

Measuring Weight & Length: 0 - 2 Year Olds

What children should I take length measurements for?

- ▶ Length is measured lying down. Height is measured standing up. Typically, length (lying down) is measured in children 0-2 years old. The charts are normalized for this age group. The CDC recommends that health care providers use the WHO growth standards to monitor growth in infants and children ages 0-2 year old in the U.S. The CDC recommends using their growth charts for children age 2 years and older in the U.S!.

Why should I measure weight-for-length?

- ▶ The CDC recommends that health care providers use the WHO growth standards to monitor growth for infants and children between 0 and 2 years old in the United States.
- ▶ BMI is not a unit of measurement under the age of two. Under the age of two the length measure is used to track growth. BMI uses height not length in its calculation. Length and height cannot be used interchangeably.
- ▶ Weight-for-length percentile charts allow clinicians to determine the trend of weight gain as compared to length gain *over time* (the measurement cannot stand on its own). Any abnormal patterns can help clinicians identify those children who need early dietary intervention.
- ▶ This important information is harder to appreciate when plotting weight-for-age and length-for-age with infants.
- ▶ Many older children and adolescents with BMI > 95 percentile have been overweight since infancy, so early identification in the first 2 years can have large preventive effects.

Measuring Weight

Infants should be weighed using a hospital-grade platform scale. This may be a beam balance scale or a digital (electronic load cell or strain gauge) scale. Check your equipment regularly to make sure you are getting accurate measurements. Scales should be calibrated on a routine basis. Calibration involves putting known weight on the scale to check accuracy. Be sure the scale is placed on a flat, uncarpeted floor.

Procedure:

1. Remove shoes, clothing, and diaper from the infant.
2. Place the scale in the “zero” position before you place the infant on the scale.
3. Make sure the child is on the center of the platform.
4. Record the measurement to the nearest decimal fraction.
5. Remove the child from the scale.

Measuring Length^{2,3}

Best Practice: A platform with an attached yardstick, a fixed head plate, and a movable footplate is required. The footplate can be adjusted so it comes up to the bottom of infant's heels. This apparatus should be used on a flat surface and requires two people to operate.

Procedure:

1. Remove shoes, clothing, and diaper from the infant.
2. Lay the child on the platform.
3. Have one person hold the head of the infant.
4. The other person should keep the infant's knees straight and bring the adjustable footplate up to the infant's heels.
5. Secure the footplate.
6. Remove the infant from the surface.
7. Record the measurement on the yardstick to the nearest 1/8th of an inch.

Common Practice: Many clinicians measure infants by laying the patient on the paper covering the exam table and marking the positions of the head and the feet on the paper. They then remove the patient and use a measuring tape to quantify the distance between the two pen markings. While this procedure can be very inaccurate due to the incorrect positioning of the infant, movement and crumpling of the paper and failure to get perpendicular markings by the pen there are a few tips to getting good length data if this method is used in your office:

- ▶ Ask the caregiver who is with the patient to hold the patient as still as possible.
- ▶ Measure the length three times and use the average.
- ▶ If you notice a leveling off or a decline in the patient's length consider a more precise measurement such as the best practice noted above.

Reference:

¹ Centers for Disease Control and Prevention: Growth Charts (www.cdc.gov/growthcharts)

² Lifshitz, Fima. *Pediatric Endocrinology Fifth Edition: Volume 2 Growth, Adrenal, Sexual, Thyroid, Calcium, and Fluid Balance Disorders*. 2007: 4-6.

³ Wales, Jeremy K.H., Rogol, Alan D., Maarten Wit, Jan. *Color Atlas of Pediatric Endocrinology and Growth*. 1996: 2-3.