

# Veganism - a Resource for Pharmacists



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## Types of Plant-Based Diets

Name of Diet	Diet Description
Vegan	No animal products are consumed (i.e. no meat, poultry, fish, dairy, eggs or honey).
Ovo-vegetarian	No meat, poultry, seafood or dairy – but eggs are consumed.
Lacto-vegetarian	No meat, poultry, seafood or eggs – but dairy is consumed.
Vegetarian (a.k.a. lacto-ovo vegetarian)	No meat, poultry or seafood – but eggs and dairy are consumed.
Pescetarian	No meat or poultry – but fish, seafood, eggs and dairy are consumed.
Flexitarian	Mainly a vegetarian diet, occasionally animal based products are eaten (e.g. a few times per week or when eating out).

As veganism is gaining in popularity, the public are seeking more information about this lifestyle from healthcare professionals. This article aims to give an overview of veganism and provide resources for pharmacists which will help to support this group.

Veganism refers to a way of living which excludes the consumption and use of all animal products. Vegans exclude the consumption of meat, poultry, fish, dairy, eggs and honey. They also avoid the use of animal derived products such as medicines, clothes, and cosmetics. A vegan diet is one type of a plant-based diet, differences explained in the table below.

### Veganism in Ireland

In 2018, Bord Bia's report found that 4.1% of the Irish population follow a vegan/plant-based diet (the report didn't differentiate the two). That's 146,426 adults. This dietary pattern was found to be more common among young people (54%

were aged 18 - 34), upper class individuals, and residents of large cities.<sup>1</sup> The Irish plant-based, meat-free market is expected to grow from €23 million to €39 million by 2024.<sup>2</sup>

### Reasons for Adopting a Plant-Based Diet

The reasons why people choose a plant-based diet vary - it may be due to environmental concerns, animal welfare, food preferences and/or health reasons.

### Environment and Sustainability

The environmental impact of the food we eat is one of the reasons people are turning to plant-based diets. In Ireland, the agriculture sector is the biggest contributor to greenhouse gases emissions, accounting for 37% of Ireland's total in 2020.<sup>3</sup> Worldwide, meat and dairy are the main contributors to diet-related carbon emissions.<sup>4</sup> According to the British Dietetic Association, 'it is estimated that well-planned, completely plant-based, or vegan, diets need just one third of the fertile land, fresh water and energy of the typical British 'meat-and-dairy' based diet'.<sup>5</sup> However, sustainable eating is complex as it goes beyond nutrition and environment, it also includes economic and socio-cultural dimensions which make planning at population level more difficult.

### Animal Welfare

Another factor for many individuals choosing to lead a vegan lifestyle is animal welfare. Not consuming or using any animal products or by-products to prevent animal exploitation and animal cruelty.

### Health Benefits

It is the position of the American Dietetic Association that 'appropriately planned vegetarian diets', including vegan diets, 'are healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases', such as type 2 diabetes, hypertension, cardiovascular disease and some cancers. A well-planned vegan diet can be used during all stages of the life cycle.<sup>6</sup> However, extra dietary planning may be needed for nutritionally vulnerable groups such as: pregnant and breastfeeding women, babies and young children, food allergy sufferers or those following disease specific diets.

Despite the benefits of a vegan diet there may also be risks involved if the diet is not adequately planned. Insufficient intake of calcium in vegans has been linked with increased risk of fractures and insufficient iron, vitamin B12 or folic acid intake may lead to development of anemia.<sup>7,8</sup>

Plant-based diets can also feel overly restrictive for some people, which may lead to a disordered relationship with food. Studies show that vegetarians may have a higher risk of: disordered eating, binge eating and extreme behavior related to controlling their body weight.<sup>9</sup> The direction of this relationship isn't clear but it is important to be aware that, anecdotally, vegan diets can be used to mask the symptoms of an eating disorder.

## The Vegan Diet vs Health Eating Guidelines

Currently there is no vegan food pyramid available in Ireland. However, 'The Vegan Plate' or the 'Vegan Eatwell Guide' are great resources to consult to ensure a balanced vegan diet.<sup>10,11</sup>

Nutrition and dietetic institutes around the world, including Ireland, UK, US and Canada all have a similar message when it comes to healthy eating.<sup>12,13,14,15</sup> They advise that a healthy diet should consist of predominantly unprocessed foods like vegetables, fruit and wholegrains. They also all recommend limiting highly processed foods with a high fat, sugar, and salt content. These guidelines encourage plant foods to be the basis of the diet and this is how they are similar to plant-based diets. The difference is the amount of animal products included, with no animal intake seen on the vegan diet.

### Potential Nutrient Challenges

#### Vitamin B12

Humans only need a small amount of B12. Deficiency is rare and usually occurs after years of inadequate B12 intake. However, deficiency can lead to megaloblastic anaemia, irreversible neurological damage, and an increased risk of cardiovascular disease.<sup>8</sup>

The small amounts of naturally occurring B12 in plant-based foods are unreliable, because the B12 content is dependent on soil conditions. Supplementation of at least 1.5-2.5µg per day is advised for most individuals. Absorption of B12 varies, therefore it is recommended to take a supplement of at least 10µg per day, or 2000µg per week.<sup>11</sup>

If a person opts not to take a supplement, they should eat fortified foods at least twice per day, aiming for 3µg of vitamin B12 per day. B12 fortified foods include some meat alternatives, dairy alternatives like plant drinks, yogurts, and cheeses, and nutritional yeast.

#### Vitamin D

Vitamin D is produced by the body when the skin is exposed to sunlight at a certain wavelength. Signs of deficiency include fatigue, low mood, and muscle weakness. Plant-based sources include UV radiated mushrooms, and fortified foods like breakfast cereals, and dairy alternatives. However, most people in Ireland (vegans and non-vegans) require supplementation during the winter months. This is due to the sun's wavelength being inadequate for vitamin D production between March and November.

5 µg per day is recommended for adults up to 65 years old. Older adults (65+) need 15 µg if generally healthy and living independently. 20 µg if housebound with limited or no sunlight exposure. Only Vitamin D2 and lichen-derived vitamin D3 are suitable for vegans.<sup>16</sup>

#### Omega 3

Omega-3 deficiency can lead to fatigue, poor memory, dry skin, heart problems, mood swings or depression, and poor circulation. There are 3 forms of omega 3: Alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA). ALA is found in plant foods such as walnuts, hemp seeds, and flaxseeds. ALA is converted to EPA and DHA in the body, which have greater health benefits than ALA. However, the conversion of ALA into EPA and DHA isn't a very efficient process, and the amount converted varies from person to person. Therefore, it may be necessary to obtain EPA and DHA from a supplement.

A vegan omega 3 supplement (that contains EPA and DHA) is an algae based supplement. Make sure to choose a brand that supplies both EPA and DHA. The recommendation is between 250-550mg total EPA and DHA per day for adults.<sup>17</sup>

#### Iodine

Iodine deficiency can lead to hypothyroidism which results in slowed metabolism, elevated

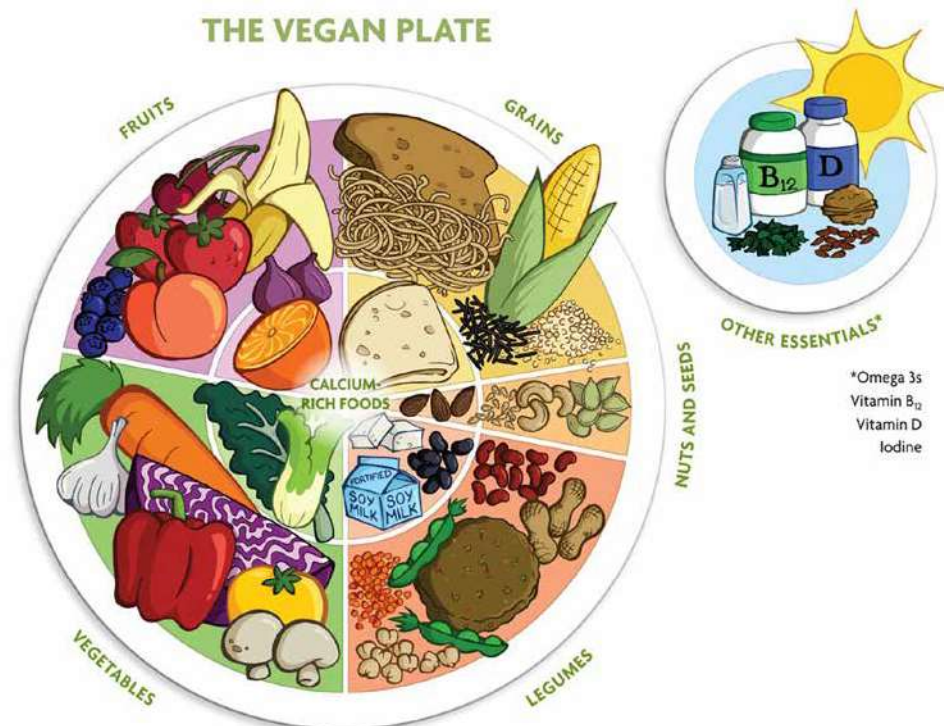


Figure 1: The Vegan Plate

Source: "Becoming Vegan: Comprehensive Edition" (2014) by Registered Dietitians Brenda Davis and Vesanto Melina, Book Publishing Co.

cholesterol, and weight gain. Plant-based sources include plant foods, iodised salt, and seaweed. The iodine content of plant foods is unreliable as it depends on the iodine content of the soil. In Ireland there is no standardised fortification of salt with iodine but health shops may sell iodised salt. However, if salt is avoided in the diet it's not reason enough to introduce it.

Seaweed is a great source of iodine. However, the iodine content can vary greatly and high levels can cause thyroid problems. The British Dietetics Association recommends limiting intake to no more than once a week, especially during pregnancy.<sup>18</sup> However, The Vegan Society recommends one and a half to two nori sheets per day to meet needs if not using supplements as nori are a relatively safe source.<sup>11</sup>

The recommended dietary allowance (RDA) for adults is 150µg per day. Supplementation is required if a person is not meeting their daily needs and should ideally be in the form of potassium iodide/iodate.<sup>18</sup>

### Iron

Some signs of iron deficiency include pale skin, cold hands and feet, weakness, and extreme fatigue. There are 2 types of iron: haem, and non-haem. Haem iron is iron found in animal foods, like meat, poultry and seafood, and is easily absorbed by the body. Non-haem iron is found in plant foods. Good plant sources include lentils, chickpeas, beans, tofu, cashew nuts, chia seeds, ground linseed, hemp seeds, pumpkin seeds, kale, dried apricots and figs, raisins, quinoa and fortified breakfast cereal.

It is more difficult to absorb non-haem iron than haem iron. Certain dietary adjustments can help absorption:

- Adding vitamin C rich foods to meals, such as pepper, broccoli, cabbage, brussels sprouts, kiwi fruit, oranges, strawberries, pineapple, grapefruit or orange juice.
- Avoiding coffee or tea with meals, as these contain tannins which block iron absorption.

The current iron recommended dietary allowance for adults is 10mg for men, and 14mg for women.<sup>19</sup> We advise speaking to the GP/dietitian to determine if supplementation is needed.

### Calcium

Calcium deficiency can result in bone disease such as osteoporosis, weak nails, and muscle cramps. Plant-based sources include calcium-set tofu, fortified foods like breads and dairy alternatives, kale, watercress, okra, dried figs, haricot beans, almonds and sesame seeds (or tahini). Consuming these foods with a source of vitamin D, in the form of food or a supplement, will increase calcium absorption. In Ireland, the RDA for adults is 800 mg/day.<sup>18</sup> Supplementation is needed if the RDA is not being met through the diet.

### Conclusion

A vegan lifestyle is one that excludes the consumption and use of all animal products. People choose to lead a vegan lifestyle due to environmental concerns, animal welfare, food preferences and/or health reasons. Appropriately planned vegan diets can be nutritionally adequate but may require some supplementation. Supplements that are recommended for most vegans are vitamin B12, and vitamin D. Many also require algae-based omega 3 and iodine. Individualised support from a registered dietitian and/or GP may be needed to ensure dietary adequacy.

Enquiries: [plantbaseddietitians@gmail.com](mailto:plantbaseddietitians@gmail.com)

Resources: INDI.ie

## Common Questions for Pharmacists

**Q: What supplements do you recommend if I'm transitioning to a vegan diet?**

**A: Commonly needed supplements include vitamin B12, vitamin D, algae based omega 3 and iodine. Other supplements like iron, and calcium, are usually recommended by your dietitian or doctor, based on a diet analysis or blood results. See above 'potential nutrient challenges' for recommended dosage.**

**Q: Can I get a vegan omega 3 supplement?**

**A: Absolutely. There are algae based omega 3 supplements which contain EPA and DHA, just like fish oil omega 3 supplements.**

**Q: Do I need a protein supplement?**

**A: Plant foods can be a good source of protein. According to the latest literature, vegan diets in Ireland exceed the RDA for protein intake of 0.75g protein/kg body weight. Vegans on average consume 0.99g protein/kg body weight per day.<sup>20</sup>**

All plant foods contain some protein, but some have higher amounts than others. Good plant sources of protein include:

- Legumes: lentils, chickpeas, kidney beans, green peas, butter beans.
- Nuts: walnuts, hazelnuts, peanuts, almonds, pecans, cashews.
- Seeds: quinoa, hemp seeds, pumpkin seeds, linseeds, chia seeds.
- Soy products: soy 'milk', edamame beans, tofu, soy based 'yogurts', tempeh.
- Meat substitutes: plant burgers/sausages, textured vegetable protein, and other meat alternatives.

If calorie needs are met on a vegan diet, protein requirements are usually met or exceeded. Groups that may need extra protein, and thus may benefit from a protein supplement, include the elderly, women during pregnancy, individuals with certain medical conditions, and athletes.

**Q: I've heard that I need to pair certain proteins with others. Is this true?**

**A: In the past it was believed that you had to pair two incomplete proteins\* in the same meal (e.g. pairing rice with beans) in order to get all the essential amino acids. We now know that all you need to do is to eat a variety of foods throughout the day, to get all the amino acids you need. Our body maintains pools of free amino acids that it can use to do all the complementing/pairing for us.**

\*Incomplete proteins are foods that do not have all 9 essential amino acids. Essential amino acids are protein building blocks we need to consume, as our body cannot make them. Incomplete proteins include wholegrains, legumes, nuts etc. Complete proteins are foods that contain all 9 essential amino acids, such as meats, fish, and soy.



References on request