

With the increasing number of overweight children in the United States, the BMI charts are a critical component of children's physical assessment.

Nursing Alert

BMI for sex and age may be used to identify children and adolescents who are either underweight (<5th percentile), healthy weight (5th percentile to <85th percentile), overweight (\geq 85th percentile and <95th percentile), or obese (\geq 95th percentile).

Skinfold Thickness and Arm Circumference

Measures of relative weight and stature cannot distinguish between adipose (fat) tissue and muscle. One convenient measure of body fat is **skinfold thickness**, which is increasingly recommended as a routine measurement. Measure skinfold thickness with special calipers, such as the Lange calipers. The most common sites for measuring skinfold thickness are the triceps (most practical for routine clinical use), subscapular, suprailiac, abdomen, and upper thigh. For greatest reliability, follow the exact procedure for measurement and record the average of at least two measurements of one site.

Arm circumference is an indirect measure of muscle mass. Measurement of arm circumference follows the same procedure as for skinfold thickness except the midpoint is measured with a paper or steel tape. Place the tape vertically along the posterior aspect of the upper arm from the acromial process and to the olecranon process; half of the measured length is the midpoint. World Health Organization growth curves are available for triceps skinfold and arm circumference measurements.

Head Circumference

Head circumference is a reflection of brain growth. Measure head circumference in children up to 36 months old and in any child whose head size is questionable. Measure the head at its greatest frontooccipital circumference, usually slightly above the eyebrows and pinna of the ears and around the occipital prominence at the back of the skull ([Fig. 4-11](#)). Use a paper or non-stretchable tape because a cloth tape can stretch and give a falsely small