

Nutritional value and benefits of a plant-based diet.

Emily Oken*

Department of Food Science and Nutrition, University of Portsmouth, Portsmouth, UK

Introduction

A high sugar, high fat, processed food-laden diet has contributed significantly to the burden of obesity and chronic disease in America. Not only do Americans consume fewer than the recommended daily servings of fruit and vegetables, but the average American eats approximately 200 pounds of red meat and poultry each year.¹ This volume is higher than needed to meet the average daily calorie and protein requirements of a healthy diet. According to recent data published by the Centers for Disease Control (CDC), just over 42% of Americans are obese.² Rates of obesity-related diseases such as cardiovascular disease, hypertension, and type 2 diabetes mellitus are at an all-time high. These common chronic diseases are known to be heavily impacted by diet and lifestyle. As a result, many people are looking to modify their diets for weight loss and improve their overall health [1].

A plant-based diet is not always healthful. As the interest in plant-based eating has risen, so have the options for plant-based “junk food” such as donuts and cinnamon rolls. Imitation meat, milk, egg, and cheese products are typically lower in fat and calories than their animal product counterparts, but they are not necessarily nutritious. Attention must be paid to both the macro- and micro-nutrient content of any diet. A person could eat a diet that is plant-based yet high in sugar, saturated fats, and highly processed food products, thus negating some of the health benefits of a plant-based diet. A healthful plant-based diet is one composed of high-quality whole foods like grains, fruits, vegetables, legumes, nuts, and seeds.

Fiber

A startling 95% of Americans are deficient in fiber, which is likely related to ingesting high amount of processed foods, yet little fruit, vegetables, legumes or whole grains. A plant-based diet is by nature high in fiber, whereas animal products are devoid of fiber. All dietary sources high in fiber, such as beans, broccoli, berries, avocados, and apples, are plant-derived [2].

Protein

While a plant-based diet is rich in many micronutrients that are missing from the standard American’s diet, care should be taken with any diet to ensure adequate intake of all vital nutrients. When considering a plant-based diet, the first component many people think about is protein. While most people equate protein with meat, dairy, and eggs, many plant foods contain high amounts of protein as well.

Micronutrients

One micronutrient that often raises concern in a plant-based diet is vitamin B12. Some studies have shown that those on a plant-based diet are found to have lower plasma vitamin B12 levels and higher levels of vitamin B12 deficiency than those who consume animal products. Vitamin B12 is an important cofactor in DNA synthesis, and deficiency can lead to anemia and severe neurological dysfunction. It is especially critical that pregnant persons ensure adequate Vitamin B12 levels, as a deficiency can lead not only to neural tube defects, but long-term consequences in weight management and brain development affecting the unborn child past delivery into its adulthood [3].

Benefits of Plant-Based Diets

Obesity: In 2006, after reviewing data from 87 published studies, authors Berkow and Barnard reported in *Nutrition Reviews* that a vegan or vegetarian diet is highly effective for weight loss. They also found that vegetarian populations have lower rates of heart disease, high blood pressure, diabetes, and obesity. In addition, their review suggests that weight loss in vegetarians is not dependent on exercise and occurs at a rate of approximately 1 pound per week.

Diabetes: Plant-based diets may offer an advantage over those that are not plant based with respect to prevention and management of diabetes. The Adventist Health Studies found that vegetarians have approximately half the risk of developing diabetes as nonvegetarians. Nonvegetarians were 74% more likely to develop diabetes over a 17-year period than vegetarians. In 2009, a study involving more than 60,000 men and women found that the prevalence of diabetes in individuals on a vegan diet was 2.9%, compared with 7.6% in the nonvegetarians. A low-fat, plant-based diet with no or little meat may help prevent and treat diabetes, possibly by improving insulin sensitivity and decreasing insulin resistance [4].

Heart Disease: In the Lifestyle Heart Trial, Ornish found that 82% of patients with diagnosed heart disease who followed his program had some level of regression of atherosclerosis. Comprehensive lifestyle changes appear to be the catalyst that brought about this regression of even severe coronary atherosclerosis after only 1 year. In his plant-based regimen, 10% of calories came from fat, 15% to 20% from protein, and 70% to 75% from carbohydrate, and cholesterol was restricted to 5 mg per day.

*Correspondence to: Emily Oken, Department of Food Science and Nutrition, University of Portsmouth, Portsmouth, UK, E-mail: Emilyoken067@port.ac.uk

Received: 30-Jan-2023, Manuscript No. AAJFSN-23-88642; Editor assigned: 01-Feb-2023, PreQC No. AAJFSN-23-88642 (PQ); Reviewed: 15-Feb-2023, QC No. AAJFSN-23-88642; Revised: 20-Feb-2023, QC No. AAJFSN-23-88642 (R); Published: 27-Feb-2023, DOI:10.35841/aaajfsn-6.2.170

Interestingly, 53% of the control group had progression of atherosclerosis. After 5 years, stenosis in the experimental group decreased from 37.8% to 34.7% (a 7.9% relative improvement). The control group experienced a progression of stenosis from 46.1% to 57.9% (a 27.7% relative worsening). Low-density lipoprotein had decreased 40% at 1 year and was maintained at 20% less than baseline after 5 years. These reductions are similar to results achieved with lipid-lowering medications [5].

References

1. Bakaloudi DR, Halloran A, Ripplin HL, et al. Intake and adequacy of the vegan diet. A systematic review of the evidence. *Clin Nutr.* 2021;40(5):3503-21.
2. Ornish D, Scherwitz LW, Billings JH, et al. Intensive lifestyle changes for reversal of coronary heart disease. *Jama.* 1998 ;280(23):2001-7.
3. Huang T, Yang B, Zheng J, et al. Cardiovascular disease mortality and cancer incidence in vegetarians: a meta-analysis and systematic review. *Ann Nutr Metab.* 2012;60(4):233-40.
4. Quagliani D, Felt-Gunderson P. Closing America's fiber intake gap: communication strategies from a food and fiber summit. *AJLM.* 2017 ;11(1):80-5.
5. Anderson JW, Baird P, Davis Jr RH, et al. Health benefits of dietary fiber. *Nutr Rev.* 2009 ;67(4):188-205.