Pearce-ings

Vegetarian diets 101

BY FRANCINE PEARCE, MD

In the era where obesity is the No. 1 health crisis affecting people of all ages, physicians are often faced with questions regarding restricted diets or a patient may report that they are "vegetarian" in their history. Although new trendy diets appear all the time, "vegetarian inclined" diets are among the most common. A study conducted in 2008 identified that approximately 10% of Americans age 18 and older consumed a vegetarian diet.[1] It is important to know the basics so that you can offer some guidance and look for possible deficiencies that may result from an altered diet.

Studies show that children who follow a vegetarian diet have normal growth and development but tend to be leaner than their omnivore counterparts.[2] A healthy diet consumed in childhood lessens the risk for chronic diseases and promotes optimal growth and development. But altered or restricted diets in adolescents can be tricky because teens are actively growing and therefore usually need greater amounts of vital nutrients. So guidance is important to avoid common mistakes.

The simplest way to remember what is appropriate in a vegetarian diet is the restriction on intake of any food that once had a mother and a father. The vegetarian diet is further divided based on what it includes or excludes. Although the below list is not complete, it outlines the more common vegetarian diets:

- Vegan. This diet restricts intake of any animal product.
- Macrobiotics. This diet consists of whole grain, brown rice, fruits, and vegetables, and restricts intake of white meat or fish to twice a week.
- Lacto-vegetarian. This diet is one which allows milk products.
- Ovo vegetarian. This diet allows eggs, but no meat, dairy, or fish.
- Pescitarian. This diet restricts meats, dairy, and eggs, but allows fish.
- Semi-vegetarian. This diet just restricts eating meat.

It is important to encourage anyone wishing to follow a vegetarian diet to fully research and understand what it entails. Health.gov under "dietary guidelines 2015-2020" is a wonderful reference to help understand how much of vital nutrients should be consumed to promote healthy eating habits and prevent deficiencies.

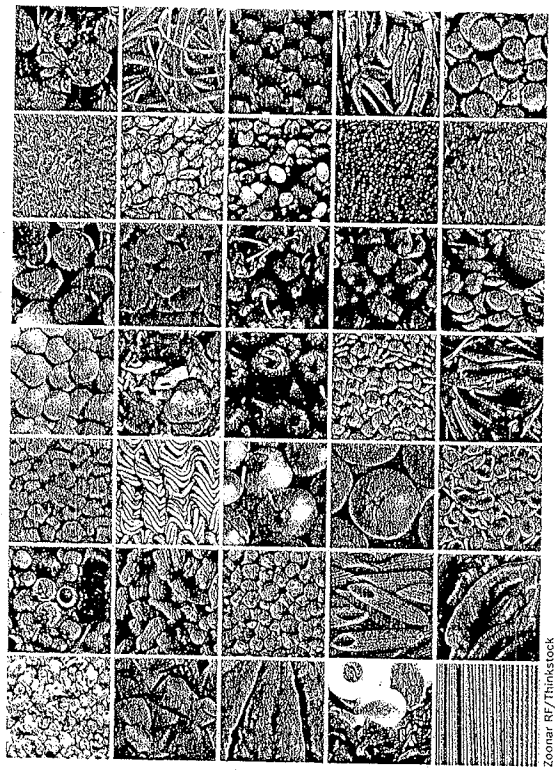
The key nutrients to discuss with patients are intake of protein, iron, calcium, vitamin B_{12}, and vitamin D. Inadequate or incorrect intake can lead to deficiency of the vital nutrients that likely will result in disease.

Protein is a necessary nutrient because it provides the essential amino acids necessary for growth and repair. When animal protein breaks down, it provides all of the essential amino acids, unlike plant protein which can be deficient in some of the amino acids. Because each source of plant protein varies in the amino acid it is deficient in, it is important to have a mixed source of protein to ensure adequate intake.

The soy bean has comparable amounts of protein to animal protein. Other sources of protein are legumes, grain, cereal, eggs, nuts, Greek yogurt, cottage cheese, but these are less digestible so greater consumption is needed to meet the daily requirements. Deficiency in protein can result in impaired growth.

Iron that is obtained from animals or meat sources has heme component, which makes it easier to absorb. Iron obtained from plants does not contain heme component and therefore is more difficult to absorb. Ascorbic acid (vitamin C) helps nonheme iron to be absorbed, but must be taken with an iron source to be effective. Therefore, vitamin C–containing foods such as fruits and vegetables should be consumed at every meal to assist in iron absorption. Deficiency in iron can lead to anemia and reduced energy.

Calcium is an important nutrient for bone formation, and deficiency can lead to increased risk for fracture and osteoporosis later in life. Its excretion and absorption can be affected by other nutrients, such as iron and zinc, present during digestion. Milk and dairy products are the most common source for calcium intake, but there are other calcium sources such as kale, broccoli, and food fortified with calcium such as cereal and orange juice. These foods can be better sources of calcium than supplements because they allow for better absorption.



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Vitamin D is needed for calcium and phosphorus absorption, which is important for proper bone formation. Vitamin D is found in dairy products, fortified food and beverages, and exposure to the sun. Those living in colder climates and of darker pigmentation are at greater risk of deficiency so supplementation is usually necessary. Deficiency of vitamin D can lead to rickets.

Vitamin B_{12} is found in meat, fish, and dairy products, but not in plants. Intake of B_{12} is likely to be deficient in vegans because they do not consume most of those sources. Vegans are at a significant risk of vitamin B_{12} deficiency[3] which can lead to macrocytosis, anemia, and decreased energy.

Educating families on healthy eating is essential at any visit. A good understanding of the possible deficiencies that can occur with restricted diets will allow for proper guidance and avoidable diseases.

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