

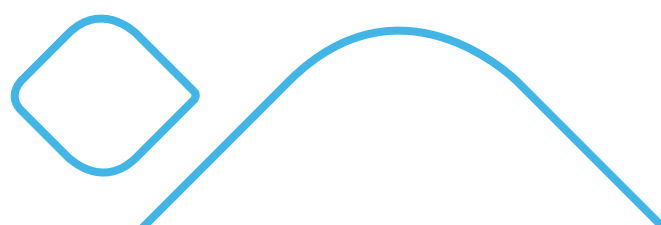
Vitamin B12 for Paediatrics

Vitamin B12 is one of the eight B vitamins. It contains the trace element cobalt and so is also known as cobalamin.

Vitamin B12 is a nutrient that helps keep the body's nerve and blood cells healthy and helps make DNA, the genetic material in all cells.

Age	RNI* vitamin B12 / day
0-6 months	0.3ug
7-12 months	0.4ug
1-3 years	0.5ug
4-6 years	0.8ug
7-10 years	1ug
11-14 years	1.2ug
15+ years	1.5ug
Breastfeeding women	2.0ug

* Reference nutrient intake (RNI) per day



Sources of B12

The main sources of vitamin B12 are meat, dairy products and eggs. The vitamin is not naturally present in plant foods such as vegetables, fruit, nuts, seeds, wholegrains and beans. Although some plant-based foods are now fortified with the vitamin.

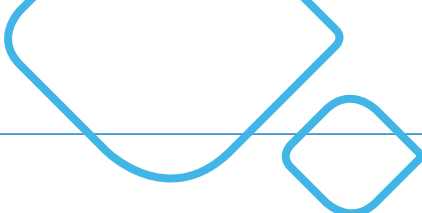
Portion of food	Vitamin B12 (ug)
1 slice lamb's liver (40g) (liver should not be eaten more than 1/week)	32.4ug
Grilled fillet salmon (120g)	6.0ug
Fillet of cod (140g)	2.8ug
Portion of liver pate (40g)	2.9ug
Cow's Milk (250ml)	1.1-1.4ug
Fortified soya, or plant alternatives to milk (250ml)	1.0-1.1ug
Small portion meat – beef, lamb, pork (50g)	1.0ug
Boiled egg	0.7ug
Fortified soya alternative to yogurt (150g)	0.6ug
Medium piece cheddar cheese (40g)	0.44ug

Individuals who include meat, egg and dairy products in their diets will have adequate intakes. Vegans are recommended to ensure that their diet includes foods fortified with vitamin B12, and or a supplement containing B12. Plant sources of vitamin B12 such as seaweed and algae (spirulina) are not considered safe or reliable sources of the vitamin as the B12 present is likely to be unavailable to humans.

B12 Deficiency

The main causes of vitamin B12 deficiency include:

- Not enough B12 rich foods included in the diet:
 - The body usually stores enough vitamin B12 to last about two to four years. However, it is important to have vitamin B12 in your diet to ensure that stores are kept at a healthy level.
- Conditions affecting the stomach or intestines that can prevent absorption of vitamin B12.
- Some medications can interfere with vitamin B12 absorption (please speak to your doctor if you are concerned).



Deficiency is likely to lead to anaemia (pernicious anaemia). This is a decrease in red blood cells that occurs when your body cannot properly absorb vitamin B12.

More reading about symptoms of deficiency and in relation to the vegan diet, see this link: <https://www.vegansociety.com/resources/nutrition-and-health/nutrients/vitamin-b12/what-every-vegan-should-know-about-vitamin-b12>



Treating Vitamin B12 Deficiency

Improving dietary intake may prevent the condition returning depending on the cause of the deficiency.

Supplements of vitamin B12 are usually given by injection at first. Then, depending on whether the deficiency is related to diet or not, either B12 supplement tablets between meals will be required or regular further injections.

To meet your vitamin B12 needs you may need to take an oral dietary supplement of 5-10ug per day (and no more than 2mg per day).

Example: VEG 1 from Vegan society: 1ml of VEG 1 Baby and Toddler liquid provides:

Vitamin B12 (5µg – 200%), Vitamin A (400µg – 50%), Vitamin C (30mg – 37%), Vitamin D (10µg – 200%), Iodine (50µg – 33%), Selenium (10µg – 18%)

If pernicious anaemia does not improve with an adequate oral intake of Vitamin B12, speak to your doctor about other forms of supplementation.

Contact details: **Paediatric Dietitians:** Tel: (01225) 826449

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