



THE FACTS ABOUT B12

Vegetarian diets—whether lacto, ovo-lacto or vegan—can each easily supply all the nutrients needed for vigorous good health, with the possibility of one exception—vitamin B12.

Usually, lacto- and ovo-lacto-vegetarian diets include an adequate amount of vitamin B12 because they contain dairy products, and these products do generally supply enough of the essential vitamin. As long as you're able to absorb this nutrient, you should be just fine. A vegan diet, however, because it contains no animal products, is different. If vitamin B12 isn't coming from food, it needs to come from somewhere else.

The body requires only a small daily amount of B12. Estimates range from 1 microgram to 6 micrograms per day. But larger amounts are harmless.

"Despite the need for such a minuscule amount of the vitamin," says Dr Suzanne Havala Hobbs, assistant professor and director of Carolina Health Summit, at the University of North Carolina, USA, "the stakes are high if you don't get what you need."

But there's more to the equation than "enough." The body must absorb it too—and not everyone does, whether they are vegetarian or not. The consequences of getting too little (or absorbing too little) vitamin B12 are as serious as they are avoidable.

B12 and your body

Vitamin B12 stimulates the body's use of proteins, fats and carbohydrates, and it boosts energy. It's necessary for cell division, helps maintain healthy blood, contributes to the well-being of the entire nervous system, and protects against heart disease. It also guards against memory loss and mental deterioration that can resemble Alzheimer's disease. So it's an important nutrient.

One of the most serious consequences of too little vitamin B12 is pernicious anaemia and its accompanying neurological problems. The symptoms may be subtle at first, but the consequences are not.

"It's a widespread disease," says Dr John W Tracy, a family practitioner at Randolph Family Practise in Charlotte, North Carolina, "widespread in

the sense that it affects a number of organ systems in the body. It's not only anaemia, but you lose the haemoglobin, you lose the white cells, you lose platelet function. It's a neurologic disease. People will get what's called ataxia, meaning they stumble around and can't walk straight. They get numbness of their hands and feet."

Other symptoms include moodiness and depression, memory loss, difficulty sleeping and dizziness. There may also be apathy, light headedness and shortness of breath. And, because your body is making fewer infection-fighting white blood cells, you may be getting sick more often. Further, because your body may not be replacing the cells that line your intestine quickly enough, you may suffer from appetite loss, vomiting and diarrhoea.

"It's a debilitating disease," he continues, "and it's also, to some extent, irreversible. Once you get the full neurologic manifestations of B12 deficiency in pernicious anaemia, you're probably not going to recover. Oh, you're going to recover some, but not completely."

at-risk groups

Beside strict vegetarians (vegans), there are certain groups of people who are more likely than others to suffer from a vitamin B12 deficiency, including pregnant and nursing women, smokers, those taking prescription potassium supplements long-term and those who are taking the prescription drug omeprazole (Prilosec™) for severe heartburn or ulcers.

Additionally, those who have had part of their stomach surgically removed may no longer have enough intrinsic factor (made in the stomach) necessary for utilising B12. Also, anyone who has had his or her ileum removed (because of Crohn's disease, for example) needs to pay special attention to vitamin B12, because the ileum is the portion of the intestine where this vitamin is absorbed.

The largest group who may be at risk of B12 deficiency, however, may be people over age 50. It's estimated that up to 30 per cent of older people (vegetarian or otherwise) may be unable to adequately absorb B12 because of a decrease in stomach acid.

alternative sources

If you fit into any of these categories, you may want to discuss with your doctor whether you should take a vitamin B12 supplement or, in some cases, B12 injections. And if you are one of those people who can't abide injections, B12 is also available in a nasal spray, a nasal gel and in lozenges to put under your tongue.

Fortunately, and probably because vitamin B12 is an essential part of so many of the body's functions, says Dr Havala Hobbs, "the body hoards it and recycles it and is very effective at hanging onto what it already has."

"It tends to be a cofactor in biochemical reactions in the body," says Dr Tracy, "which means it's not destroyed so much. It's going to be reused. But you will ultimately run out of it."

There is one "source" of vitamin B12 that needs to be mentioned here, and that's dirt—yes, dirt. It used to be thought by some that a reliable way to get vitamin B12 in the diet (especially for vegans) was to refrain from thoroughly scrubbing fresh fruits and vegetables—in other words, leaving some of the dirt on. However, besides the fact that this is entirely unappetising, it is something of a health hazard in other respects.

While it may be possible to some

extent to get some vitamin B12 from the soil in this way, says Dr Tracy, we can get other things as well—*E coli* and tetanus, for example, "and who knows what else." Inadequately washed produce is not recommended.

So, what is the best way to get B12? Actually, there are many good ways and you can choose the way (or ways) that work best. Eggs and dairy products can supply it. But what if you don't want to eat these or for some reason cannot tolerate them?

It used to be thought that foods such as tempe, miso, tamari, bean sprouts and sea vegetables, such as kelp and spirulina, were good sources, but these foods are now believed not to contain the form of vitamin B12 the body can use.

There are alternatives we can count on, though, ones easily available and that can fit right into our daily lives quite readily.

One such source is foods fortified with vitamin B12. Breakfast cereals are a good example. Soy milk, such as Sanitarium's So Good, is another. Tofu and some meat substitutes may be fortified as well. Get into the habit

of checking nutritional labels to see which products contain vitamin B12 and those that do not.

By far, though, the easiest way to make sure you get the necessary vitamin B12 is simply to take a supplement. This can be a multivitamin or a multivitamin and mineral supplement, or simply a B12 supplement.

And if you want to really be sure you get enough B12, it's fine to take a supplement and eat fortified foods. Your body will adapt its level of absorption according to how much it needs.

just get it

If you've been following a vegan or near-vegan diet for three years or more or if for any of the other reasons mentioned you're concerned about whether you are adequately absorbing vitamin B12, take a blood test to measure your body's levels. Besides being fast and simple, the test will give you peace of mind—or point out a problem, if there is one, so you can work to correct it.

Getting too little vitamin B12 can be tragic. Getting enough is easy. If you're in any doubt at all about which you are doing, see your doctor. ↻

Vitamin B12 sources for vegetarians

Here are a few basic items you'll find in your supermarket.

Food Content	micrograms
Dairy milk (1 cup—250 ml)	1.0
Whole egg, boiled	0.7
Yoghurt, low fat, fruit (200 ml serve)	0.4
Cheddar cheese (40 g serve)	0.4
So Good™ (1 cup—250 ml)*	1.0
Sanitarium Soy Healthy Sausages™ (2—100 g)	0.9
Sanitarium Soy Healthy Slices™ (3 slices—60 g)	0.6
Sanitarium Marmite™ (1 tsp—5 g)	0.5
Sanitarium Up & Go™ (250 ml)	0.5

In most cases, people who regularly include milk or a vitamin B12-enriched soy drink, cheese, other dairy or eggs in their meal plan, should be getting enough vitamin B12 for good health. Strict vegetarians—vegans, who don't use any foods from an animal source—need to ensure that they include adequate amounts of plant foods that contain added vitamin B12. It may also be advisable to use a vitamin B12 supplement. This is particularly important for those who are pregnant or breastfeeding, since a B12 deficiency can increase the risk of impaired nerve and brain development in infants. Consult your doctor or dietitian regarding vitamin B12 supplements.

—Sibilla Johnson, nutritionist