

Vitamin D

7th Sept 2020

Vitamin D plays an important role in bone health by the regulation of calcium and phosphorus metabolism.

Main source of vitamin D in the body is through the action of sunlight on our skin



The two major forms of vitamin D in our diet

Vitamin D3 – cholecalciferol

vitamin D2 – ergocalciferol

Vitamin D3 is only found in animal-sourced foods, whereas D2 mainly comes from plant sources and fortified foods.

Sources of Vitamin D

Sources of Vitamin D3

- Oily fish and fish oil
- Liver
- Egg yolk
- Butter
- Dietary supplements

Sources of Vitamin D2

- Mushrooms (grown in UV light)
- Fortified foods
- Dietary supplements
- Since vitamin D2 is cheaper to produce, it's the most common form in fortified foods.

Limitations of adequate vitamin D from diet (mcg per average portion)

Foods	mcg per portion
Cod liver oil	31.5 tbsp
Herring (grilled)	19.2
Shiitake mushrooms	18.75 ½ cup
Mackerel (smoked/grilled)	12.3-13.6
Salmon (pink, canned in brine, drained)	14.4
Salmon (steamed/grilled)	8.3-9.9
Calin + yoghurt	5
Sardines (grilled)	4.4
Eggs (whole, boiled)	1.7
Fortified breakfast cereals	1.4-1.5
Petit filous	1.25
Margarine	1.2 tbsp
Beef (rump steak, fried)	1
Tuna (canned in brine, drained)	0.9
Liver (lamb, fried)	0.9
So Good soya milk	0.86
Condensed whole milk	0.8 tbsp
Alpro Original / M&S soya drink	0.75

Limitations of adequate vitamin D from Sunlight

- UK sunlight is only strong enough to make vitamin D in summer months between 10am to 3pm
- Due to UK latitude UVB rays not adequate to make vitamin D from October to April
- Those with darker skin need longer exposure to the sun
- Suncream reduces the absorption of vitamin D

At risk from Vitamin D deficiency

- All adults living in the UK between October and March
- All Pregnant and Breastfeeding Women
- People over 65
- People with low or no exposure to the sun e.g. housebound or those who cover up for cultural reasons
- People who have darker skin e.g. those of African, African-Caribbean and South Asian Origin
- Chronic liver or renal disease
- Abnormal gut function
- Obesity

Vitamin D deficiency

Healthy population = 50%

CKD stage 3-4 = 70-80%

Haemodialysis = 80%

Vitamin D insufficiency has been associated with: Cardiovascular disease, type 2 diabetes, several cancers, autoimmune conditions, general immune function, COVID19!

Intakes and Requirements

Mean Daily Intakes (NDNS)

Adults 19-64yrs: =2.8 μg (112 IU)

Requirements (SACN 2016)

RNI= 10mcg or 400IU per day

- Inform your doctor that you are taking vitamin D supplements
- Speak to your doctor before taking higher doses of vitamin D