

In older children, flat	Potbelly, constipation	Vitamin D
Normal bowel habits	Diarrhea	Niacin Excess vitamin C
	Constipation	Excess calcium, potassium
<b>Musculoskeletal System</b>		
Muscles—firm, well-developed, equal strength bilaterally	Flabby, weak, generalized wasting	Protein, calories
	Weakness, pain, cramps	Thiamine, sodium, chloride, potassium, phosphorus, magnesium Excess thiamine
	Muscle twitching, tremors	Magnesium
	Muscular paralysis	Excess potassium
Spine—cervical and lumbar curves (double S curve)	Kyphosis, lordosis, scoliosis	Vitamin D
Extremities—symmetric; legs straight with minimum bowing	Bowing of extremities, knock knees	Vitamin D, calcium, phosphorus
	Epiphyseal enlargement	Vitamins A, D
	Bleeding into joints and muscles, joint swelling, pain	Vitamin C
Joints—flexible, full range of motion, no pain or stiffness	Thickening of cortex of long bones with pain and fragility, hard tender lumps in extremities	Excess vitamin A
	Osteoporosis of long bones	Calcium Excess vitamin D
<b>Neurologic System</b>		
Behavior—alert, responsive, emotionally stable	Listless, irritable, lethargic, apathetic (sometimes apprehensive, anxious, drowsy, mentally slow, confused)	Thiamine, niacin, pyridoxine, vitamin C, potassium, magnesium, iron, protein, calories Excess vitamins A, D, thiamine, folic acid, calcium
Absence of tetany, convulsions	Masklike facial expression, blurred speech, involuntary laughing	Excess manganeseThiamine, pyridoxine, vitamin D, calcium, magnesium
	Convulsions	Excess phosphorus (in relation to calcium)
Intact peripheral nervous system	Peripheral nervous system toxicity (unsteady gait, numb feet and hands, fine motor clumsiness)	Excess pyridoxine
Intact reflexes	Diminished or absent tendon reflexes	Thiamine, vitamin E

\*Nutrients listed are deficient unless specified as excess.

BP, Blood pressure.

**Anthropometry**, an essential parameter of nutritional status, is the measurement of height, weight, head circumference, proportions, skinfold thickness, and arm circumference in children. Height and head circumference reflect past nutrition, whereas weight, skinfold thickness, and arm circumference reflect present nutritional status, especially of protein and fat reserves. Skinfold thickness is a measurement of the body's fat content because