

Underweight (Infants and Children)

Definition/ cut-off value

Birth to 2 years: Less than or equal to 5th percentile weight-for-length.*
2-5 years: Less than or equal to 5th percentile Body Mass Index (BMI)-for-age*.

*Based on National Center for Health Statistics/Centers for Disease Control and Prevention age/sex specific growth charts (2000).

Participant category and priority level

Category	Priority
Infants	I
Children	III

Justification

The Centers for Disease Control and Prevention (CDC) uses the 5th percentile as the cut-off to define underweight in its Pediatric Nutrition Surveillance System. However, CDC does not have a position regarding the cut-off percentile, which should be used to determine underweight as a nutritional risk in WIC.

A survey of articles and texts addressing weight for length or stature cut-off percentiles reveals that: a) many children less than the 5th percentile are in need of nutritional intervention, and b) many authors also view a child at Less than or equal to the 10th percentile as at nutritional risk and in need of preventive nutritional intervention, or at least further evaluation (1).

Weight-for-length/stature describes body proportionality and is sensitive to acute undernutrition, but can also reflect long-term status (2). Physical growth delay is used as a proxy for the deleterious effects undernutrition can have on immune function, organ development, hormonal function and brain development (3). Participation in WIC has been associated with improved growth in both weight and height in children (4).

Clarifications/ Guidelines

Because NCHS/CDC age/sex specific growth charts are used to record the weight and length/stature measurements of healthy, full-term infants, this risk code MAY NOT be used for premature infants. However, because many premature infants show “catch-up growth” by two years of age, this risk code may be used for infants born premature beginning when they are two years of age; use BMI-for-age.

**Clarifications/
Guidelines**

If the measurements cannot be plotted on a specific percentile line, but it is obvious that the measurements would plot below the 5th percentile line, the CA should use professional judgment when assigning this risk code. The CA should provide documentation to explain why the risk code was assigned.

References

1. Food and Nutrition Information Center, National Agriculture Library. Update of Analysis of Literature Regarding Cut-off Percentiles for Low Weight for Length in Infants. Washington, D.C.; February 5, 1991.
 2. **Sherry B. Epidemiology of inadequate growth. In: Kessler DB, Dawson P, editors. Failure to thrive and pediatric undernutrition: A transdisciplinary approach. Baltimore: Paul H. Brooks Publishing Company, Inc.; 1999. p.21.**
 3. **Metallinos-Katsaras E, Gorman KS. Effects of undernutrition on growth and development. In: Kessler DB, Dawson P, editors. Failure to thrive and pediatric undernutrition: A transdisciplinary approach. Baltimore: Paul H. Brooks Publishing Company, Inc.; 1999. p.38.**
 4. Disbrow DD. The costs and benefits of nutrition services: a literature review. J Am Diet Assoc. 1989;89:S3-66.
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