

functioning of the brain and nervous system, inflammatory responses, and activity of the retina. Vegan sources of DHA and EPA are limited in foods, as it is only from microalgae. This is sold as supplements.

Find it in:

- Omega-6: plant oils: soybean, sunflower, canola, corn.
- Omega-3: plant oils: flaxseed, canola, soybean, hemp.
- EPA and DHA: microalgae in fortified products, supplements.

Be aware:

- Body conversion of omega-3 into EPA and DHA may be inefficient.
- DHA is vital for brain development in children. If you are considering pregnancy or are raising a vegan child, consider a DHA supplement.

## ZINC

Important for:

- Function of many enzymes.
- Growth and repair, protein synthesis.
- Reproductive system.
- Immunity.

Be aware:

- Vegan diets are high in phytate (plant bran layer) which prevent absorption.

| Be sure to include:                 |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Lentils, adzuki beans, legumes                                      |
| <input checked="" type="checkbox"/> | Mushrooms   |
| <input checked="" type="checkbox"/> | Millet, whole grains  |
| <input checked="" type="checkbox"/> | Pumpkin and sunflower seeds   |
| <input checked="" type="checkbox"/> | Products fortified with zinc including some cereals and soy 'meats' |
| <input checked="" type="checkbox"/> | Bread that is leavened  |

## VITAMIN D

Important for:

- Absorption of calcium
- Bone formation and structure

Get enough by:

- Ensuring adequate exposure to UV sunlight, 15 mins daily.
- Choosing products fortified with vitamin D.

Be aware:

- Vegan diets do not contain any natural sources, apart from sunlight!

## B12

Important for:

- DNA and red blood cell formation.
- Function of the central nervous system.
- Reducing homocysteine build-up: a factor in heart disease risk.

Find it in:

- B12 fortified products: soy products and 'meat alternatives'
- Supplements

Be aware:

- There are no natural vegan sources of B12.
- Deficiency is silent and takes a long time, with irreversible damage to the nervous system.
- Folate levels can hide a B12 deficiency because the symptoms of deficiency are the same. Vegans typically have great folate levels.
- B12 should be taken as a supplement if you do not choose fortified products, if you are considering pregnancy, and in children.



## a guide to essential nutrients for healthy vegan nutrition

Vegan eating patterns are wonderfully healthful when adequately planned. Meals are often based around fresh fruit and vegetables, contributing to a diet that is high in fibre, vitamins and minerals, low in saturated fat and entirely free of cholesterol. When variety is limited however there are certain nutrients that may be lacking.

When planning meals, focus on nutrients including protein, calcium, iron, zinc, vitamin D, vitamin B12, and essential fatty acids. Foods included in the vegan diet are often not naturally-occurring sources of these nutrients. Make a habit of reading labels and take advantage of fortified foods that are a good source of these nutrients.

# PROTEIN

Important for:

- Structure and function of cells and enzymes.
- Formation of collagen: skin, bone, body tissue.
- Maintaining muscle – strength and metabolism.

Find it in:

- Beans – chickpeas, lentils, navy, kidney.
- Tofu, tempeh and soy products.
- Nuts – almonds, walnuts, cashews.
- Seeds – sunflower, pumpkin, sesame.
- Processed ‘meat alternatives’.
- Soy, pea and rice protein powders.

Be aware:

- Protein is made up of essential and non-essential amino acids.
- Essential amino acids must be present in the diet every day.
- Plant proteins such as grains and beans each contain some of the essential amino acids. These are incomplete proteins. By eating a variety of plant protein foods you make complete proteins.
- Processed vegan ‘meat alternatives’ may be high in salt and saturated fat.
- Try not to rely on only soy protein: include a variety of sources.

You might not be getting enough if:

- You are losing weight.

| For daily complete proteins, eat this: |                               | Example                                |
|--|-------------------------------|--|
| <input checked="" type="checkbox"/>    | Grain + calcium fortified     | muesli with fortified rice milk        |
| <input checked="" type="checkbox"/>    | Vegetable + calcium fortified | baked potato with fortified soy cheese |

| For daily complete proteins, eat this: |                | Example  |
|--|----------------|--|
| <input checked="" type="checkbox"/>    | Soy protein    | tempeh or tofu, textured vegetable protein       |
| <input checked="" type="checkbox"/>    | Grain + legume | rice and chickpeas, peanut butter sandwich       |
| <input checked="" type="checkbox"/>    | Legumes + nuts | hummus (chickpeas, tahini), bean and nut patties |

# CALCIUM

Important for:

- Bone formation and turnover.
- Prevention of osteoporosis.
- Function of cells and enzymes.
- Muscle contraction.
- Reducing high blood pressure and cardiovascular disease risk.

Be aware:

- Oxalates are found in some green leafy vegetables (spinach) and block calcium absorption. These are not good sources.
- You need vitamin D to absorb calcium.
- High salt in the diet can lead to calcium loss.
- Read the label and choose calcium fortified products.

| Include these foods:                |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Calcium fortified products such as plant milks, cereals and juices |
| <input checked="" type="checkbox"/> | Tofu: look for calcium-set   |
| <input checked="" type="checkbox"/> | Vegetables: broccoli, cabbage, sweet potato                        |
| <input checked="" type="checkbox"/> | Legumes: chickpeas, lentils  |
| <input checked="" type="checkbox"/> | Nuts and seeds: almonds, tahini, pumpkin seeds                     |

# IRON

Important for:

- Transport of oxygen and carbon dioxide.
- Enzymes and energy production.

- Formation of red blood cells.
- Cognition and brain function.

Find it in:

- Beans, lentils, nuts and seeds
- Tofu and tempeh
- Soy products and fortified ‘meat alternatives’
- Fortified bread and breakfast cereals
- Blackstrap molasses

Be aware:

- Vegans eat non-heme iron which is harder to absorb.
- Add Vitamin C rich foods to ensure absorption.
- Polyphenols/tannins ( tea, coffee, red wine) block absorption.
- Calcium and zinc supplements with iron foods can prevent absorption

You might not be getting enough if:

- You are an athlete or participate in heavy training.
- You experience heavy menstrual periods or loss of blood.
- You are feeling tired or heavily fatigued: visit your doctor for a blood test.
- You are often cold and have poor immunity.

| For a daily supply, eat this with vitamin C: |   |
|--|---|
| <input checked="" type="checkbox"/>          | 1 cup of lentils, handful pumpkin seeds, 1 tbsp blackstrap molasses |
| <input checked="" type="checkbox"/>          | Iron fortified soy ‘meat’ and veg casserole                         |

# ESSENTIAL FATS

Description:

- The polyunsaturated fats known as omega-6 and omega-3s, are essential for body function and must be present in the diet.
- The omega-3 fatty acids are further converted into longer chain fatty acids EPA and DHA. These have many roles including