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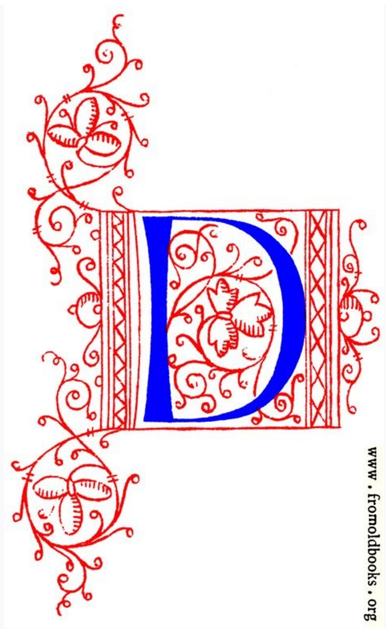

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Vitamin D Chemische Strucuur µ Molecular Vitamin D3 Model Zo, Het Mensen En Dieren Geprodrodrode Farmaceutischeis Gegevens metabolicie hepatische, kidney halwaardiyejd, disc, t1/2) 50 dagen uitscheal gerk, t1/2) t1/2) t1/2) 2) 50 Dagen Uitscheal Gerkam, T1/2) 50 Dagen Uitscheal Gerk (T1/2), Osteoporosis, Vitamin D Default Database ATC Code A11CC Farmin D. Medicine D014807 Medical Products All should everyone take vitamin D in winter? - Vitamin D, Flanders University, is a group of fat -soluble organic compounds responsible for the absorption of calcium and phosphate from food, which plays an important role in various biological processes. The two main forms are vitamin D3 (animal form) and vitamin D2. The term vitamin D also means metabolites of these substances and other analogues. Vitamin D3 can be produced in the human body in ultraviolet rays. [1] In the classic interpretation of the term "vitamin", this means that vitamin D cannot be considered a real vitamin. However, in most cases, endogenous synthesis is inadequate and people's remains depend on the supply of external sources, so they are usually considered vitamin. [2] Vitamin D, which is formed in the body or with food is not yet physiologically active. Only after enzymatic transformation in the liver and kidneys does it convert to active form (calcitriol). Active vitamin D from the bloodstream is transported to all body tissues as a hormone. Promotes the absorption of calcium, phosphate and magnesium from the intestine. These nutrients are particularly important for the growth of bone, dental and muscle tissue. Vitamin D deficiency can occur due to insufficient intake and underdevelopment. Liver and kidney problems can also disrupt vitamin D absorption and metabolism. Its deficiency reduces bone mineralization and eventually causes bone -related disorders such as rheumatoid arthritis and osteoporosis. In addition to these vitamin D functions, it plays a role in cardiovascular disease, autoimmune diseases and cancer. [3] However, there is no strong consensus on health effects. [4] Biochemistry produces different formsThe chemical structure of Vitamin Dmekuly Dmekuly molecule of the vitamin molecules Mensen Energ Wordt Geproduit FarracEutische Gegevens Metabolisatia Helik, Goleon, Gole-Cun-Cun-Cunun, Cunun, CA. , Osteoporosis, by default, the code of the database of vitamin D A11CC Pharmacotherapeutic compass vitamin D and analog network D014807 Portal - Medicine or Vitamin D should be taken by anyone? - Vitamin D at the University of Flanders is a group of fat -takov organic compounds responsible for the absorption of calcium and food phosphate, which plays an important role in various biological processes. The two most important forms are vitamin D3 (animal shape) and vitamin D2. The term vitamin D also applies to metabolites and other analogues of these substances. Vitamin D3 in the human body can develop under the influence of ultraviolet light. [1] In the classical interpretation of the term “vitamin”, this will mean that vitamin D cannot actually be considered real vitamin. However, in most cases, endogenous synthesis is inadequate and still depends on the supply of external sources and, therefore, is usually considered vitamin. [2] Vitamin D, which is produced in the body or obtained using food, is not yet physiologically active. Only after enzymatic transformation in the liver, and then the kidneys its active form (calcitriol). Active vitamin D is transported to all body tissues in the form of hormones with beets. In the intestines, it contributes to the absorption of calcium, phosphate and magnesium from food. These nutrients are especially important for healthy bone, dental and muscle tissue. Vitamin D deficiency can be caused by insufficient consumption and inadequate sun. Problems with heat and kidneys can also interfere with the absorption of vitamin D and metabolism. The deficit causes a decrease in bone mineralization and, ultimately, bone disturbances, such as rickets and osteoporosis. In addition to these functions of vitamin D, the role is also focused on the role of cardiovascular diseases, autoimmune diseases and cancer [3], but there is no strong consensus on the influence of this vitamin D on health. [4] Biochemistry forms different formsVitamin D2 shows that the most important of them are vitamin D2 and vitamin D3. Vitamin D1: a 1:1 connection in ergocalciferol (D2) and lustreol. This name is no longer used. Vitamin D2: calciferol or ergocalciferol ($C_{28}H_{44}O$); This form is made from ergosterol (provitamin D2) in plant foods or mushrooms (for the most important foods such as cheese, mushrooms and yeast) and cannot be produced by the human body. [5] Vitamin D3 or cholecalciferol ($C_{27}H_{44}O$). This form can be found in animal products; However, 7-dehydrocholesterine (cholesterol) can also be formed in the skin due to a photochemical reaction to ultraviolet rays of sunlight. Vitamin D4: 22,23-dihydroergocalciferol (saturated form of vitamin D2) Vitamin D5: sitocalciferol (synthesized from 7-dehydrosterols) The difference between vitamin D2 and D3 is that in addition to an additional CH_3 group, D2 has one bond (between carbon atoms 22 22 and 23). In most mammals, including people, vitamin D3 is more effective than vitamin D2 in increasing the level of circulating calcidiol. Vitamin D3 is at least three and possibly ten times stronger than vitamin D2, sometimes due to its stronger binding to the vitamin D receptor. [6] Therefore, vitamin D3 is the preferred nutritional supplement for humans. Although vitamin D2 is still widespread, experts no longer consider it equivalent to vitamin D3. [5] With some animal species such as rats, however, vitamin D2 is more effective than vitamin D3. [7] Synthesis and Metabolism Almost all vitamin D in our body is produced in the skin from the body's own cholesterol, which has previously removed enzymes (at position 7, hence the name of this intermediate product). Form: 7-dehydrocholesterol))) 7-dehydrocholesterine is converted to provitamin D3 by B radiation from the sun, which is then converted to vitamin D3 by slow spontaneous isomerization. The highest concentration of 7-dehydrocholesterine can be found in the pitting and basal layers of the skin. In humans and most mammals, 7-dehydrocholesterine is used for the production of vitamin D (with the exception of cats). Vitamin D2 and vitamin D3 from food are rapidly absorbed in the small intestine.The hilomicrons are then transported through the lymphatic system in the venous cycle. He has a half -life of 19 to 25 hours. [8] During this time, it is either in adipose tissue or is hydroxylated in the liver up to 25 (OH) vitamin D3. Vitamin D (both D2 and vitamin D3), which is produced in the skin or from food, can then be rescued and released from fat cells. Vitamin D circulates throughout the body in the bloodstream, associated with the so -called "Vitamin Binding Protein" (VDBP). In the same way, it is also transported to the liver. Especially in the liver, but also in some other body tissues, Vitamin D3 (and D2) is converted into calcidiol (25-hydroxyivitamin D or simply 25-oH D3) using enzyme D3-25 hydroxylase. This vitamin D metabolite has low biological activity. Finally, calcidiol in the kidneys 25 hydroxyivitamin D3 1-alpha-hydroxylase (cytochrome P450-enenm) is converted into active hormone calandol (1α, 25-dihydroxiholciferol) in which the calitriol is formed in the gland. Adopter hormone, stimulates calcium and phosphorus in the blood. Vitamin D receptors can be found in intestinal and bone tissue, as well as in other tissues, especially in the brain, breast tissue, prostate tissue and lymphocytes. The conversion of vitamin D can be expressed in micrograms of ergocalciferol (vitamin D2) or micrograms of cholecalciferol (vitamin D3). In addition, it is usually produced in international units (abbreviated SV or IU), where 40 micrograms of SV correspond to ([9] vitamin D (especially calcitriol) functions in the body, it has several functions in the body: calcium metabolism: Calcitriol binds to the receptor receptor this receptor belongs to the receptor steroid receptors. Steroid receptors act as a protein transcription factor that can regulate gene expression, which means that calcium and phosphate levels in blood can be kept in narrow limits. Calcium and phosphate intake from food or stimulating or increasing calcium or phosphate excretion inhibit renal calcium and phosphate Due to the intestine.Due to the presence of calcitriol. Currently, much attention is paid to the additives of vitamin D in the elderly. Cholesterol metabolite body (7-dehydrocholesterin) in the production of vitamin D3 when exposed to UV-in part. Endogenous production is the most important source of vitamin D for many people. The body has the ability to produce vitamin D3. A person in a bathing suit, located in the sun until the skin turns red, increases the amount of vitamin D3 in the blood to such an extent that it consumes 10,000 (250 µg) of vitamin D in the form of a food supplement. [13] People living and working in a tropical climate produce about 10,000 IU (250 mcg) per day, which is much more than the recommended daily norm in the Netherlands and Belgium. The excessive effect of the sun does not cause the toxicity of vitamin D, because at some point a balance between production and degradation arises, so the excess of vitamin D turns into inactive products. [B] Everything that affects the content of UV radiation. The irradiation of the skin has a great impact on the production of vitamin D in the skin and, therefore, on the status of vitamin D. Solar energy: solar energy should be more than 3. Solar energy is a measure of ultraviolet (UV) radiation, which reaches land in sunlight. Contributing factors: latitude: in higher latitudes of the Earth, the atmosphere is filled with sunlight, especially in the winter months. In winter, the sun is too weak to develop vitamins “skin to the skin” on latitudes below 52 degrees in winter (regardless of weather and other conditions). People living and working in the tropics produce about 10,000 IU (250 µg) per day, which is 100 times higher than the recommended daily dose for adults in the Netherlands and Belgium. The height of the sun in the sky: the wavelengths produced by vitamin D in the skin occur at sea level in sunlight, when the sun is more than 45 degrees above the horizon.Solar energy is also more than 3. [14] In this regard, sufficient levels of vitamin D3 are produced on the skin for about 10-15 minutes, which occurs daily in the tropics and on average daily in spring and summer, but almost never in two polar circles, at least the field. The face, hands and preferably the upper body (without sunscreen), light at least twice a week. The highest position of the day (Zenith) is quite low in winter compared to summer. In winter and spring in our areas there are very few solar energy to contribute to the production of vitamin D in the skin. In summer, solar energy is often too low in the production of vitamin D at the beginning and late day. Clouds, moisture, dust, smoke and / or ozone in the atmosphere reduce the amount of ultraviolet ultraviolet radiation on Earth. Height above sea level: in the mountains, the sun shines much brighter than at sea level, since the rays have a shorter way through the atmosphere, and the air is cleaner. Ultraviolet ultraviolet radiation. Wave length: vitamin D of 7-dehydrocholesterol is formed in the skin when it is affected by ultraviolet light (ultraviolet ultraviolet ultraviolet value (ultraviolet ultraviolet value with a wavelength between 290 and 315 s (its synthesis peak is from 295 to 297 NM) (15). (15).].] [16] Solarium uv -b -buch, producing vitamin D, filtered because this UV spectr (responsible for the production of vitamin D3) can also cause red color, burns and skin cancer. When using the height of the sun or light therapy, such Ultraviolet radiation filtering does not occur. Nevertheless, Solarium users have much better vitamin D than those who do not do this. [17] behavior associated with the Sun: Life: Many people work mainly and live there. As soon as We appear, we are afraid of skin cancer, cover the skin or use sunscreen. People who avoid risk of the sun even in summer to experience vitamin D. Despite the sunny air And favorable latitudes, Miami suddenly lacks Vitamin D. [18] glass: home and automobile glass absorbs ultraviolet ultraviolet ultraviolet ultraviolet ultraviolet ultraviolet radiation. Skin coating: Netherlands (Nikab, Boerka, Chardor, Veil) usually wear the darker skin of a woman who complicate the creation of vitamin D.Suning creams or milk contain chemicals designed to block UVB rays, as this part of the UV spectrum (except for vitamin D) can cause redness of the skin or burns. The use of sunscreen with SPF 8 reduces vitamin D3 production by 97.5 %. [3] [19] SPF 15 inhibits vitamin D production of 99 %. [20] Skin condition: Pigmentation of the skin: Melanin in the skin acts as natural protection against burning, but also reduces the rate of vitamin D production. It can be suppressed up to 99 %. [20] The fact that people with bright skin tend to live in areas with a small amount of sunlight may be an evolutionary consequence because people with light skin are less likely to develop in these areas than dark skin people. On the other hand, the fact that dark skin people tend to live in areas with a large amount of sunlight may be the result of evolution, because people of dark skin in these areas have less likely to develop skin cancer than people of light skin. Skin aging: with age the skin is thinning and the skin's ability to produce vitamin D (7-dehydrocholesterol to previtamin D3) decreases. Basically white, healthy skin is able to produce large amounts of vitamin D relatively quickly.1 (white), 25 % of the body surface is exposed and 25 micrograms (1000 IU) vitamin D are prepared in the horizontal position. In the same latitudes, it cannot be maintained in any circumstances by sufficient vitamin D by sunlight. [22] Diet people do not receive enough vitamin D in the diet. [D] The good source of vitamin D is just a few foods. Foods that naturally contain vitamin D: the best sources of vitamin D are fatty fish such as: SECOM, SUMEC, Salmon (wild boar 25 µg per serving, salmon from farm farms 10 µg per serving), mackerel, sardines (15 µg).Portion), tuna, eel. Fish oil, in particular oils from fish stairs such as the trans liver. Egg yolk (on average 20 for egg yolk, the quantities vary and rarely exceed 1.25 µg (50 with) in egg yolk [3]). Ergoster (Provitamine D2) are mushrooms that can be converted into ecologically active ergocalciferol (vitamin D2), exposed to sufficient UV light. Therefore, crazyly removable mushrooms can be a good source of vitamin D, mushrooms that grow in low light conditions. Other plants can also contain traces of ergosterol. Vitamin D3 is also industrially obtained from the lichen. It is the only non -vital source of vitamin D3 and is important for vegans. Food with added foods of vitamin D with additional vitamin D is the most important source of this vitamin food. In the United States, it has been added to Lattiero -Caseari products since the 1930s, so the rachions are practically removed there. In the Netherlands, Vitamin D Margarine is added only up to 7.5 µg (300 ie). Over 100 grams of vitamin D in breast milk, the quantity of vitamin D similar substances in breast milk are particularly low and strongly dependent on the conditions of the mother's vitamin. Al-Hidroxyld 25 (Oh) Vitamin D3 constitute most of the anti-RAD breast milk activity. The levels of vitamin D in tall rear milk (which children drink last) are higher than the front milk. When a mother who lives in a greater latitude consumes 50 µg (2000) every day in winter, breast milk reaches the same anti-picks activity in the summer as disproportionate mothers. [25] If the mothers are already missing in subclinical vitamin D (since most western women live away from the equator and especially in Islamic communities), children are clearly facing a higher risk of vitamin D deficiency. Nutritional supplements of vitamin D in nutritional supplements are allowed for a maximum of 25 µg per day. If the instructions that use more than 15 µg of vitamin V per day are provided in the packaging outside: this dietary supplement is not suitable for children under the age of 10. [26] Vitamin D2 and D3 are food supplementsVitamin D2 in dietary supplements is synthesized by UV radiation from yeast ergosterol and vitamin D by UV radiation from lanolin (wool fat) 7-dehydrocholesterol (wool fat). Cod liver oil is also a good source of vitamin D. Almost all foods containing cod liver oil are supplemented with vitamins A and D, which are naturally present in cod liver oil (which can vary between different boots). The amount of these vitamins. Permanent (standard) vitamin A and D.-thiamine liver oil (where this standardization has not been carried out) is not known to be sold in the Netherlands or Belgium. [Source?] Dietary intake of vitamin D is highly dependent on the amount of UV B light that humans are exposed to. Therefore, it is difficult to make general recommendations. The recommended daily allowance (RDA) according to the European labeling directive is recommended at 10 µg of vitamin D (ADH value) every day. This value is also the value displayed when the percentage of ADH is provided in thought products. However, this ADH value does not take into account the user's age or gender. This difference is shown in 2018. Recommendations of the Health Board report (see Table). Recommended daily rate of vitamin D, MCG per day: Health Nutrition Standards Board 2018 Report [27] 1-3 years 4-8 years 9-13 years 14-18 years 19-8 years 19-70 years 51-70 years pregnancy during lactation male 5 10 10 10 --20 10-20 10-20 20 20 20 Women 5 10 10-20 10-20 10-20 20 20 20 20 Based on new scientific evidence, the Health Council increased the recommended amount of vitamin D for older people to reduce the risk of bone loss. [27] In 2008 the Health Council issued new advice recommending vitamin D supplements for a number of specifically mentioned groups, and more in 2000. The recommendation for dietary standards should be revised. [F] Board of Health. New dietary standards for vitamin D were developed in 2012 [29] However, various experts believe that the recommended daily intake of vitamin D is still too low. [G] [22] [32] [32] [33] Vitamin D recommendations based on 2008 Health Council report [28] Center for Nutrition recommended vitamin D supplementationDay 10 Micrograms Vitamin D supplementation for the following groups: [34] All children under 4 years of age. Therefore, it is systematically recommended in counseling centers to give supplemental vitamin D to breastfed children 50 years old with an extra cover per day): people with osteoporosis or on break or in nursing homes women over 70 years of age who are very 50 women who wear these doses, in In most cases, it is not enough to restore vitamin D levels from supplementation deficiency to normal levels. This requires doses far in excess of the recommended daily cartridges [33] (see table). It has been stated above that severe vitamin D deficiency in the Netherlands is common in the Netherlands. The fact that nutritional supplements in the Netherlands are subject to the legal maximum of 25 µg of vitamin D per day [26] is a limiting factor. Estimation of the daily (oral) doses of vitamin D required to achieve and maintain a serum calcium level of 80 nmol/l [33] daily oral dose 20-40 55 mcg (2200 IU) 40-60 45 mcg (1800 IU)) 60 -80 29 mcg (1160 IU) > 80 0 mcg (0 IU) Vitamin D Vitamin Vitamin D Vitamin Vitamin D status Possible indications for vitamin D status: Non-exclusive muscle aversion to osteoporosis treatment in bone osteoarthritis at high risk for osteoarthritis; Pregnant women, very old people, little exposure to the sun with hypercalcemia, rickets, osteomalacia. However, this is not a good measure for patients with severe renal insufficiency, since the intake is sufficient, but the activation of the kidneys does not occur. People from southern countries who are very exposed to the sun and do not completely cover the skin often have serum concentrations between 135 and 225 nmol/l. [35] The level of parathyroid hormone can also be an indicator. The vitamin D mirror is too low if the level of the parathyroid form increases. From point of viewIn France and the United States, the calculated mirror is currently intended for 75 Nmol/L or higher. According to the serey 75 nmol/l concentration, the body compensates for vitamin D deficiency in calcium balance by increasing the PTH level. [23] [36] In addition, the absorption of calcium in the intestines is inhibited at the level of vitamin D 75 Nmol/L. Calcitriol, an active form of vitamin D, is not a good indicator of the state of vitamin D, because its levels remain relatively constant, even in the case of vitamin D deficiency. Active determination of vitamin D can be interpreted in patients with kidney failure or kidney failure or kidney failure or renal failure or kidney failure or kidney failure or kidney failure or kidney failure or kidney failure or kidney failure patients. With a misunderstanding of hypercalcemia. Consequences for the health of various levels of calcium in serum (25 (OH) D3). [35] Concentration 25 (OH) D (ng/ml) concentration 25 (OH) D (nmol/l) Description of health consequences - 150> 325 internal vitamin, solotise solotor-infederated inter-brush, actually differ. Calcyol value 26 nmol/l in serum is considered, for example, at the VU Medical Center and in the Maastricht academic hospital, while the same importance at the Medical Center of the University of Groningen is considered insufficient: the main differences in the standard value of calcidiol used in Dutch, not in the laboratory commercial. [38] Laboratory reference cost 25 (OH) D V Groningen University Medical Center serum failure: 25-50 Nmol/L Hipovitaminosis D: 50-80 Nmol/L Medical Center Rijnmond Zuid, Rotterdam DeficiHen: -60 Nmol/Lendenst: 60 100 nmol /L INERIER DE GRAAFSSDZ Center, Delft Normal: 50-185 Nmol/L toxic:> 250 Nmol/L ISSELLAND HOSPITAL CAPELLE A/D IJSEL Normal:> 50 Nmol/L Leiden University Medical Center Normal: 30-120 NMOL/L V Normal: 25- 150 Nmol/L University Hospital Mastricht Normal: 25-110 NMOL/L, although the same method is used, it seems difficult to diagnose vitamin D deficiency. [39] In practice, prevent vitamin D deficiency, it seems very difficult for many populations groups to maintain sufficient vitamin D. , Jar, sheets, veil). However, even healthy young adults, about one -third, seem to have inadequate vitamin D state. [20] In the Netherlands, there is a deficiency of vitamin D in about half of all people over 65 years of age. [40] Studies have also shown that more than half of the Dutch, non -Western, pregnant and pregnant women and newborn babies are serious vitamin D deficiency. (Kalsidiol serum levels are below 20 Nmol). [41] In addition, family physicians were unaware of other things, as well as vitamin D in the Netherlands, only in summer and spring. [42] If the low limit of vitamin D status is set to 50 Nmol/L, approximately 36 %of healthy young people (18-29 years) are very low in vitamin D status and 42 %of women (15-49 years) are very low in vitamin D status If it occurs, it has dark skin color. 28-100 %of healthy adults in hospital in Europe and 70-100 %of the vitamin D status is very low. [20] In the Netherlands, one in three children has a deficiency of vitamin D (serum concentration is defined as the fact that concentration is below 50 Nmol/L). In addition to other things, this number is even higher for children from Morocco, Surinam, Turkey and the Green Nose Islands. [43] In countries such as the United Kingdom [44], the United States [45] and Norway [46], there is a deficiency of vitamin D especially in winter and spring. The causes of inadequate production of very little vitamin D: A common reason for very few vitamin D is that it is self -synthesized in an inappropriate way by the skin. that's whyIn the sun, clothing that covers the body, low sociability, reduced ability to produce age and other factors listed in this article (in sunlight). Alcoholism: Excessive alcohol consumption can alter vitamin D metabolism [47] Therefore, vitamin D deficiency is quite common in alcoholics. Fat disorders. Polymorphisms: Polymorphisms in the gene that encodes the vitamin D receptor can increase the need for vitamin D and thus increase the risk of osteoporosis, breast cancer, prostate cancer, and other disorders. [48] It is likely that this increased need and the negative effects of these polymorphisms are related to dietary supplements and/or regular sun exposure. With sufficient sunlight, vitamin D production is optimal, and vitamin D receptors are likely saturated, so polymorphisms in the gene encoding it have no physiological consequences for this receptor. In suboptimal vitamin D status, polymorphisms in this gene can have negative consequences, and vitamin D supplementation can prevent these consequences. The phenomenon of vitamin D deficiency Vitamin D deficiency during pregnancy is associated with the following bone damage: rickets or English disease, a childhood disease characterized by growth retardation and deformation of long bones. The bones bend under the weight, forming bowls or bangs. Osteomalization is a jerky disorder characterized by muscle weakness and bone thinning in adults. Myopathy: Muscle weakness, such as difficulty climbing stairs or getting up from a chair. Osteoporosis. Vitamin D deficiency is also associated with various chronic diseases such as B. Hypertension, tuberculosis, cancer, periodontitis, multiple sclerosis, chronic pain, depression, schizophrenia, seasonal affective disorder, vascular disease, and various autoimmune diseases, including type 1 diabetes .] [49] Vitamin D and osteoporosis – Osteoporosis, also called thinning of the bones, is associated with vitamin D deficiency. Low levels of vitamin D reduce the absorption of calcium from the intestines. This compensates for the higher release of the kicking hormone that is produced in the spine. However, parathyroid hormone also stimulates the brown cells of the bone.Can cause or worsen bone tissue and osteoporosis. Municipal doctors usually prescribe patients with 10 UG (400 IU) with vitamin D osteoporosis daily. Meanwhile, this dose should not be taken daily. In addition, it has been shown that the oral doses of 100,000 IU D (2500 UGs) significantly reduce the risk of fractures three times a year. [10] Fracture frequency occurs when the concentrations of calidiolo serums are the same or above 72 nmol/l, which is likely to cause both bone resistance and reduces the risk of falling from the stronger muscles. 52] [54] The main study of the American population showed that bone density increased by 25%at 25-90 nmol/l [55] at 25-hydrochivitamin D (calcidiol). Vitamin D and depression play an important role in the production of serotonin in the enzyme enzyme, which determines the velocity of serotonin synthesis with vitamin D and depression. This cannot cause optimal levels of these substances, but to low levels of serotonin, which can cause neuropsychiatric disorders such as depression in the brain. [56] While there are signs that depression is associated with low vitamin D levels, the effects of vitamin D integration into depression show that vitamin D integration (independently) is not an effective remedy for this condition. 57] [58] Vitamin D and other disorders were also found amazing contexts between low vitamin D and many disorders. This does not necessarily indicate a causal link, but it is an absolute source of research: multiple sclerosis autoimmune disease: there is a strong bond between width and multiple sclerosis, the disease reveals very little or all or total, and the incidence and incidence and incidence of incidence and frequency morbidity and incidence. , the prevalence, and the incidence, it increases as it is. The highest rate is in Northern Europe and Canada. In addition, there is a link between SM and sunlight per year. The disease itself shows the highest level of intensity fluctuations when spring is the highest level of disease activityvitamin D levels are at their lowest) and activity is lowest in the fall (when it is highest). There also seems to be a link with vitamin D intake: in coastal areas of Scandinavia, where relatively large amounts of fish and seafood are consumed, the disease is less common than in inland Scandinavia. Two large epidemiological studies, including the Nurses' Health Study, have shown an inverse association between vitamin D supplementation and MS. All of this suggests a link to vitamin D status, which has prompted researchers to further explore the link between MS and vitamin D. So far, studies [(since when?)] on vitamin D for MS have either been too small or have too many uncertainties. variables in order to draw clear conclusions[59]. Coronary heart disease: Vitamin D may play a role in the prevention and/or treatment of coronary heart disease. [60] As with cancer, an inverse relationship has been found between the incidence of heart disease and serum vitamin D levels. 62] Light therapy can help with psoriasis (and other skin conditions) by increasing the amount of vitamin D in the body. [63] Cancer Mortality from colon, breast, and prostate cancer is highest in the Northeastern United States, where residents live in large cities and receive less sunlight than in the Southern states. calcium prevention [64][65] 66] Type I diabetes: A 2001 Finnish study found that children who took 50 micrograms of vitamin D (2000 IU) a day had 80% fewer babies. he may have had type 1 diabetes. [67] Cardiovascular disease: Vitamin D deficiency is associated with an increased risk of hypertension and cardiovascular disease. A population of 1,739 people followed for five years found that those with low vitamin D levels were 62% more likely to develop heart failure. However, studies on the relationship between vitamin D and cardiovascular disease are conflicting.[68][69][70] Vitamin D Overdose Symptoms of Toxicity In the case of vitamin D poisoning, there is an excess of vitamin D in the body. Another term for this is hypervitaminosis D. ExtremeHigh doses of vitamin D can cause high blood calcium levels. This can cause the following problems: nausea and vomiting abdominal pain and excessive silk constipation, frequent consumption of alcohol and frequent urination irritability, confusion or depression tiredness and weakness general sleepiness of heart rhythm disorders pain in bones, poisoning from long -term vitamin D It can cause kidney stones and heart damage [71] acute toxicity vitamin D can be toxic and even fatal to very high doses. For example, in the United States, several people died after consuming milk accidentally enriched with too much vitamin D. [72] Chronic toxicity The maximum safe dose of vitamin D3 (with long -term use) is currently 50 µg (2000 IU) per day. According to a risk analysis of 2007, this could be increased by five times without reservations to 250 µg (10,000 IU) per day, [m] 100 times the current daily hiring recommended for people aged between 4 and 50 years For short -term use, much higher doses can be administered. For example, after an injection of 600,000 IU (15 mg), calcidiol levels increased from 2 ng/ml to 22 ng/ml in ten elderly subjects without signs of toxicity. These doses are not only safe, but are also recommended for the elderly to prevent vitamin D deficiency during the winter. [75] Poisoning from food supplements in the Netherlands and in Belgium it is practically impossible to obtain toxic quantities of vitamin D3 from food supplements. Vitamin D3 is toxic only to serum concentrations of calcidiol of 600 nmol per liter or more. [76] [77] These values are reached only with long -term consumption of over 40,000 IU (1,000 µg) of vitamin D3 per day, [76] which is 400 times the current daily assumption recommended for adults. Since in the Netherlands, food supplements can contain a maximum of 25 micrograms per day [26], the risk of overdose of vitamin D3 during the intake of a food supplement is practically eliminated in the Netherlands if you follow the recommended dosage. [26] n] Ergocalciferol (D2) has a previous toxicity than the D3, which has a much higher threshold of toxicity. It is not known with certainty as an overdose of vitamin D causi hypercalcemia. The binding capacity of the DBP is likely to increase at very high concentrations of CalcidioloAnd either it directly affects the transcription of the release of the gene (which is usually performed only with calcitriol), or with an unattractive fraction of calcitriol increases the expression of the gene. An overdose is unlikely to increase the concentration of calcitriol and increases the concentration of calcium in the traditional way. [77] Studies show that the risk of chronic vitamin D deficiency is much larger than the risk of excess, and even in people with clearly sufficient food consumption, the low level of vitamin D in the blood. [13] [22] The discovery of Edward Mellabi (1943), the leading researcher Vitamin D. Adolf Windows (1928), who was the pioneer of the opening of vitamin D. The opening of vitamin D is closely related to the search for the drug. [78] At the beginning of the 19th century, the disease became more frequent in Northern Europe and North America. The growth of the industry meant that most of the population performed their activities in closed areas, and not in the open air, unlike previous centuries. In the first half of the 20th century, a connection was discovered between racism, sunlight and vitamin D. In 1919, the effect of ultraviolet light improved the rash, two years later, the effects of sunlight by sunlight by the effects of sunlight have the same effect. Sunny on the sun's radiation exposure to sunlight in this area [80] British doctor Edward Mellabi began to examine the role of vitamin D and rusitism. In addition to the aforementioned development, he was convinced that he was also the result of nutritious failure. In 1919, he was able to prove that the rash could be treated with oil, milk and especially oil from the liver liver. [81] Since this is the fourth vitamin (after vitamins A, B and C), it was later called D. Vitamin in 1928 The Nobel Prize for Chemistry was awarded to Adolf Vyanauz, who discovered 7 -decleseril, pioneer vitamin V. years of the 20th century Most of the chemistry and biology of the preventive effects of oil from the liver liver were known. It was known that substances were contained in oil, and yeast could be made by radiation with ultraviolet light. YeastOr vitamin D2. A similar substance, cholecalciferol or vitamin D3, has proven to be converted into a substance similar to cholesterol by UV radiation. Especially after the Second World War, the Dutch government took many measures to improve the vitamin D status of the population. For example, "summer camps" have been created to strengthen pale noses (children with health problems), especially from disadvantaged social backgrounds. Then, it was feared that the poorest urban residents in general and their children in particular receive too little sun and therefore of vitamin D. D. -Vitamin - Status of the population. See also studies on plant sterols. Vitamin B B Mélanine shows that taking 100,000 doses of vitamin D every four months in elderly patients reduces the number of fractures by 22 % (compared to a placebo group). This corresponds to a daily dose of more than 800 IU. By examining the osteoporotic fractures typical of the hip, wrist, forearm and spine, the vitamin D group presented a 33 % reduction in the risk of fracture. [10] Several studies have been carried out on the toxicity of vitamin D. The lowest dose included in this review of studies was 250 µg (10,000 IU) of vitamin D measured at 25 (OH) D-D-SPEGEL 608 NMOL /L for 390 days. . [13] "Some researchers have placed the line further south, at an angle of approximately 45 degrees. In this issue of the American Journal of Clinical Nutrition, the main researchers in vitamin D express their frustration that research results In the field of vitamin D are in addition, D given that the current results of vitamin D tests show serum calcidiol levels of 75 nmol/l (30 ng/ml) or more, experts say they will discuss higher recommendations in vitamin D and safety standards with European and American health authorities. 23] Today, milk in the United States is enriched with 10 UG (400 IU) vitamin D per liter. glass of this milk provides 25% of the daily value of an adult. Also used in Finland, Norway, Sweden and Canada.Published. Supporting milk with vitamin D is prohibited in the Netherlands and Belgium. [24] This report proposes additional vitamin D consumption for children under 4 years of age, dark -skinned people, pregnant or breastfeeding women, women using curtains, women over 50 years of age and men over 70 years of age. The Health Council advises the development of information about the importance of additional vitamin D from dietary supplements and says that a review is needed as of 2000. Diet reference values for vitamin D have been developed by the Health Council. [28] For example, Dr. Lips stated that vitamin D levels of 80 Nmol/L (optimal) can only be reached at dose of 800 IU (20 µg), and that it is impossible for practical reasons (so in favor of an optimal level of 50-80 nmol/l). It also recommends that foods be reinforced with 400 IU (10 mcg) per day. Lips from 2008. Vitamin D Health Council Report. [30] The NHG standard published in October 2005 is according to the osteoporosis standard. This British Medical Journal article argues that at least 800 IU (20 µg) vitamin D supplements are required to prevent fractures and falling in older people living at home. [50] This work was not affected by the daily consumption of 400 IU per day. Vitamin D3 (maximum) in the elderly with an average age of 80 years of age at risk of femur neck fracture for 4 years. This convincing meta-analysis showed that vitamin D supplementation reduces the relatively risk of falling by 30 %. The results of the 800 IU daily were the most creditor. [52] This study shows that the daily dose of vitamin D D of 700 to 800 IU per day reduces the relative risk of the femur neck fracture compared to calcium or placebo. Studies with 400 IU per day did not show a significant difference. [53] - 21 clinical studies were evaluated in this risk assessment. Vitamin D doses used in these studies ranged from 10 to 250 µg/day. For this reason, authors apply to the Food and Nutrition Council to re -evaluate the maximum values available for vitamin D. [73] However, complex preparation of vitamins A and D, vitamins A and D, vitamin A may be overdose.

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