Raw Vegan Diets

What We Know

› A raw vegan diet consists of foods that are plant based, contain no animal products, dairy or eggs, and are not cooked or heated to temperatures of more than about 116–118 degrees Fahrenheit. The percentage of raw foods consumed in the diet can range from 50–100 percent. Some individuals who are raw vegans may also consume raw meat like carpaccio or sushi and raw milk products. Raw food diets are not advised for infants and children because of concerns with inadequate nutrient content. Raw food diets can be traced back to the Pythagoreans who advocated for this type of diet. At the beginning of the 19th century German immigrants settling in the Southern California region brought the concept of the diet to the United States. Then in the 1960s the diet was further popularized by the Hippocrates Health Institute. While there is limited research on raw vegan diets, there is a fair amount of research on vegetarian or vegan diets. There are different types of vegetarian diets that can be described on a continuum ranging from those allowing the eating limited amounts of meat, poultry, fish, shellfish, eggs, and dairy to those who consume no animal products. In addition to plant-based foods, a semi-vegetarian eats meat, poultry, fish, shellfish, eggs, and dairy but consumes limited amounts of red meat and poultry. Pesco-vegetarians do not eat meat or poultry but do consume fish, shellfish, eggs, and dairy. Vegetarians do not consume meat, fish, poultry, eggs, and dairy while vegans do not consume any products that come from animal sources.

› Advocates of the raw food diet generally believe that raw food is healthier than cooked foods and that cooked foods can be toxic or poisonous. There is some evidence that supports the notion that raw foods can be healthier than cooked foods; however, cooking can also break down components of food that may interfere with absorption of minerals and make some nutrients better available for absorption. Some raw food advocates also believe that eating raw foods will increase lifespan because of the digestive enzymes in raw foods prevent the body from using its own enzymes. However, stomach acid destroys most of the enzymes in raw food.

– For example, cooking vegetables, particularly boiling can decrease the amount of water-soluble vitamins and phytonutrients present. Steaming vegetables, however, is a better cooking method for preserving nutrient content of vegetables. Cooking some vegetables, such as those that contain carotenoids, actually increases the bioavailability of carotenoids.

– Insoluble fiber in vegetables decreases with cooking making it easier to consume greater amounts.

– In reducing sugars, like glucose and fructose, heat leads to the Maillard reaction (a chemical reaction between amino acids and reducing sugars that provides the flavor aspect of browned foods), which compromises amino acids, causing protein to cross-link with reducing sugars making them more difficult to digest.

› While there is limited research on the nutritional adequacy and effects of eating a raw vegan diet, studies on vegan diets suggest that vegan diets can be nutritionally adequate with attention to select nutrients and that a vegan diet can be beneficial for health including weight loss, blood pressure control, ischemic heart disease, the gut microbiota, and metabolic syndrome.
• With the exception of vitamin B12 and potentially vitamin D, all nutrients can be obtained by a plant-based diet. Individuals who consume vegan diets with no sources of animal products are at highest risk for developing a vitamin B12 deficiency. Other nutrients that may be of concern for vegans include calcium, iron, iodine, selenium, and zinc. However, with proper food selection and consumption these nutrients can be adequate in the vegan diet\textsuperscript{(5,7,14,15)}

• Plant-based diets have been shown to be more effective at reducing weight than diets containing meat\textsuperscript{(2,16)}

• Raw and cooked vegetables have been shown to favorably affect blood pressure control. Using participants from the International Study of Macro/Micronutrients and Blood Pressure (INTERMAP), dietary recalls, and blood pressure measurements researchers found a significant inverse relationship between raw and cooked vegetable consumption and blood pressure. The inverse relationship was stronger for raw vegetables\textsuperscript{(3)}

• The gut microbiota of vegans appears to be different from that of those who consume meat. The vegan gut microbiota appears to have a reduced number of pathobiotics (disease causing pathogens) and a greater amount of protective pathogens. Vegans also seem to be deficient in the gut microbiota that converts dietary L-carnitine(found in red meat) to trimethylamine-N-oxide (TMAO). High levels of TMAO have been linked to heart attack and stroke risk\textsuperscript{(6)}

• Vegetarian and vegan diets appear to be effective at lowering the risk of metabolic syndrome related issues such as impaired glucose metabolism, central obesity, increased blood pressure and dyslipidemia\textsuperscript{(15)}

• Vegan diets do not appear to negatively affect bone mineral density long-term. In a study examining the relationship between veganism and loss of bone mass in postmenopausal women, researchers found that a vegan diet did not adversely affect loss of bone mass and rates of fractures. However, the use of corticosteroids and high intakes of animal protein and lipids correlated with bone mass loss\textsuperscript{(8)}. However in another study where researchers examined the effect of a vegan diet on bone mineral density in parents and children, researchers found that inadequate intakes of calcium and vitamin D could impair the rate of bone turnover and cause bone mineral density to decrease in vegans. The researchers suggested that bone mineral density should be monitored in vegans, especially children\textsuperscript{(1)}

**What We Can Do**

› Learn about raw vegan and vegan diets so you can accurately assess your patient's personal characteristics and health education needs; share this information with your colleagues

• Advise vegans to ensure adequate intake of vitamin B12 and D. Sources of vitamin B12 for vegans in include fortified foods such as nutritional yeast, cereals, and plant-based milks and supplementation. Sources of vitamin D for vegans include fortified plant milks; supplementation may be required if there is deficiency

• Encourage vegans to consume adequate sources of other nutrients that may be of concern in the diet such as calcium iron, iodine, zinc and selenium
  – Calcium sources: leafy greens, tofu containing calcium almonds, almond butter, fortified plan milks, sesame seeds, tahini, figs, and blackstrap molasses
  – Iron sources: legumes, leafy greens, soybeans and soy foods, quinoa, potatoes, dried fruit, dark cholate, tahini, seeds, and sea vegetables
  – Iodine sources: sea vegetables and iodized salt
  – Zinc sources: legumes, soy foods, nuts, seeds, oats
  – Selenium sources: brazil nuts, whole grains, legumes, vegetables, seeds, and other nuts

**Related Resources**

› The Vegan Society
› Vegetarian Diet
› Vegetarian Nutrition Dietetic Practice Group
› Physician Committee for Responsible Medicine
› USDA National Agricultural Library – Vegetarian Nutrition
References


