

# Physical parameters

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# Gathering information about patient:

- taking history
- performing physical examination
- obtaining selective lab and imaging tests

- The monitoring of a child's growth is probably the most important job of a pediatrician! An aberration in growth pattern is often the first clue that there is something wrong with the child. The growth of the child is used in conjunction with the signs and symptoms.

- Physical examination: general appearance: well vs poorly nourished → MEASURE
  - Height
  - Weight
  - head circumference (until 3 years)
- → PLOT and COMPARE TO NORMAL
- (follow development, medication dose)

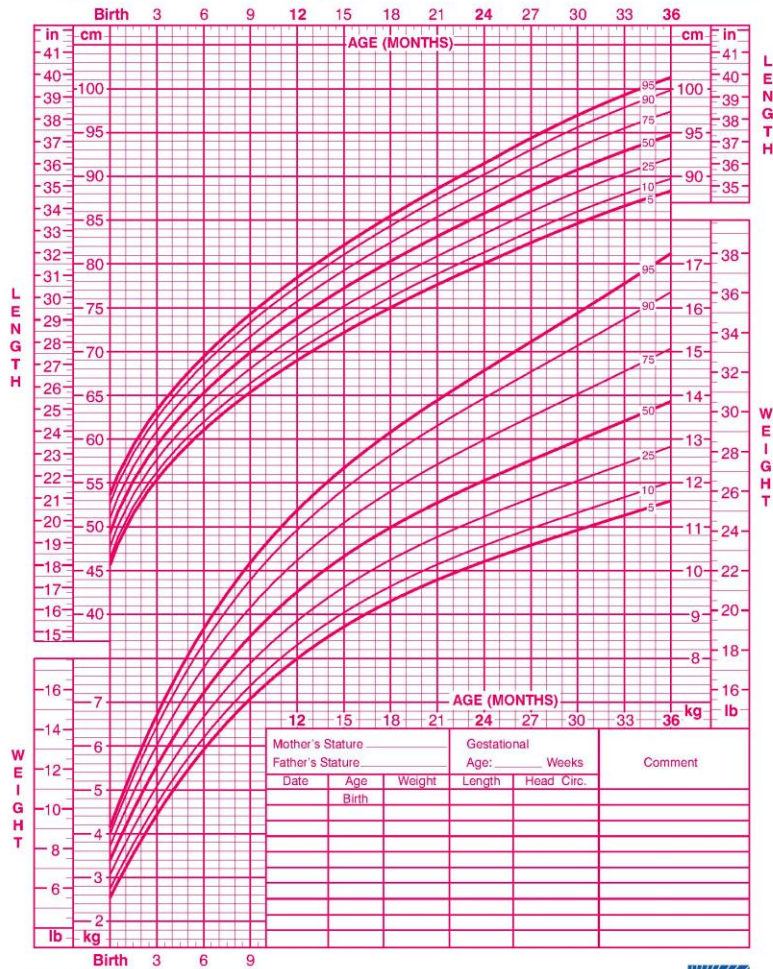
# Growth charts for girls

## Birth to 36 months: Girls

### Length-for-age and Weight-for-age percentiles

NAME \_\_\_\_\_

RECORD # \_\_\_\_\_



Published May 30, 2000 (modified 4/20/01).  
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).  
<http://www.cdc.gov/growthcharts>

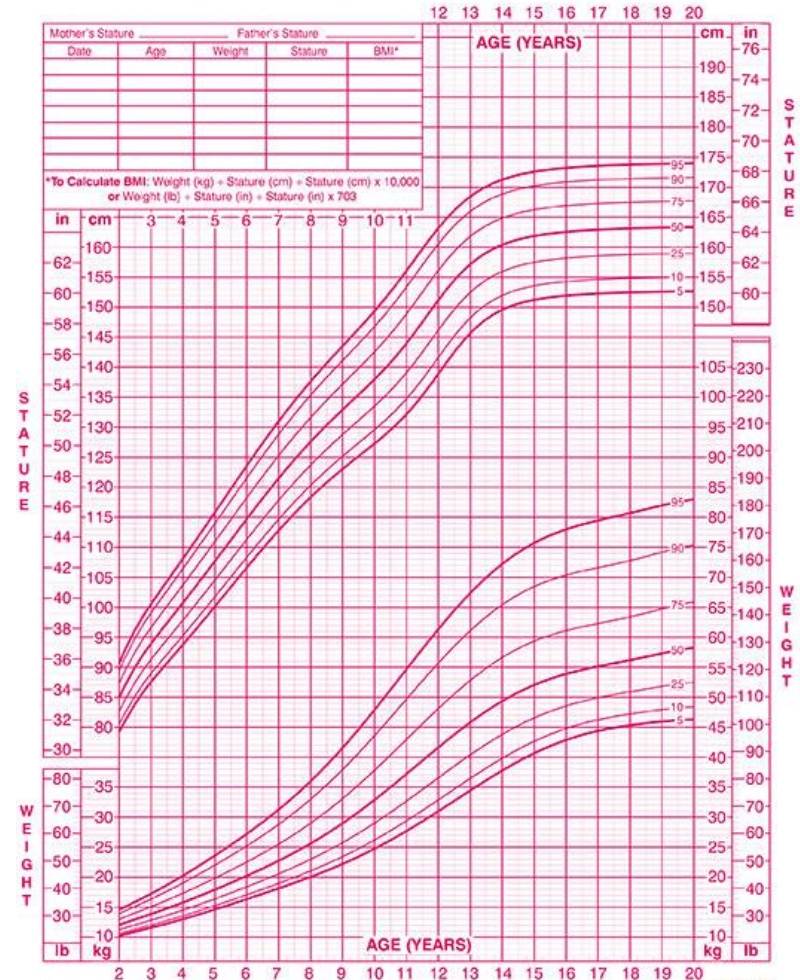


## 2 to 20 years: Girls

### Stature-for-age and Weight-for-age percentiles

NAME \_\_\_\_\_

RECORD # \_\_\_\_\_



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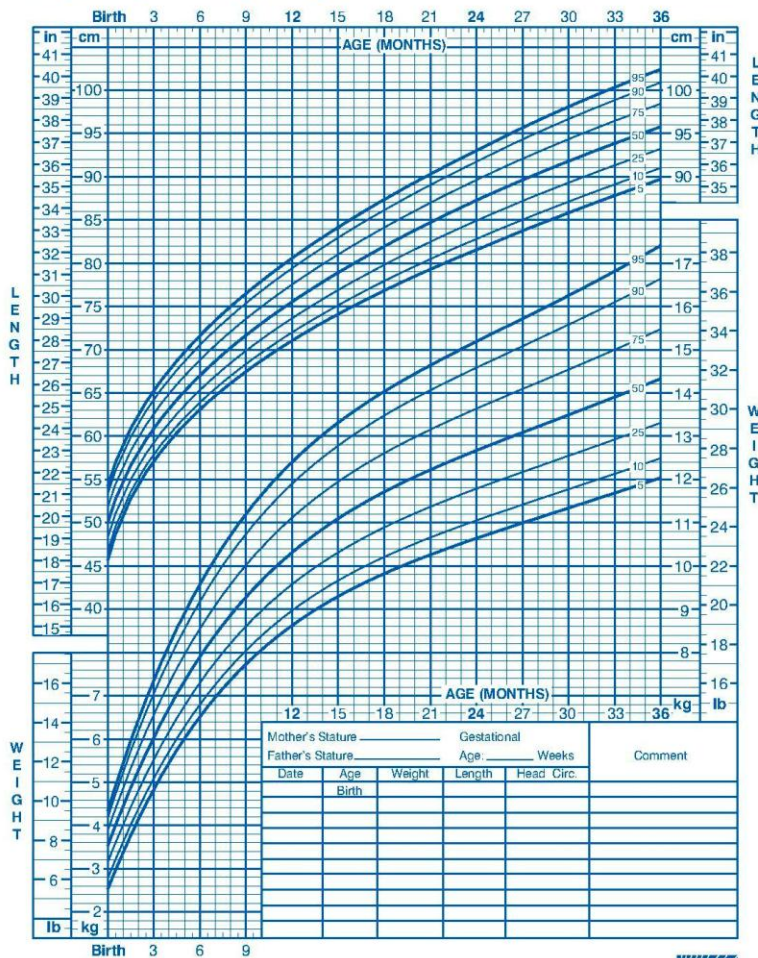




# Growth charts for boys

Birth to 36 months: Boys  
Length-for-age and Weight-for-age percentiles

NAME \_\_\_\_\_  
RECORD # \_\_\_\_\_



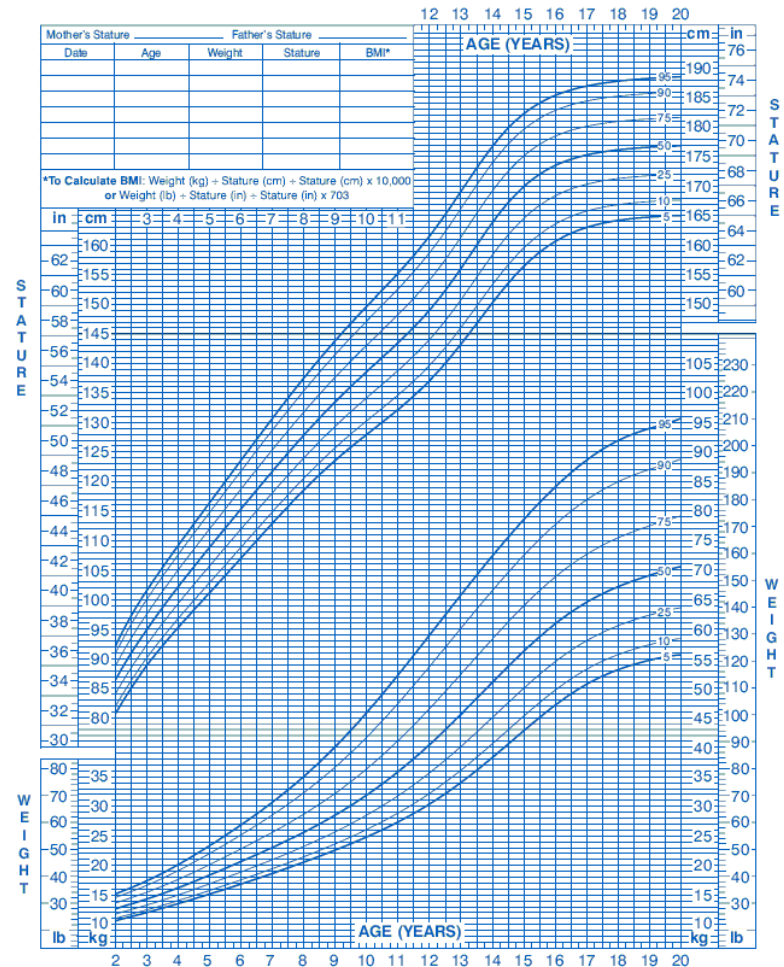
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2 to 20 years: Boys  
Stature-for-age and Weight-for-age percentiles

NAME \_\_\_\_\_  
RECORD # \_\_\_\_\_

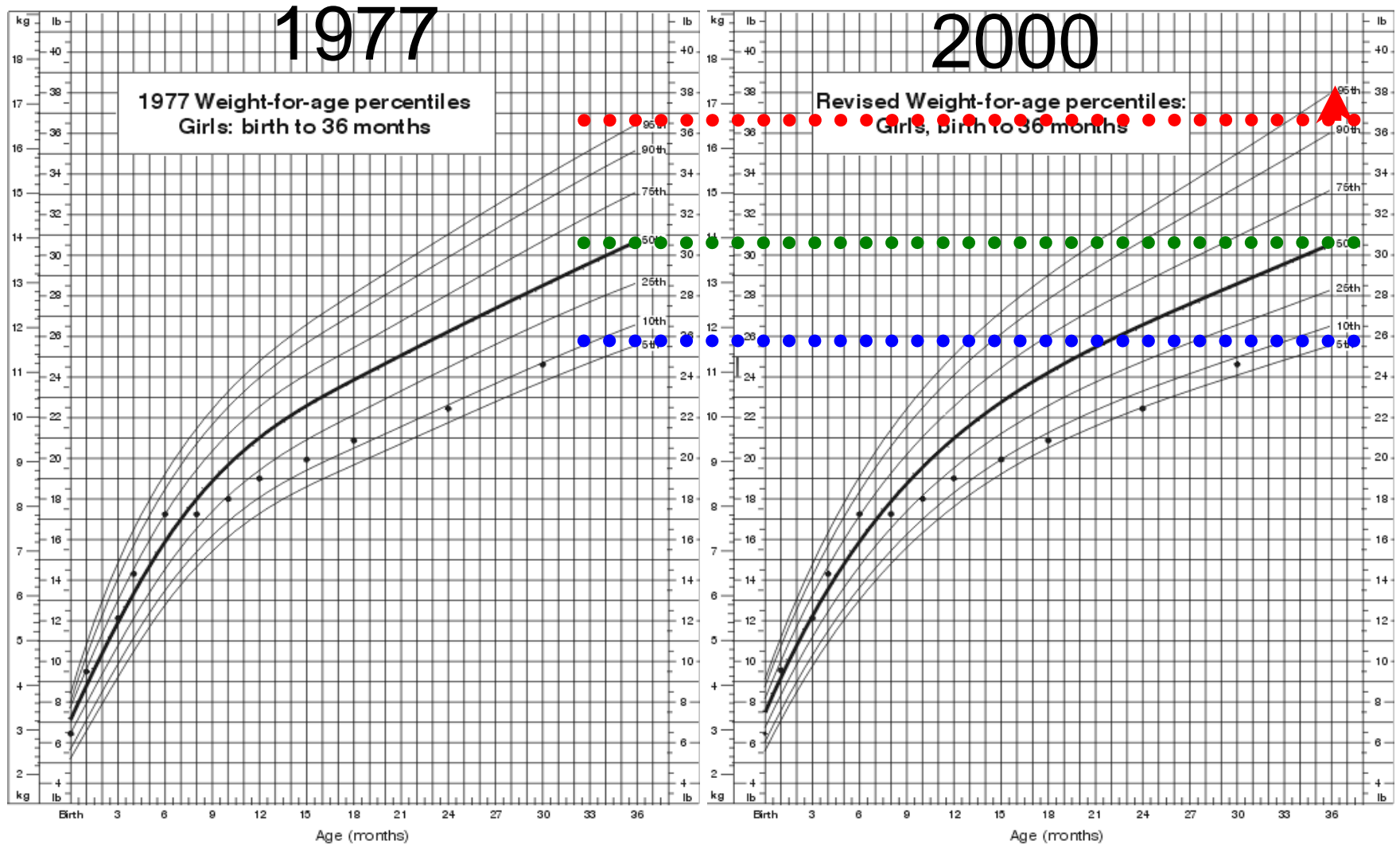


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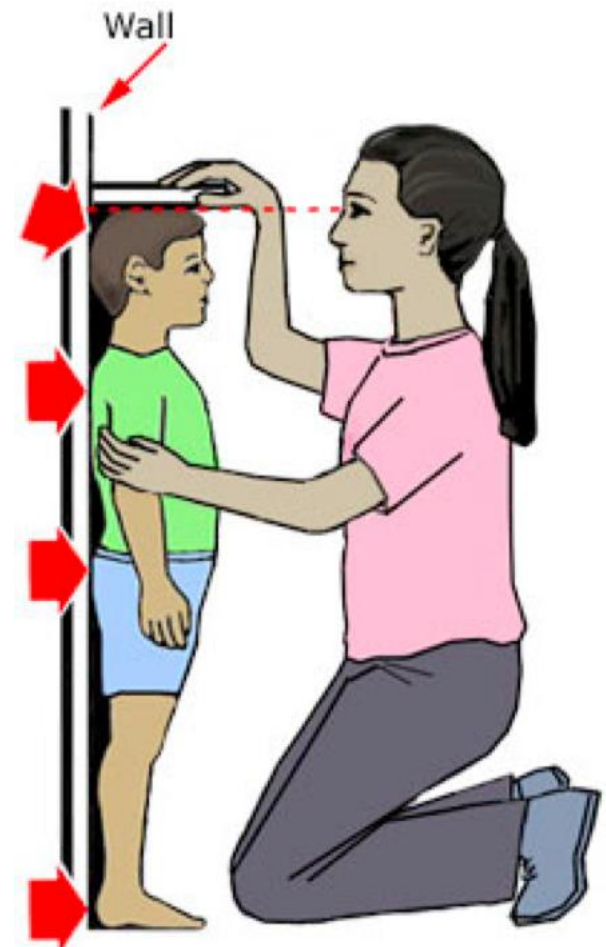
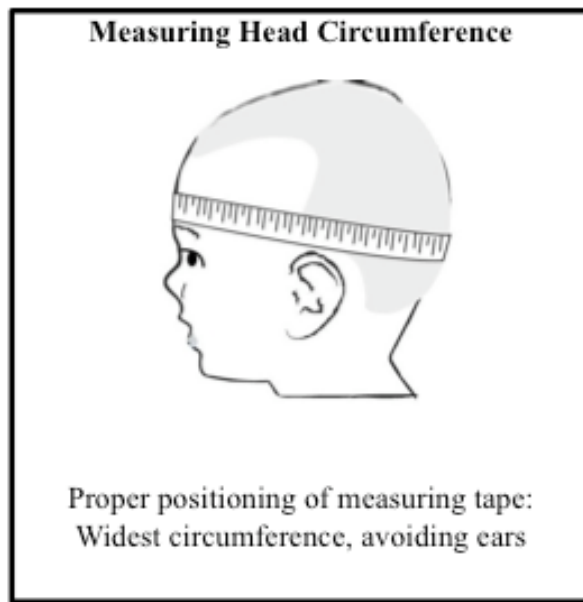
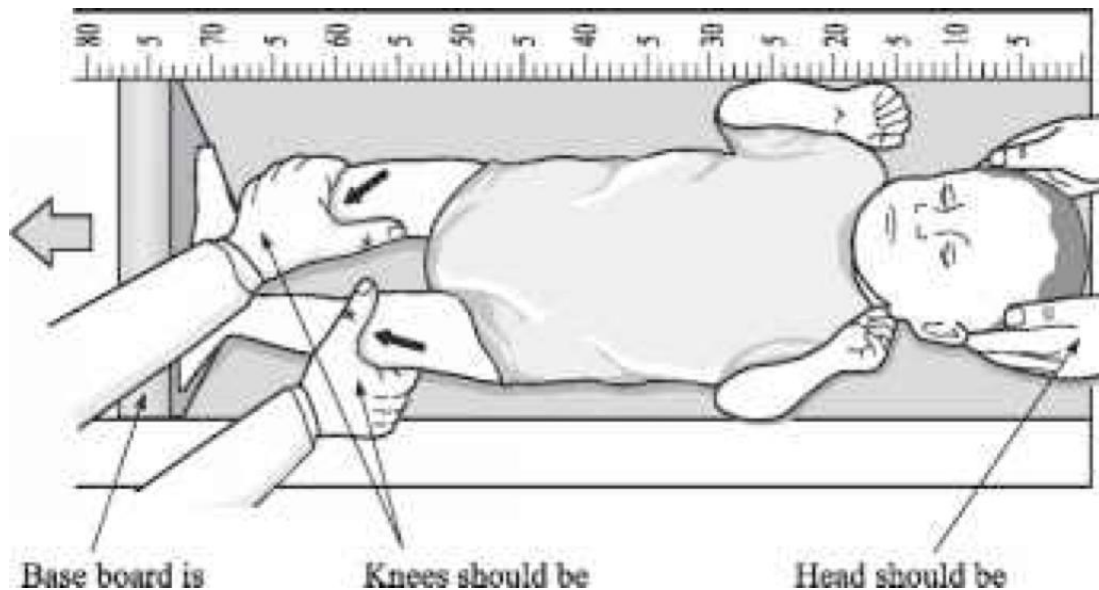


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# Growth charts change



# Appropriate measurement technique!





# Calculated parameters:

- - body mass index:

$$\text{BMI} = \text{weight (kg)} / \text{height}^2 (\text{m}^2)$$

~total body fat, waist to hip ratio,  
instead of weight for height charts

- - body surface area:

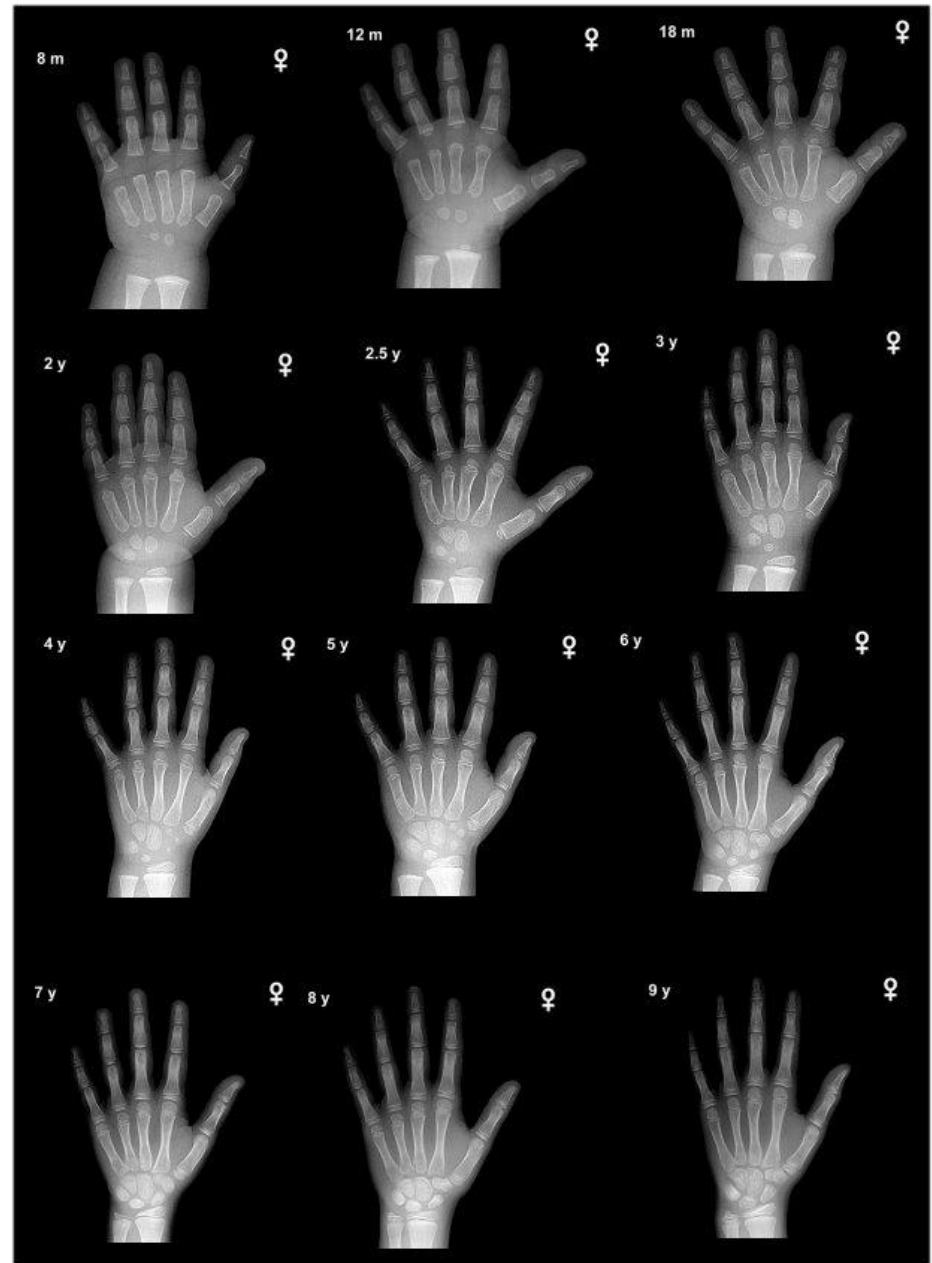
$$\text{BSA} = \sqrt{(\text{height (cm)} * \text{weight(kg)}) / 3600}$$

# Growth velocity

- 1st year      23-28 cm/y
  - 1-3 ys      7,5-13 cm/y
  - 3-8/9      4.5-7 cm/y
  - Puberty      8-9 cm/y (girls) 10-11 cm/y (boys)
- 
- Kids settle into a growth channel by 24 months.
  - Growth velocity parallels sexual maturity.

# Bone age

- childhood bone development occurs in a predictable sequence. Left wrist radiograph >2 years compared to 'normal' of the same chronological age.



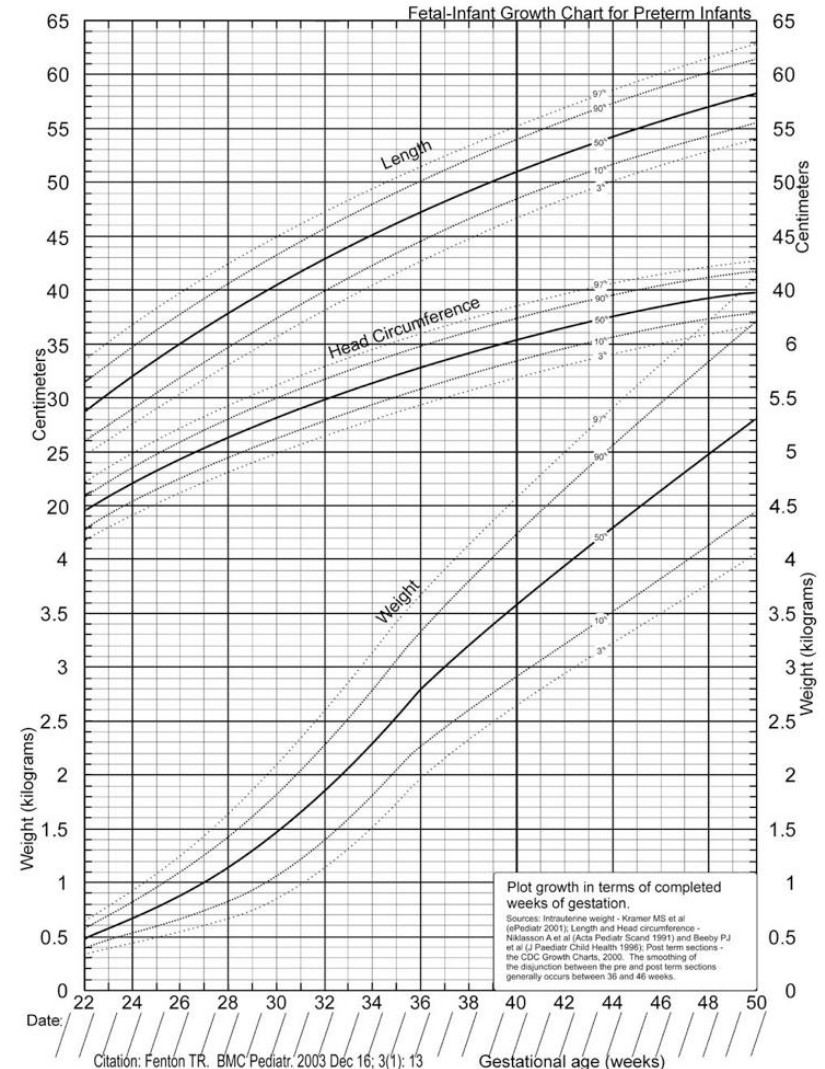
# Midparental height:

- Boys =  $(\text{mother's height} + 13 + \text{father's height}) / 2$
- Girls =  $(\text{mother's height} + \text{father's height} - 13) / 2$

# Special growth charts

- Premature babies
- Turner syndrome
- Down syndrome
- Achondroplasia, etc

Growth parameters should be adjusted for prematurity until 24 months or up 3 years is VLBW (1500 g >).





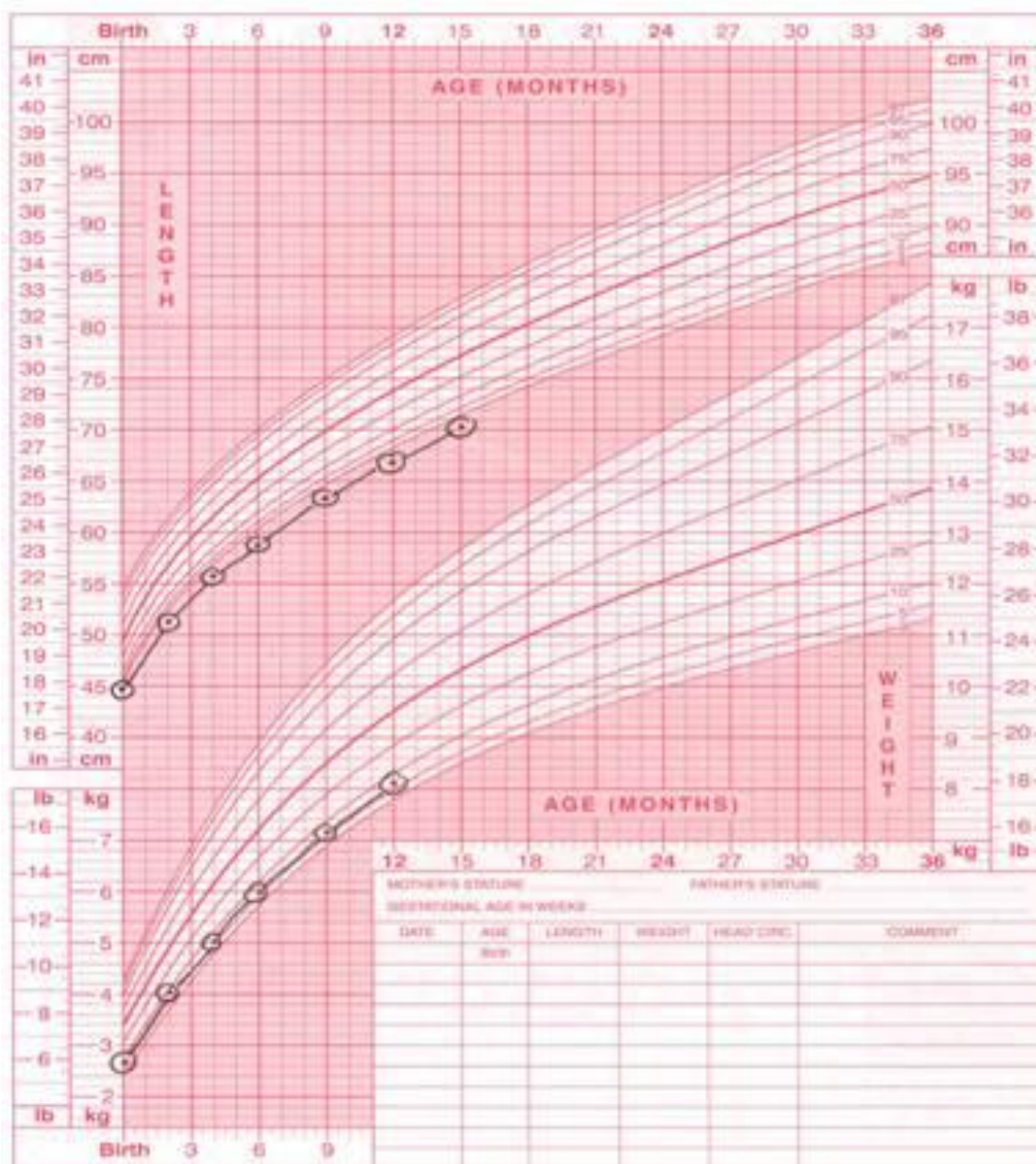
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**GIRLS: BIRTH TO 36 MONTHS**  
**CDC US GROWTH CHARTS\***

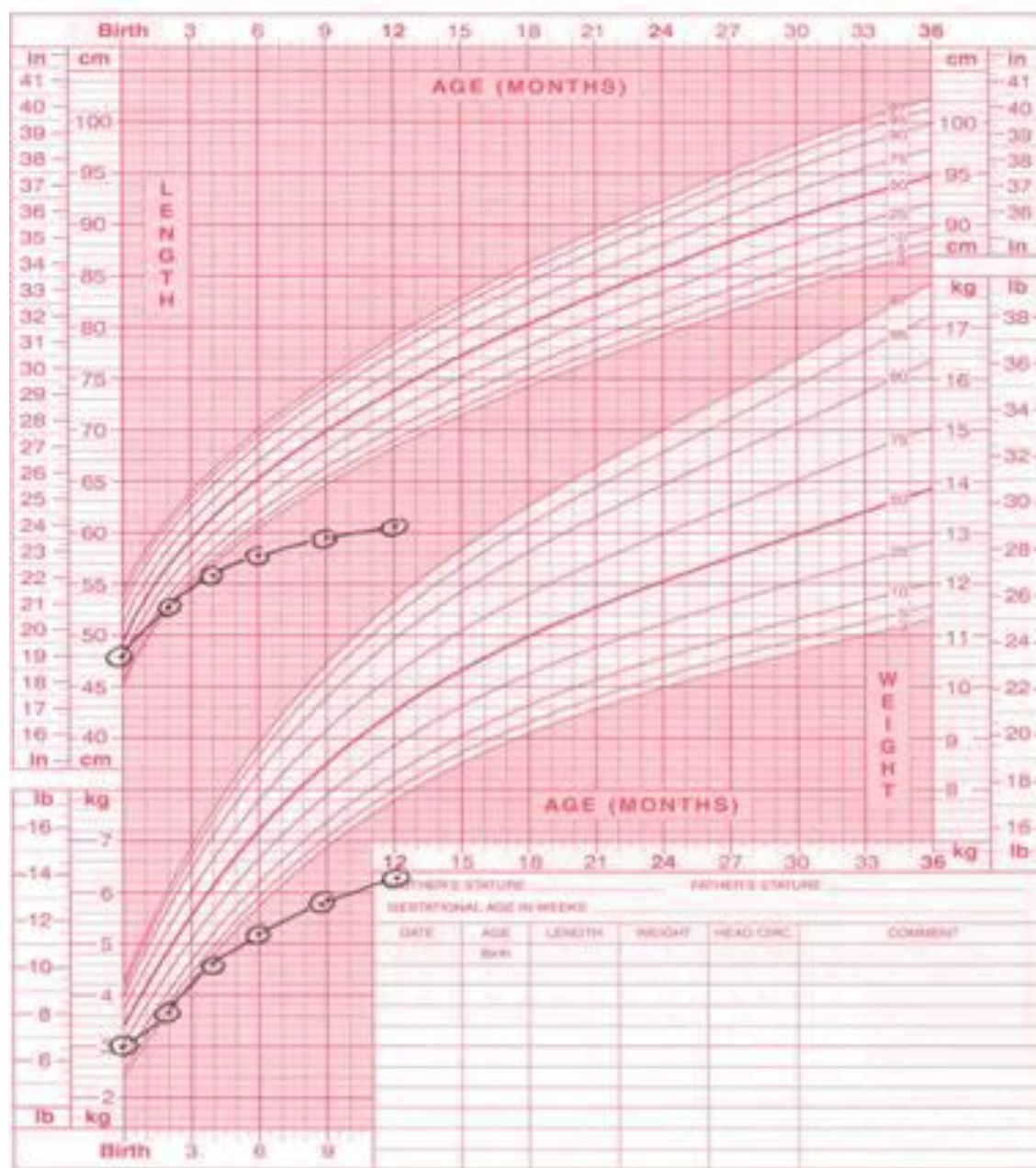
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**GIRLS: BIRTH TO 36 MONTHS**  
**CDC US GROWTH CHARTS\***

Name \_\_\_\_\_ Record # \_\_\_\_\_



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