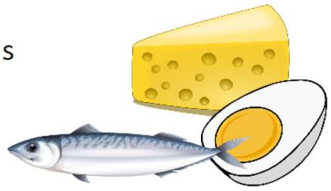
Vitamin D : For whom ? What dosage?

The main form of vitamin D, which is present in the body, is colecalciferol[1] (vitamin D_3). It comes in the body through food and through the conversion of 7-dehydrocholesterol by UVB – rays on the skin. Calcifediol[2], the most active metabolite of the colecalciferol, is formed by the liver and then transformed by the kidneys into calcitriol[3], which is responsible for the vitamin D activity.

The exposure to UV-rays is crucial to assure you have enough vitamin D in your body. Children and adults can have a low level of vitamin D at the end of the winter or the beginning of spring, especially new-borns and elderly people who do not receive a lot of sunshine. The use of sunscreen (with a high index) hinders the vitamin D production on the skin. (even if it stays necessary to protect the skin against harmful sun rays…).

Foods that are rich in vitamin D are oily fish, eggs, cheese and meat as well as enriched foods (milk, milk products, margarines, certain cereals).



Vitamin D is important for the formation and maintenance of **bone mass** by favouring the absorption of the calcium and by activating the key protein synthesis which intervenes in the bone formation. It also takes part in the maintenance of **immunity** and **muscle** functions.

For whom??

In Belgium, people at risk of a vitamin D deficiency are recommended to take vitamin D supplements:

- **Pregnant women**, in particular women with a dark skin,
- **Elderly people,** especially when they are institutionalized,
- **After bariatric (stomach) surgery** .
- In the case of a **osteoporosis** diagnosis
- **Newborns till the age of one year**
- **Pre-school aged children with a dark skin**, moreover when they have little exposure to sunshine **and children treated with anti-epileptics with an enzyme inducer** (for instance carbamazepine)

  Certain recommendations suggest to give a vitamin D supplement (400 UI) to all children until the age of six and during the winter months also to older children and adolescents.

[1] Colecalciferol = D-Cure®, Fultivit D3® for instance
[2] Calcifediol = Dedrogyl®, Défediol®
[3] Calcitriol = Rocaltrol®

What dosage??

40 IU of vitamin D = 1µg

Children	400 IU per day = *10µg per day*
Pregnant women	800 IU per day = *20µg per day*
Elederly people living in a institution	800 IU per day = *20µg per day*
Osteoporosis	800 IU per day or 25.000 IU per month *In combination with an elementary calcium supplement of 1 to 1,2 g per day*

In case of a strong deficiency or of malabsorption or with premature children, higher dosages could be necessary. On medical advice.

Particular precautions

- Vitamin D is a soluble vitamin in fat. An overdoses cannot be easily eliminated by the body. An overdoses of vitamin D can have undesirable effects like : digestive disorders, profuse urine, sweating, thirst hypercalcemia and stunting growth with new-borns, neurological disorders, risk of renal calculus
- A calcaemic (calcium level in the blood) check is recommended in case of treatment with doses higher than 800 IU vitamin D per day, or in case of the use of calcitriol, de calcifediol or alfacalcidol. With normal doses, such a check is not necessary.
- Poisoning of the children with an overdoses of vitamin D while playing with the supplements : Keep medicinal products after use out of the reach of children !!

Tolerable upper intake level of vitamin D
- Adultes and children : 50µg/day = 2000IU/day
- Newborns and babies : 25µg/day = 1000IU/day

Sources :

- *Belgian Center for Pharmacotherapeutic Information www.cbip.be*
- *Superior Health Council* https://www.health.belgium.be/en/superior-health-council
- *La Revue Prescrire www.prescrire.org/*