



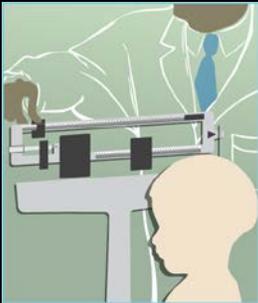
CHILD HEALTH NOTES

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Promoting early identification and partnerships between families, primary health care providers & the community.

Distributed by: CLARK COUNTY PUBLIC HEALTH – Children with Special Health Care Needs

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GROWTH CHARTS

Accurate assessment of growth in childhood is an essential part of well child care. Pediatric providers need to be familiar with the standard growth charts that are available, how they are meant to be used, and how they have changed over the last few years. In 2006, an expert panel was convened by The Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the American Academy of Pediatrics (AAP).

On the basis of this input, CDC and AAP recommend that clinicians:

- ❖ Use the 2006 WHO international growth *standard* charts, rather than the 2000 CDC growth *reference* charts, for children aged <24 months.
- ❖ Use the 2000 CDC growth *reference* charts for children ages 2 to 20 years.

WHO Growth Charts

In April 2006, the World Health Organization (WHO) released new international growth charts for children 0-59 months. Their data was obtained from the WHO MGRS (Multicentre Growth Reference Study), a study conducted from 1997-2003 in six sites: Brazil, Ghana, India, Norway, Oman and the US (California). **This study obtained longitudinal data from birth to 24 months of age, in children who lived in conditions to promote optimal growth.** Infants were exclusively breastfed until at least 4 months of age and were born at 37-42 weeks gestation. Exclusion criteria included maternal smoking, multiple births, and low socioeconomic status. A primary hypothesis of MGRS was that all young children have the potential to grow similarly, regardless of their ethnicity or place of birth, if they are in a healthy environment and receive adequate nutrition. It was found that the mean length measurements of children < 24 months were virtually identical in the six countries.

Comparison of CDC and WHO growth charts

	2000 CDC Growth Chart	2006 WHO Growth Chart
Method	population <i>cross-section</i> measured at different ages	<i>longitudinal</i> measures of individual children
Age Range	Birth to 3 years	Birth to 2 years
Cutoff Range	5 th – 95 th percentiles (on the form commonly distributed)	2 nd – 98 th percentiles
Use	<i>descriptive</i> : indicate how children grew in a particular place and time, does not imply a healthy pattern of growth growth <i>reference</i>	<i>prescriptive</i> : growth under optimal conditions, a standard against which all infants should be compared growth <i>standards</i>

Infant Growth Patterns on the WHO and CDC charts

Growth patterns differ between breastfed and formula-fed infants. Beginning around 3 months of age, weight gain is generally lower for breastfed infants than for that of the formula-fed infant. Linear growth generally follows a similar pattern for both breast- and formula-fed infants.

- For the first 3 months of age, the WHO growth charts show a somewhat faster rate of weight gain than the CDC growth charts.
- After about 3 months of age, WHO growth charts show a slower rate of growth than the CDC growth charts.
- Historically, CDC used the 5th and 95th percentiles as cutoffs. Using the WHO 2nd and 98th percentile cutoff values indicates a change in clinical protocol. **The WHO charts will generally identify fewer infants and young children with**

failure to thrive or short stature after 3 months of age than the CDC charts. Infants and young children identified with low weight for age will be more likely to have a substantial deficiency than some of those identified with the CDC charts.

Transition from WHO chart to CDC chart at 2 years of age

When a child reaches age 24 months, health care providers need to switch from using the WHO growth standards charts to using the CDC growth reference charts for children ages 2 years up through 19 years. During the transition from one chart to another, **children may experience a change in growth classification** because of a change from:

- Recumbent length to standing height measurements. Note that the difference between recumbent length and stature in national survey data is approximately a 0.8 cm (¼ inch). Standing height measures less than recumbent length.
- Different data sets used to construct charts.
- Weight-for-length chart to BMI-for-age chart.
- One set of cutoff values to another (2nd – 98th percentile to 5th – 95th percentile.)

Information and Resources:

- *Use of World Health Organization and CDC Growth Charts for Children Aged 0-59 Months in the United States.* MMWR, 2010; 59 (No. RR-9): 1-15.
- Ogata, B and Feucht, S, *Assessment of Growth: Part 1 and Part 2*, Nutrition Focus Newsletter 26 (6): 1-12, 2011 and 27 (1): 1-15, 2012. <http://depts.washington.edu/nutrloc/webapps/>
- WHO growth chart training: <http://www.cdc.gov/nccdphp/dnpao/growthcharts/who/index.htm>
- WHO information: <http://www.who.int/childgrowth/en/>
- CDC information: http://www.cdc.gov/growthcharts/cdc_charts.htm
- Growth charts for downloading: http://www.cdc.gov/growthcharts/who_charts.htm

[If you have concerns about a child's growth, contact a pediatric dietitian. If you have trouble locating a pediatric dietitian, you can contact the Washington State Children with Special Health Care Needs Nutrition Network http://depts.washington.edu/cshcnut/nutnet/index.html](http://depts.washington.edu/cshcnut/nutnet/index.html)

Special Needs Information and Resources:

Local:	Children with Special Health Care Needs Program, Public Health http://www.clark.wa.gov/public-health/family/needs.html WIC: Vancouver Battleground Washougal	360-397-8472 referrals 360-397-8000 ext. 7400 Connie Callahan, PHN 360-397-8459 360-687-7126 360-835-7802
Regional:	WithinReach Family Health Hotline ParentHelp123.org Early Support for Infants and Toddlers Program (formerly ITEIP) Parent to Parent Support Programs of Washington The Center for Children with Special Needs Washington State Medical Home	1-800-322-2588, 1-800-833-6388 TTD www.withinreachwa.org www.ParentHelp123.org Main number: (360) 725-3500 http://del.wa.gov/development/esit/ (800) 821-5927 www.arcwa.org/parent_to_parent.htm www.cshcn.org www.medicalhome.org
National/ Internet:	American Academy of Pediatrics AAP Developmental and Behavioral Pediatrics American Academy of Family Physicians CDC Act Early Family Village (Extensive family resources for CSHCN) Family Voices (Links to national/state family support networks) Nutrition for Children with Special Health Care Needs in WA State • CSHCN Nutrition Network • Washington State Community Feeding Teams	www.aap.org www.dbpeds.org www.aafp.org www.cdc.gov/ncbddd/actearly/index.html www.familyvillage.wisc.edu www.familyvoices.org http://depts.washington.edu/cshcnut/ http://depts.washington.edu/cshcnut/nutnet/index.html http://depts.washington.edu/cshcnut/feeding/index.html

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