

Lactovegetarians, who exclude meat and eggs but drink milk

Pure vegetarians (vegans), who eliminate all foods of animal origin, including milk and eggs

Macrobiotics, who are even more restrictive than pure vegetarians, allowing only a few types of fruits, vegetables, and legumes

Semi-vegetarians, who consume a lacto-ovo vegetarian diet with some fish and poultry: This is an increasingly popular form of vegetarianism and poses little or no nutritional risk to infants unless dietary fat and cholesterol intake is severely restricted.

Many individuals who are concerned about healthy diets subscribe to vegetarian diets that may not be typified by the above categories. Therefore, during nutritional assessment, it is necessary to clearly list exactly what the diet includes and excludes.*

The major deficiencies that may occur in the stricter vegan diets are inadequate protein for growth; inadequate calories for energy and growth; poor digestibility of many of the bulky natural, unprocessed foods, especially for infants; and deficiencies of vitamin B₆, niacin, riboflavin, vitamin D, iron, calcium, and zinc. Vitamin D is essential if exposure to sunlight is inadequate (≈5 to 15 min/day on the hands, arms, and face of light-skinned persons; slightly more in darker pigmented individuals) or in persons who are dark skinned or who live in northern latitudes or cloudy or smoky areas. Many of these deficiencies can be avoided in children who are not consuming 100% of the RDA of vitamins and minerals with a multivitamin and mineral supplement.

Evaluate for **iron-deficiency anemia** and **rickets** in children on strict vegetarian and macrobiotic diets; this may occur as a result of consuming plant foods such as unrefined cereals, which impair the absorption of iron, calcium, and zinc. The [American Academy of Pediatrics, Committee on Nutrition \(2014\)](#) recommend iron supplementation of 1 mg/kg/day in infants exclusively breastfed after 4 to 6 months old by vegetarian mothers and no dietary fat restrictions in vegetarian children younger than 2 years old. Other factors that affect iron absorption are listed in [Box 11-2](#).