chronic Spinal Cord Injury (VitD-SCI): Evidence From a Randomized, Double-Blind, Placebo-Controlled Trial  
Hertig-Godeschalk A, Brinkhof MWG, Perret C, Scheel-Sailer A, Flueck JL · 2025
- 275 Does Consuming Fresh Ultraviolet Light-Exposed Mushrooms Offset the Seasonal Decline in Serum Total 25OHD in Adults Classified as Overweight and Class I Obese? Results from a Randomized Controlled Trial  
Comboni LM, Glover ES, Napolitano SC, Fleet JC, Foti D, Olson MR et al. · 2026
- 276 Effect of vitamin D supplementation on metabolic syndrome and atherosclerosis biomarkers in epilepsy: a randomized controlled trial  
Handayani S, Hafy Z, Octaviana F, Ali Z, Parisa N, Budikayanti A et al. · 2026
- 277 Comparative evaluation of the effects of diclofenac sodium and vitamin D supplementation on symptoms in individuals with myofascial pain and vitamin D deficiency: a randomized controlled clinical trial  
Kahraman NH, Tunç SK · 2025
- 278 Effect of supplementation with vitamins D3 and K2 on undercarboxylated osteocalcin and insulin serum levels in patients with type 2 diabetes mellitus: a randomized, double-blind, clinical trial  
Aguayo-Ruiz JI, García-Cobián TA, Pascoe-González S, Sánchez-Enríquez S, Llamas-Covarrubias IM, García-Iglesias T et al. · 2020
- 279 Ergocalciferol and microcirculatory function in chronic kidney disease and concomitant vitamin D deficiency: an exploratory, double blind, randomized controlled trial  
Dreyer G, Tucker AT, Harwood SM, Pearse RM, Raftery MJ, Yaqoob MM · 2014
- 280 Ergocalciferol in New-onset Type 1 Diabetes: A Randomized Controlled Trial  
Nwosu BU, Parajuli S, Jasmin G, Flesham J, Sharma RB, Alonso LC et al. · 2022
- 281 Multistrain Probiotics Plus Vitamin D Improve Gut Barrier Function and Gut Microbiota Composition in Irritable Bowel Syndrome Without Constipation: Results from a Double-Blind, Randomized, Placebo-Controlled Trial  
Laterza L, Cremon C, Coppola G, Settanni CR, Maresca R, Strazzeri M et al. · 2025
- 282 A Comparison and Safety Evaluation of Micellar versus Standard Vitamin D3 Oral Supplementation in a Randomized, Double-Blind Human Pilot Study  
Solnier J, Chang C, Zhang Y, Kuo YC, Du M, Roh YS et al. · 2024
- 283 High-Dose Vitamin D and Early Chronic Pancreatitis-Related Changes After Acute Pancreatitis: A Randomized Dose Controlled Trial  
Parhiala M, Aronen A, Ukkonen M, Haukijärvi E, Pappinen P, Rinta-Kiikka I et al. · 2026
- 284 The prognosis of patients with myocardial infarction after light therapy: A preliminary study  
Chin WC, Huang YS, Wu LS, Lee KT, Ho CT, Lin C et al. · 2025

- 285 **Vitamin D3 Supplementation Enhances Symptom Relief and Modulates Microbiome and Immune Responses in Pediatric Post-Acute Sequelae of COVID-19: A Randomized Controlled Trial**  
Chen P, Liu T, Chuang Y, Hsu Y, Chen Y, Lin C et al. · 2026
- 286 **Effect of a glucosamine-based combination supplement containing chondroitin sulfate and antioxidant micronutrients in subjects with symptomatic knee osteoarthritis: A pilot study**  
Nakasone Y, Watabe K, Watanabe K, Tomonaga A, Nagaoka I, Yamamoto T et al. · 2011
- 287 **[Therapeutic effect of vitamin D supplementation in mexican patients with allergic rhinitis]**  
Rivero-Yeverino D, Payan-Diaz JH, López-García AI, Papaqui-Tapia JS, Caballero-López CG, Ríos-López JJ et al. · 2024
- 288 **Effects of high- vs low-dose native vitamin D on albuminuria and the renin-angiotensin-aldosterone system: a randomized pilot study**  
Krummel T, Ingwiller M, Keller N, Prinz E, Charlin E, Bazin D et al. · 2022
- 289 **Concurrent effects of high-intensity interval training and vitamin D supplementation on bone metabolism among women diagnosed with osteoporosis: a randomized controlled trial**  
Alghadir AH, Gabr SA, Iqbal A · 2025
- 290 **Effects of Macuprev® Supplementation in Age-Related Macular Degeneration: A Double-Blind Randomized Morpho-Functional Study Along 6 Months of Follow-Up**  
Parravano M, Tedeschi M, Manca D, Costanzo E, Di Renzo A, Giorno P et al. · 2019
- 291 **Effect of Treating Vitamin D Deficiency in Uncontrolled Type 2 Diabetes: A Randomized, Placebo-Controlled Study**  
Lo MC, Abushamat L, Mramba LK · 2019
- 292 **PROTECTIVE-D-a feasibility randomised controlled trial examining the effect of a positive mood intervention and vitamin D supplementation on the immunological responses to influenza vaccination in older adults**  
Royal S, Ayling K, Hopkins G, Fairclough LC, Vedhara K · 2026
- 293 **High-dose vs standard-dose vitamin D and sleep in early childhood: A randomized clinical trial**  
Seppälä V, Holmlund-Suila E, Hauta-Alus H, Sandboge S, Kajantie E, Rosendahl J et al. · 2026
- 294 **Early life vitamin D and neurocognitive abilities at age 6-8 years: a randomized clinical trial and observational analysis**  
Seppälä V, Sandboge S, Holmlund-Suila E, Hauta-Alus H, Lintula S, Kajantie E et al. · 2026
- 295 **A Combination of Whey Protein and Vitamin D Reduces Sarcopenia in Patients with Chronic Obstructive Pulmonary Disease. A Randomized Controlled Trial**  
Qaisar R, Khan IU, Ahmad F, Karim A · 2026
- 296 **Investigation of the Effect of Vitamin D Supplementation on Apical Lesion Healing Rate: Prospective, Randomised Clinical Trial**  
Maraş E, Arıcıoğlu B, Beyazal Polat H, Arpa M, Günaçar DN, Köse TE · 2026
- 297 **Vitamin D and calcium prevent bone loss in vitamin D-deficient chronic hepatitis B patients treated with tenofovir disoproxil fumarate: A randomized controlled trial**  
Athakittmongkol T, Chotiyaputta W, Lertwattanarak R, Sritippayawan S, Banditniyamon W, Tanwadee T · 2026
- 298 **High-dose Vitamin D<sub>3</sub> supplementation and glycaemic control in adult males with Type 2 diabetes: a randomised placebo-controlled trial**  
Nasr MH, Abdurassool Hassan B, Othman N, Karuppannan M, Hussain SM, Abdulaziz NB et al. · 2026
- 299 **Effects of vitamin D supplementation on metabolic factors, serum omentin-1, and anthropometric indices in middle-aged women with prediabetes: a double-blind randomized controlled trial**  
Molani-Gol R, Refraf M, Asghari Jafarabadi M, Aftabi-Yousefabad S · 2025
- 300 **Effect of vitamin D supplementation on skeletal muscle function and quality of life in patients with chronic intestinal failure: a randomized controlled trial : Clean version**  
Gao X, Liu S, Zhang Y, Xia Y, Liu S, Qi X et al. · 2025
- 301 **Impact of high-dose vitamin D supplementation initiated shortly after diagnosis on residual beta cell function and partial remission rates in children with type 1 diabetes**  
Nallapu C, Dayal D, Sachdeva N, Kumar M, Attiri SV · 2025
- 302 **Daily versus fortnightly oral vitamin D3 in treatment of symptomatic vitamin D deficiency in children aged 1-10 years: An open labelled randomized controlled trial**  
Mondal KAP, Singh P, Singh R, Malhotra RK, Seth A · 2024
- 303 **Correlation Between Reduced IL-1β Levels in Acne Lesions and the Decrease in Acne Inflammatory Lesions Following Topical Vitamin D Administration: A Double-Blind Randomized Controlled Trial**  
Dahlan NH, Sitohang IBS, Indriatmi W, Wibowo H, Enggy LE · 2024
- 304 **Safety and Efficacy of Topical Vitamin D in the Management of Dry Eye Disease Associated With Meibomian Gland Dysfunction: A Placebo-Controlled Double-Blind Randomized Controlled Trial**  
Hassanpour K, Langari F, Akbarzadeh AR, Kanavi MR, Barani M, Kheiri B et al. · 2024
- 305 **Vitamin D and marine omega 3 fatty acid supplementation and incident autoimmune disease: VITAL randomized controlled trial**  
Hahn J, Cook NR, Alexander EK, Friedman S, Walter J, Bubes V et al. · 2022
- 306 **Effect of Cholecalciferol Supplementation on the Clinical Features and Inflammatory Markers in Hospitalized COVID-19 Patients: A Randomized, Open-Label, Single-Center Study**  
Karonova TL, Golovatyuk KA, Kudryavtsev IV, Chernikova AT, Mikhaylova AA, Aquino AD et al. · 2022
- 307 **Efficacy of plain cholecalciferol versus ergocalciferol in raising serum vitamin D level in Thai female healthcare workers**  
Amphansap T, Therdyothin A, Stitkitti N, Nitiwarangkul L, Phiphobmongkol V · 2022
- 308 **Standard and high dose ergocalciferol regimens for treatment of hypovitaminosis D in epileptic children and adolescents**  
Vichutavate S, Suwanpakdee P, Likasitthananon N, Numbenjapon N, Nabangchang C, Phatarakijirund V · 2022
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Nata N, Siricheepchaiyan W, Supasynndh O, Satirapoj B · 2022
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Sriphoosanaphan S, Thanapirom K, Kerr SJ, Suksawatamnuay S, Thaimai P, Sittisomwong S et al. · 2021
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Bezerra Espinola MS, Bilotta G, Aragona C · 2021
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Dalla Via J, Owen PJ, Daly RM, Mundell NL, Livingston PM, Rantalainen T et al. · 2021
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Borgi L, McMullan C, Wohlhueter A, Curhan GC, Fisher ND, Forman JP · 2017
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Small BJ, Rawson KS, Martin C, Eisel SL, Sanberg CD, McEvoy CL et al. · 2014
- 315 **[Effect of milk product with soy isoflavones on quality of life and bone metabolism in postmenopausal Spanish women: randomized trial]**  
García-Martin A, Quesada Charneco M, Álvarez Guisado A, Jiménez Moleón JJ, Fonollá Joya J, Muñoz-Torres M · 2012
- 316 **Soy isoflavones have a favorable effect on bone loss in Chinese postmenopausal women with lower bone mass: a double-blind, randomized, controlled trial**  
Chen YM, Ho SC, Lam SS, Ho SS, Woo JL · 2003
- 317 **Clinical and Immunological Effects of Systemic Vitamin D Supplementation in Vitamin D-Deficient Dry Eye Disease: A Prospective Comparative Study**  
Aslanova V, Huseynli S · 2026
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Bhandari R, Aguayo-Hiraldo P, Malvar J, Cheng K, Sacapano A, Abdel-Azim H et al. · 2021
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Kareem IMA, Ibrahim IM, Mohammed SFF, Ahmed AA · 2019
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Wang Y, Sha S, Gwenzi T, Schöttker B, Brenner H · 2026
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Yao S, Chua AV, Sheng H, Zimbalist A, Hill JW, Roh JM et al. · 2026
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Moutzouri E, Beglinger S, Feller M, Eichenberger A, Dalleur O, Knol W et al. · 2025
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Harreiter J, Gisinger T, Mendoza LC, Simmons D, Desoye G, Devlieger R et al. · 2026
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Yu M, Neate S, Nag N, Bevans W, Jelinek G, Simpson-Yap S et al. · 2024
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Alkhalaf ZM, Mumford SL, Schisterman EF, Silver RM, Thoma ME · 2026
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Alcala-Diaz JF, Limia-Perez L, Gomez-Huelgas R, Martin-Escalante MD, Cortes-Rodriguez B, Zambrana-Garcia JL et al. · 2021
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Boyd SS, Hecker J, Mirzakhani H, DeMeo DL, Weiss ST, Halu A · 2026
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Li J, Hong X, Chi M, Kho AT, Zhu Z, Zhang H et al. · 2026
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Kobayashi H, Amrein K, Mahmoud SH, Lasky-Su JA, Christopher KB · 2024
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Gariballa S, Shah I, Yasin J, Alessa A · 2022
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McLeod C, Ebeling MD, Baatz JE, Shary JR, Mulligan JR, Wagner CL · 2022
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Fadda G, Germain MJ, Broumand V, Nguyen A, McGarvey N, Gitlin M et al. · 2021
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Galus W, Winder M, Owczarek AJ, Walawska-Hrycek A, Rzepka M, Kaczmarczyk A et al. · 2025
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Khajedaluae AR, Rajati M, Tabatabaei D, Jafarzadeh S, Tabesh H, Afzalzadeh MR et al. · 2026
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Basti A, Zgaga L, Doubelt I, Soowamber M, Pagnoux C · 2026
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Jungreis I, Kellis M · 2020
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Amrein K, Kim SH, Brath H, Fasching P, Pittas AG · 2026
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Sarıc L, Domazet Bugarin J, Dosenovic S · 2024
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Nwosu BU · 2022

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