

**At Risk of Short Stature (Infants and Children)**

**Definition/  
cut-off value**

Birth to 2 years: Greater than the 5th and less than or equal to the 10<sup>th</sup> percentile length-for-age\*.  
 2 – 5 years: Greater than the 5th and less than or equal to the 10<sup>th</sup> percentile stature-for-age\*.

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

**Note:** For premature infants and children (with a history of prematurity) up to 2 years of age, assignment of this risk criterion will be based on adjusted gestational age. For information about adjusting for gestational age see: “guidelines for Growth Charts and Gestational Age Adjusted for Low Birth Weight and Very Low Birth Weight Infants.”

**Participant  
category and  
priority level**

Category	Priority
Infants	I
Children	III

**Justification**

**The Centers for Disease Control and Prevention (CDC) uses the 5<sup>th</sup> percentile as the cut-off to define short stature in its Pediatric Nutrition Surveillance System. Due to the health risk prevention emphasis in the WIC Program, the 10<sup>th</sup> percentile cut-off is also used.**

Abnormal short stature in infants and children is widely recognized as a response to a limited nutrient supply at the cellular level. The maintenance of basic metabolic functions takes precedence and resources are diverted from linear growth. Short stature is related to the lack of total dietary energy and to a poor quality of diet, namely, a diet that provides inadequate protein, particularly animal protein, and inadequate amounts of such micronutrients as zinc, vitamin A, iron, copper, iodine, calcium, and phosphorus (1).

Demonstrable differences in stature exist among children of different ethnic and racial groups. However, racial and ethnic differences are relatively minor compared with environmental factors (1).

Growth patterns of children of racial groups whose short stature has traditionally been attributed to genetics have been observed to increase in rate and in final height under conditions of improved nutrition (2,3).

Short stature may also result from disease conditions such as endocrine disturbances, inborn errors of metabolism, intrinsic bone diseases, chromosomal defects, fetal alcohol syndrome, and chronic systemic diseases.

Participation in WIC has been associated with improved growth in both weight and height in children (4).

**Clarifications/  
Guidelines**

If the measurements cannot be plotted on a specific percentile line, but it is obvious that the measurements would plot below the 10<sup>th</sup> 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. Institute of Medicine: WIC Nutrition Risk Criteria: A Scientific Assessment. Washington (DC): National Academy Press;1996; pp. 104-109.
2. Pipes PL, Trahms CM. Nutrition in infancy and childhood, 6<sup>th</sup> edition. Seattle (WA): WCB/McGraw-Hill; 1997. p.2.
3. **Berhane R, Dietz WH. Clinical assessment of growth. In: Kessler DB, Dawson P., editors. Failure to thrive and pediatric undernutrition: A transdisciplinary approach. Baltimore (MD): Paul H. Brooks Publishing Company, Inc.; 1999. p. 199.**
4. Disbrow DD. The costs and benefits of nutrition services: a literature review. J Am Diet Assoc. 1989;89:S3-66.