

Plant-Based Diets and Health

THE ORIGINAL

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WHAT IS A PLANT-BASED DIET?

Plant-based diets consist of fruits, vegetables, whole grains, legumes, nuts and seeds, with few or no animal products. Plant-based diets are abundant in nutrients such as fibre, vitamins, minerals, antioxidants, and anti-inflammatory compounds that are often lacking in the standard Western diet. They are low in saturated fat, predominately found in animal-derived foods. Replacing saturated fat with unsaturated fat improves health outcomes and reduces mortality (1).

Well-planned plant-based diets can support healthy living at every age and life-stage. Include a wide variety of healthy plant-based foods, including whole grains, to ensure the diet is both balanced and sustainable (2,3).

A HEALTHY PLANT-BASED DIET IS ONE OF THE HEALTHIEST CHOICES YOU CAN MAKE

Unhealthy diets are now responsible for 1 in 5 deaths globally every year, around 11 million deaths in total, making this a leading risk factor for chronic disease, disability and death (4). Unhealthy diets are typically too high in saturated fat, sugar and salt and certain animal-derived foods, like red and processed meats; and insufficient in healthy plant-based foods. Poor diet is therefore a major risk factor contributing to the rise in obesity, cardiovascular disease, type 2 diabetes, cancer, dementia and liver disease.

Interest in plant-based diets has grown significantly in recent years, with vegan, vegetarian and flexitarian diets becoming more popular in the UK as well as other parts of the world, often for reasons relating to health, environment and animal ethics.

It is important to be aware that different types of plant-based diets may not confer the same effects on health. The key is to focus on eating a balanced, healthy diet with a variety of different plant-based foods.

PLANT-BASED DIETS CAN REDUCE ONE'S RISK OF THE MOST COMMON CHRONIC DISEASES

Whilst the science in this field continues to evolve and in some cases more research is necessary, the most notable and consistent impacts of a plant-based diet are on reducing the risk of ischaemic heart disease and maintaining a healthy weight. Vegetarian, vegan and healthy plant-based diets have been shown to reduce the risk of ischaemic heart disease by 25-30% (5,6) and prevent weight gain (7). Further benefits include a 50% reduction in risk of type 2 diabetes (8), as well as reductions in high blood pressure (9) and may reduce cholesterol levels (10,11) to a similar extent as medications, lower risk of certain cancers (5,12), 20% reduction

in the risk of developing fatty liver (13), may improve mental health and well-being (14) and may even be protective against dementia (15). Healthy plant-based diets can reduce the risk of early death (16,17) with even small shifts away from animal foods, such as replacing 3% of energy from red and processed meat with plant protein, such as fibre-packed beans and lentils, reducing the risk of early death by 34% (18). Plant-based diets are now included in guidelines as key components of a healthy lifestyle for the prevention of cardiovascular disease (19) and cancer (20).

PLANT-BASED DIETS CAN BE USEFUL IN THE TREATMENT OF ESTABLISHED CHRONIC ILLNESS

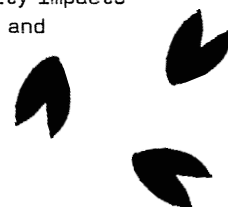
Since 1990 plant-based diets has been shown to be a part of lifestyle changes that arrest the progression and in some cases even reverse coronary heart disease (21). Further studies have demonstrated value of including plant-based diets in treatment of type 2 diabetes, weight loss (22) and possibly even early stages of prostate cancer alongside other lifestyle changes (23) with a strong association being shown with dairy consumption and increased risk of prostate cancer (24). This has led to the incorporation of plant-based diets into clinical guidelines, including for treatment and remission of type 2 diabetes (25,26) and recovery from cancer (20).

HOW DO PLANT-BASED DIETS PROMOTE HEALTH

Key mechanisms include the low calorie yet high nutrient content of plant-based foods, including fibre, polyphenols, unsaturated fats, anti-inflammatory and antioxidant compounds. Plant-based foods are often low in saturated fat and have a high fibre content and plant-based diets are associated with healthier gut microbiome (27,28) and lower levels of inflammation (29).

BROADER BENEFITS OF A PLANT-BASED DIET

Animal agriculture is a major driver of the climate and ecological crises which are also directly impacting human health (30). It is clear that a global shift to plant-based diet is necessary to avert the looming catastrophe (31,32). The Eat-Lancet Commission's Planetary Health Plate designed to keep the food system within planetary boundaries is 87% plant-based and the researchers acknowledge that animal-derived foods are optional and if consumed should be greatly minimised. Health Canada has incorporated sustainability impacts into their dietary guidelines and recommends a predominantly plant-based diet, limiting meat consumption and dairy, which has been removed as a food group (33).



KEY NUTRIENTS AND SUPPLEMENTATION

It's important for those consuming a plant-based diet to include a variety of foods to ensure adequate intakes of key nutrients, which are often sourced from animal products, such as vitamin B₁₂, omega-3 fatty acids, calcium, iron, iodine, selenium and zinc. In order to meet nutrient needs, it can be helpful to incorporate fortified foods and drinks such as plant-based drinks, gurts and calcium-set tofu. It is noteworthy that organic products are not fortified as current legislation does not allow this.

VITAMIN B₁₂

Made by microorganisms in the soil not plants or animals. However, as animal products are the usual source of vitamin B₁₂, it is crucial for everyone on a plant-based diet to ensure they have a reliable source of Vitamin B₁₂. Supplementation is required on a plant-based diet (supplement or 3 x daily fortified foods) and for anyone over the age of 65. Take either at least 10mcg daily or at least 2000mcg weekly.

CALCIUM AND VITAMIN D

Calcium is easily obtained from plant sources, including low-oxalate greens such as kale and bok choy, legumes, calcium-set tofu and fortified plant drinks and gurts. There is no negative effect on bone health if dairy is avoided (34). Vitamin D is mainly made by the action of the sun on skin and food sources are generally poor. Foods fortified with vitamin D can be a useful source of vitamin D. A supplement is recommended for all during the winter months and vegans should consider supplementing around the year.

OMEGA-3 FATTY ACIDS

Obtaining enough omega-3 fatty acids from the diet, in the form of alpha-linoleic acid, is important for plant-based eaters. Plant sources include walnuts, flax seeds, hemp seeds and chia seeds. An algae-derived DHA/EPA supplement may be a good option, especially in pregnancy, breastfeeding, for children and older adults. This avoids the pollutants in fish, such as mercury, dioxins, polychlorinated biphenyls.

IRON

It has been suggested that the avoidance of haem iron, found in animal-derived foods, may have a beneficial role in cancer (35), diabetes (36) and cardiovascular disease (37). Good sources of non-haem iron include legumes, seeds, dark leafy greens, dried fruit, oats, quinoa and some fortified foods and should be consumed ideally with sources of Vitamin C to enhance absorption. The presence of inhibitors of absorption such as phytates also needs consideration. Soaking, fermenting and sprouting can significantly reduce phytate levels and aid absorption of iron and other micronutrients such as zinc.

IODINE

A daily supplement containing up to 150 micrograms in the form of potassium iodide or potassium iodate may be advisable – especially for preconception, pregnancy and breastfeeding as iodine plays a critical role in early brain development. Amounts in seaweed can be variable and some types may be contaminated. Dulse and nori or plant-drinks and gurts fortified with iodine are good options.

SELENIUM

A trace mineral, plant-based sources contain variable amounts including brazil nuts, cashews, oats, sunflower seeds, brown rice and beans.

ZINC

Zinc is a micronutrient that plays a key role in growth and immune health. Good plant sources of zinc are beans, lentils, tofu, whole grains, wholemeal bread, nuts and seeds. For advice regarding phytates, see iron section (above).

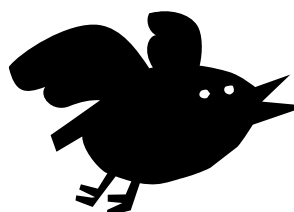
Health professionals should consider recommending a plant-based diet to all their patients, especially those with high blood pressure and cholesterol, type 2 diabetes, cardiovascular disease, or obesity.



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