Failure to thrive
FTT

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Failure To Thrive
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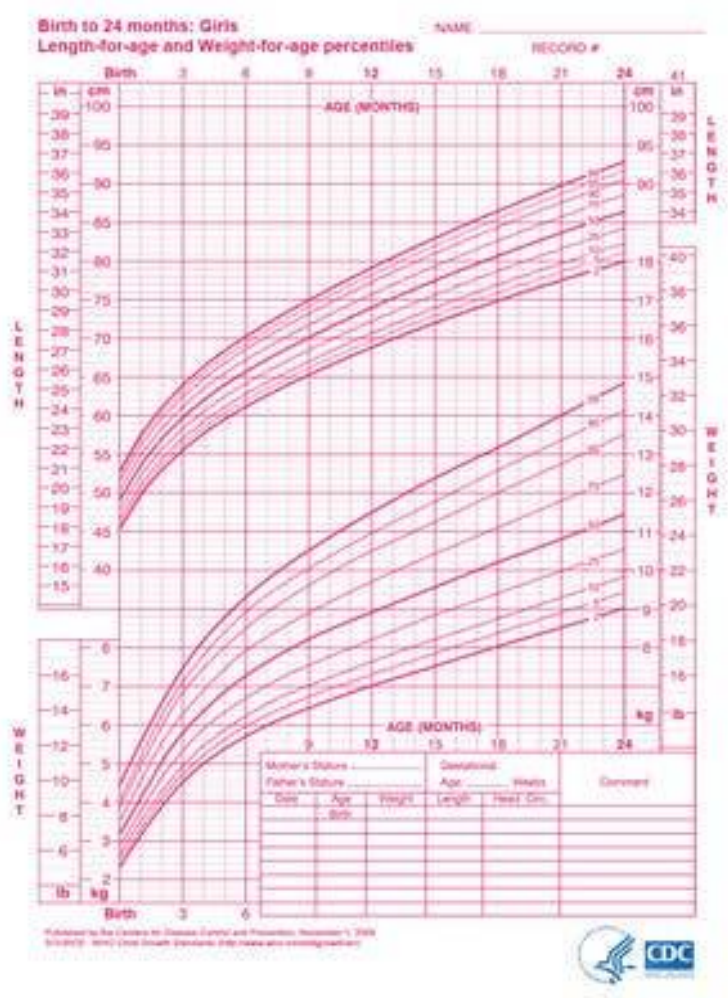
Agenda :

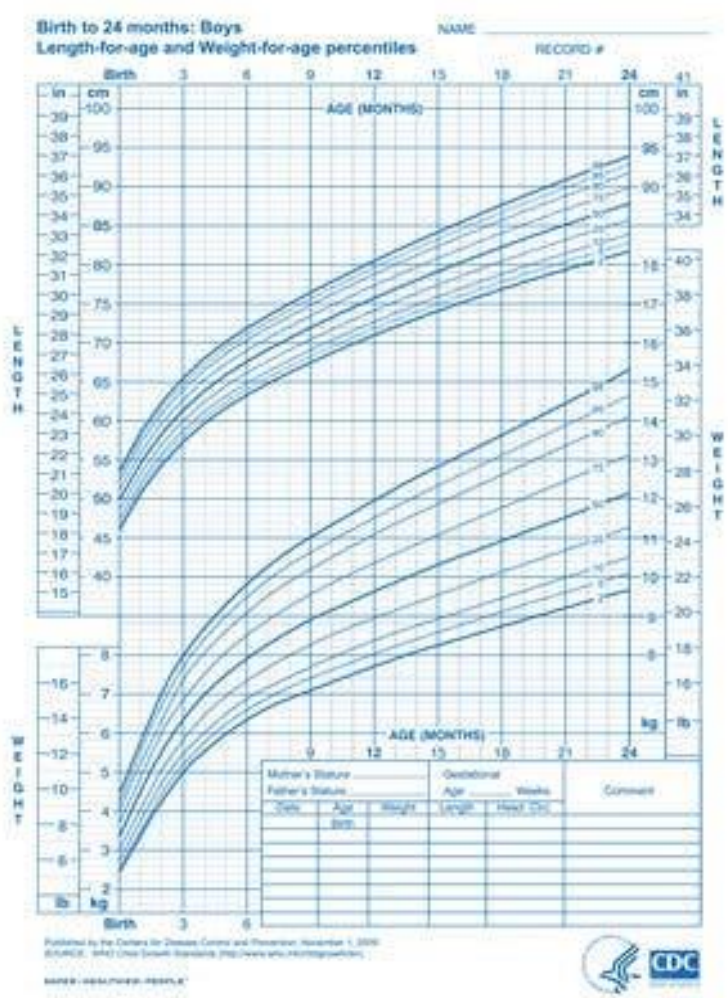
- Growth chart :
  - CDC vs WHO growth charts
- Types of FTT
- Nutritional rehabilitation

Growth chart

- WHO growth charts
- CDC growth charts

CDC growth charts



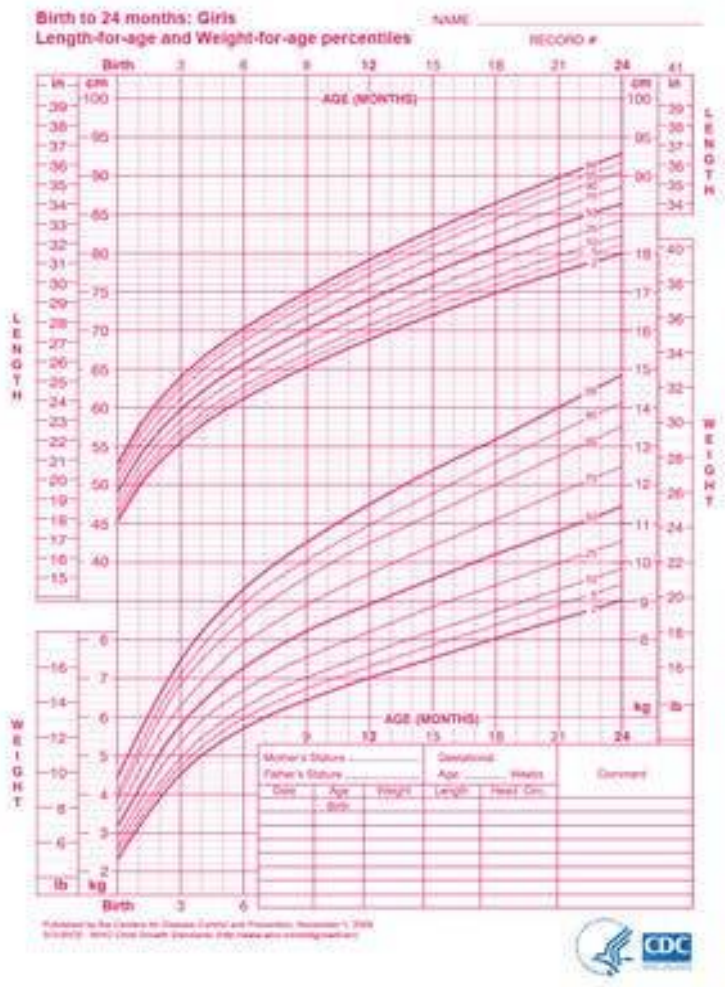


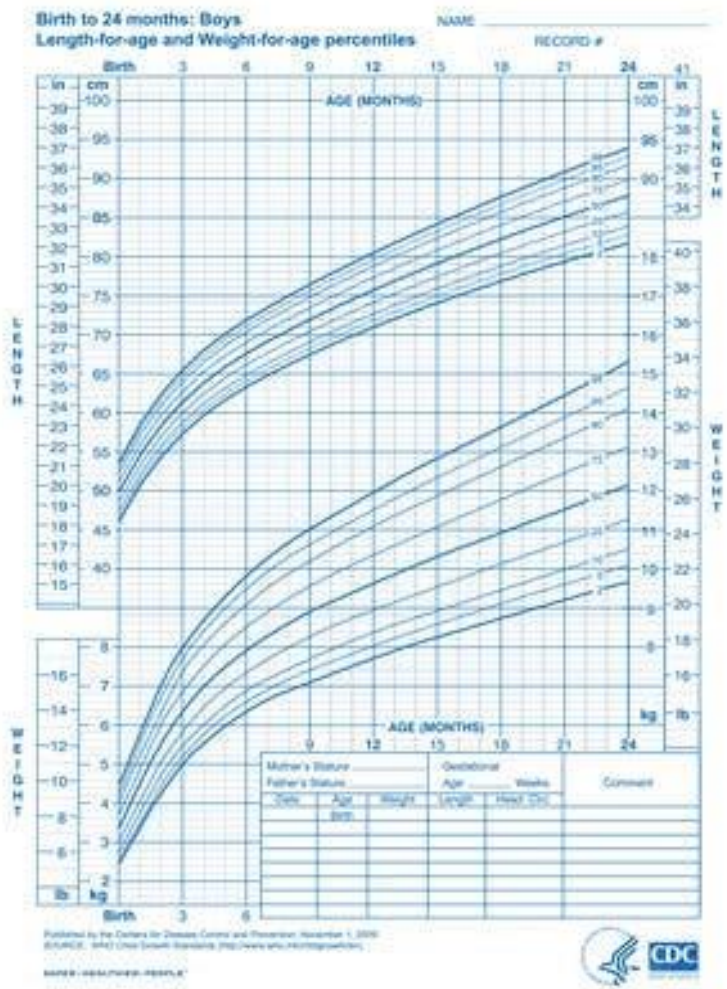
CDC growth chart

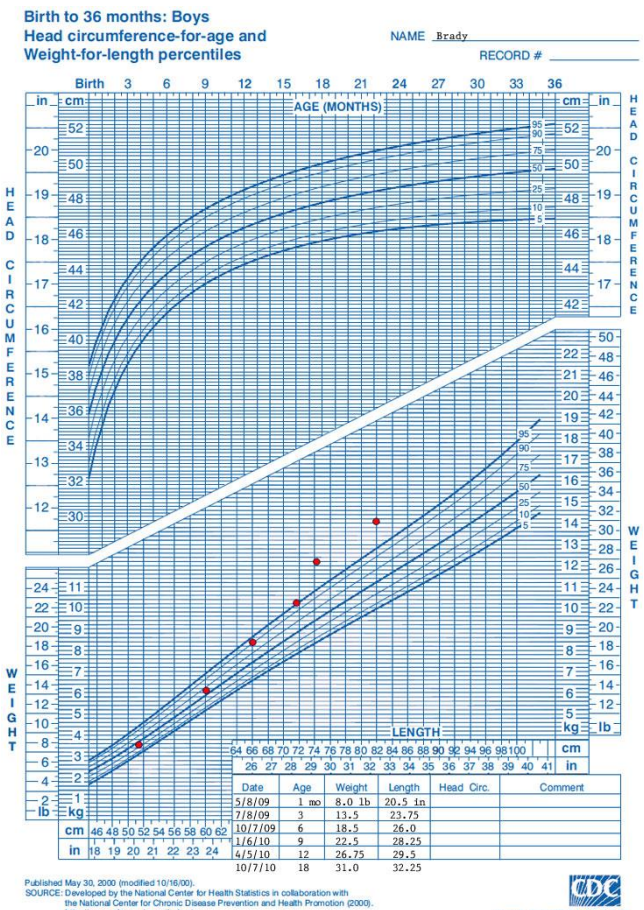
- Boys and girls
- Blue and red
- Forms :
  - Birth -36 months
  - 2 years- 19 years

- 2 pages: weight and height + Head circumference and BMI

CDC Growth Charts 5th and 95th percentile		
BMI-for-age	≥ 95th	Obesity
BMI-for-age	≥ 85th and < 95th	Overweight
BMI-for-age	< 5th	Underweight
Stature-for-age	< 5th	Short Stature







Published May 30, 2000 (modified 10/16/00).
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

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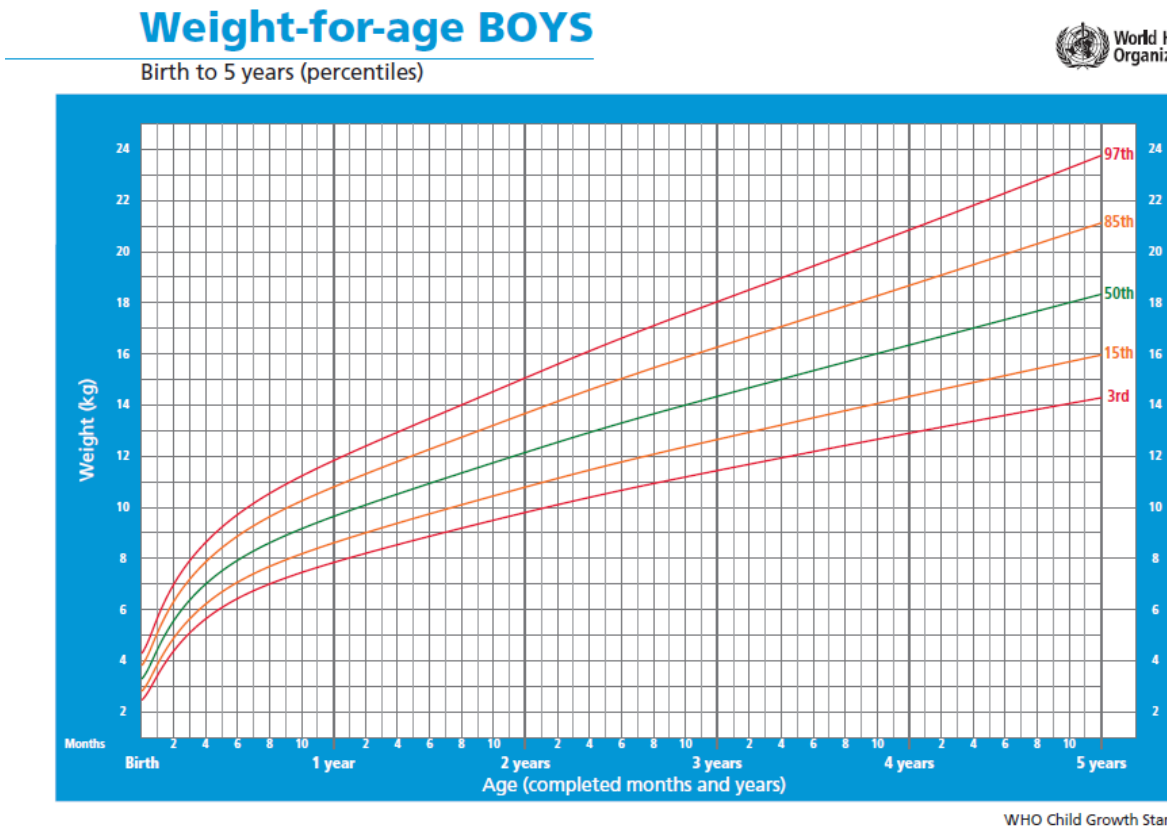
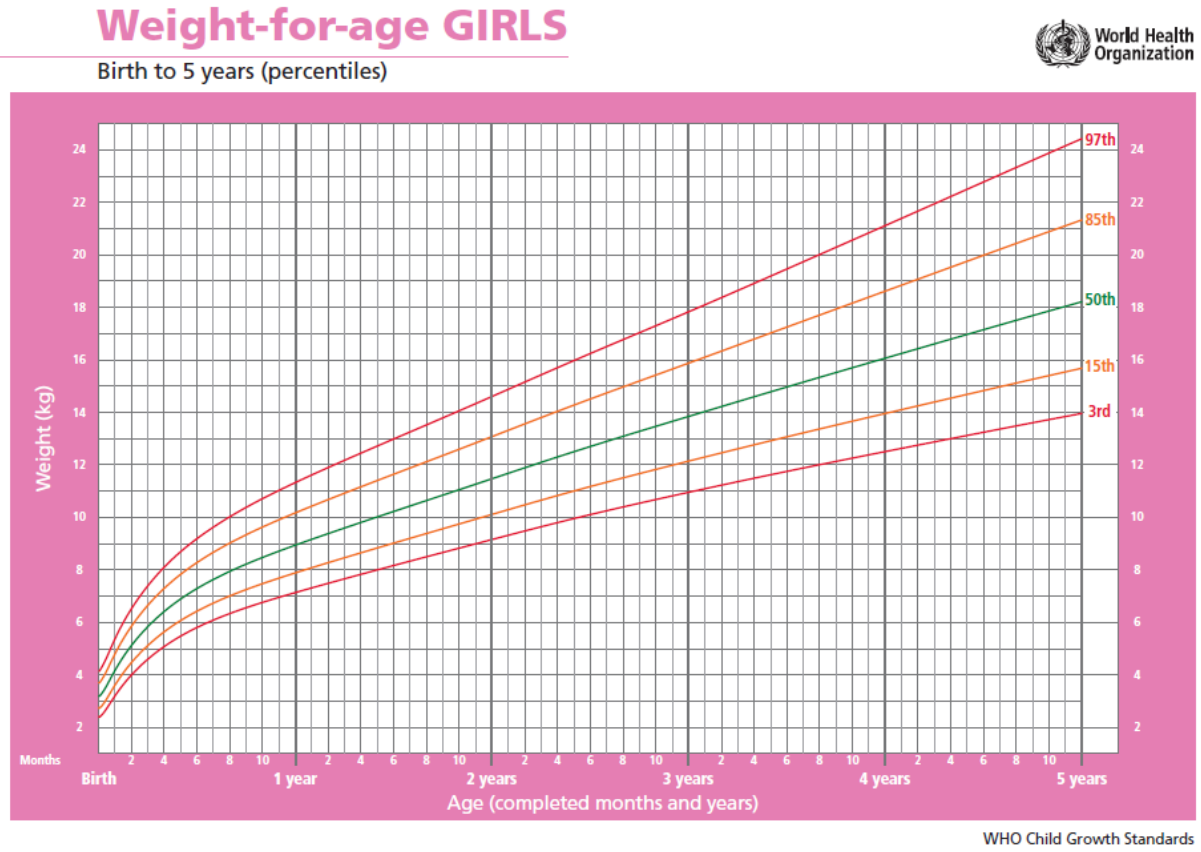
CDC growth charts

- The CDC growth charts are a national reference.
- Represent how US children and teens grew primarily during the 1970s, 1980s and 1990s.
- Result of cross sectional studies

WHO growth charts





WHO growth charts

- International standards
- Show how healthy children should grow.
- The standards describe the growth of children living in six countries in environments believed to support optimal growth.
- These countries are : Brazil, Ghana, India, Norway , Oman and the USA
- The WHO growth charts use the growth of breastfed infants as the norm for growth.
- Result of longitudinal studies between the ages of 0-24 months, then cross sectional till age 5 years
- Mothers and newborns were screened and enrolled at birth and visited at home a total of 21 times on weeks 1, 2, 4 and 6; monthly from 2–12 months

- The WHO growth standard charts use the 3rd and the 97th percentiles as the outer most percentile cutoff values indicating abnormal growth.

- The CDC growth reference charts use the 5th and the 95th percentiles as the outermost percentile cutoff values indicating abnormal growth.

CDC Recommendation

- Use the WHO growth charts for all children from birth up to 2 years of age to monitor growth in the United States.

- Use the CDC growth charts for children and teens aged 2 through 19 years to monitor growth in the United States.*

Why?

- The WHO standards establish growth of the breastfed infant as the norm for growth.
- The WHO standards provide a better description of physiological growth in infancy.
- The WHO standards are based on a high-quality study designed explicitly for creating growth charts.

Failure To Thrive
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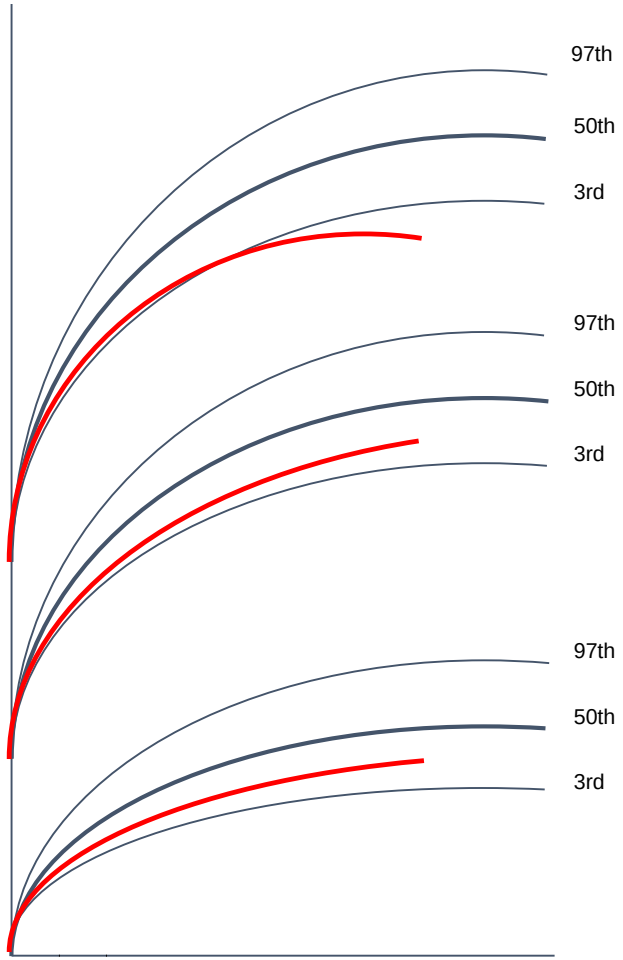
- The inability to maintain the expected rate of growth over time.

- Growth is assessed by plotting the patient's growth parameters over subsequent visits and comparing the growth rate to normal population growth rates for age.

- One set of measurements can not assess rate of growth and therefore is not sufficient to diagnose failure to thrive

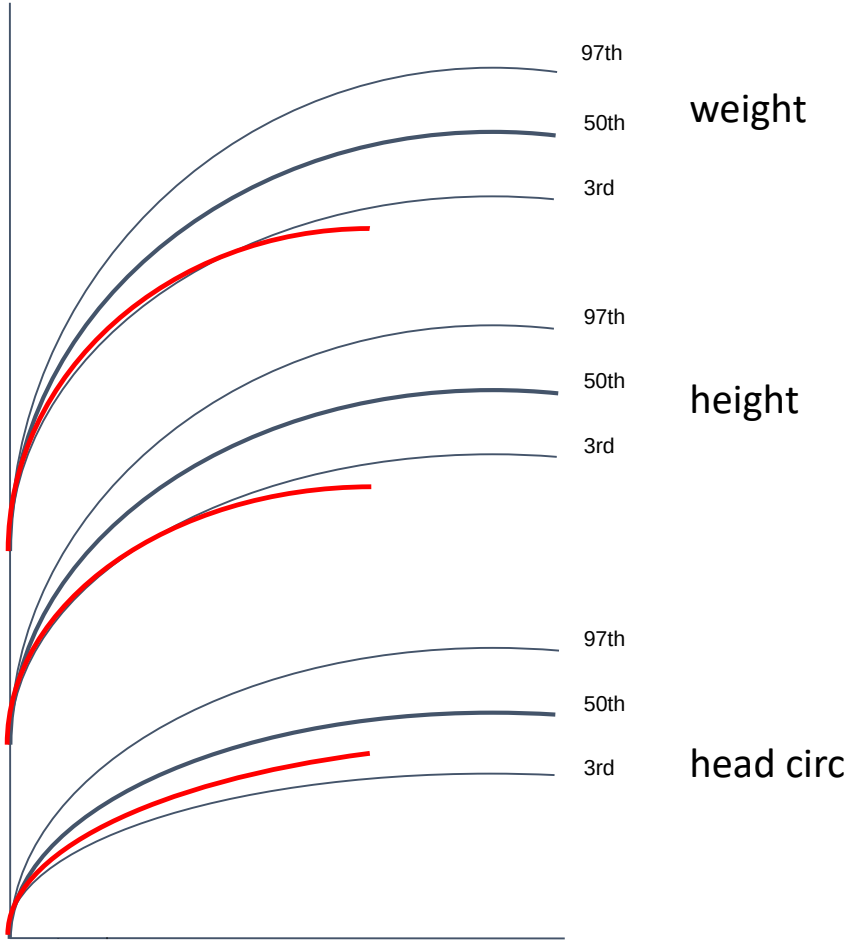
Failure to Thrive



- List the three main causes of this type of growth pattern

- Type I failure to thrive
  - Inadequate caloric intake
  - Excessive loss of calories
  - Increased metabolic demands

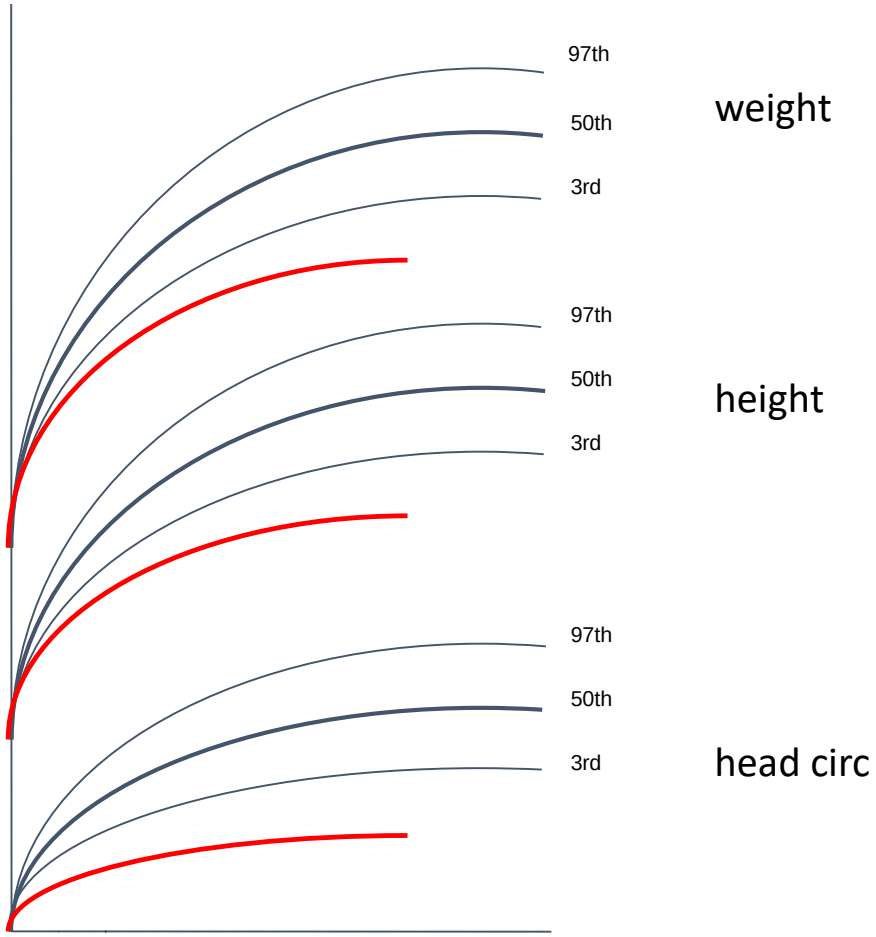
Failure to Thrive



- List three causes of this type of growth pattern

- Type II failure to thrive
  - Constitutional growth delay
  - Genetic short stature
  - Hypothyroidism
  - Growth hormone deficiency
  - Hypopituitarism
  - Chronic malnutrition

Failure to Thrive



- List three causes of this type of growth pattern

- Type III failure to thrive
  - Congenital infections
  - Chromosomal abnormalities
  - Prenatal exposure to toxins

Type I Failure to Thrive

- Inadequate caloric intake
  - Inappropriate feeding regimen/schedule
  - Formula prepared incorrectly
  - Decreased appetite or feeding dysfunction/refusal
- Excessive loss of calories
  - GER or vomiting
  - Diarrhea/malabsorption
- Increased metabolic demands
  - Hyperthyroidism, diencephalic syndrome

Nutritional Assessment

- History
  - Intake, losses, past growth, parental heights
- Anthropometrics
  - Height/length, weight, head circumference, BMI
  - Skinfold thickness, mid-upper arm circumference
- Physical Exam
  - Decreased fat stores, muscle wasting, edema
- Lab
  - Visceral proteins, CBC, K, mag, phos, zinc

Nutritional Status

- Wasting
  - Weight:length ratio or BMI <3rd percentile
  - Often seen in type I failure to thrive
  - Indicative of acute malnutrition
  - Typically responds to nutritional support
- Stunting
  - Height <3rd percentile for age
  - Often have a normal weight:length ratio or BMI
  - Chronic malnutrition may progress to stunting

Nutritional Rehabilitation

- How do you decide between enteral and parenteral support?
  - Use parenteral route when, and only when, enteral support is not possible or not adequate to meet the nutritional needs of the patient
- What type of enteral support should you use?
  - Use most physiologic method tolerated by patient
  - Most physiologic to least physiologic:
    - Increasing caloric density→ oral supplements→ gastric bolus→ gastric continuous→ jejunal continuous

Complications of Nutritional Support

- What are risk factors for developing the refeeding syndrome?
  - Moderate to severe malnutrition
- What are the laboratory findings?
  - Hypokalemia, hypomagnesemia, and hypophosphatemia
- How do you avoid this complication?
  - Advance feedings and/or TPN slowly
  - Carefully monitor and supplement K, Mag, Phos

Complications of Nutritional Support

- Discuss complications that may be seen with enteral support
  - Tube malposition
  - Irritation or infection of tube site
- Discuss complications that may be seen with parenteral support
  - Infection
  - Metabolic derangements
  - Mechanical complications

THE END

Questions?