

interact with minerals. For example, iron, zinc, and calcium can form insoluble complexes with **phytates** or **oxalates** (substances found in plant proteins), which impair the bioavailability of the mineral. This type of interaction is important in vegetarian diets because plant foods (such as soy) are high in phytates. Contrary to popular opinion, spinach is not an ideal source of iron or calcium because of its high oxalate content.

Children with certain illnesses are at greater risk for growth failure, especially in relation to bone mineral deficiency as a result of the treatment of the disease, decreased nutrient intake, or decreased absorption of necessary minerals. Those at risk for such deficiencies include children who are receiving or have received radiation and chemotherapy for cancer; children with human immunodeficiency virus (HIV), sickle cell disease, cystic fibrosis, gastrointestinal (GI) malabsorption, or nephrosis; and extremely low birth weight (ELBW) and very low birth weight (VLBW) preterm infants.

Nursing Care Management

Identification of adequacy of nutrient intake is the initial nursing goal and requires assessment based on a dietary history and physical examination for signs of deficiency or excess (see Nutritional Assessment, [Chapter 7](#)). After assessment data are collected, this information is evaluated against standard intakes to identify areas of concern. One source of standard nutrient intakes is the DRIs (see [Chapter 4](#)).

Standardized growth reference charts are used in infants, children, and adolescents to compare and assess growth parameters such as height and head circumference with the percentile distribution of other children at the same ages. The World Health Organization growth charts represent standardized growth reference now recommended for infants and toddlers up to 24 months old. This growth chart includes head circumference, height, and weight references, which were derived from healthy children in six different countries around the world. These growth standards are based on the growth of healthy breastfed infants throughout the first year of life. The Centers for Disease Control and Prevention's growth charts are now recommended for children 2 to 19 years old