

# **SOP**

## **Growth Charts Interpretation using Sri Lankan Child Health Development Record (CHDR)**

Department of Public Health  
Faculty of Medicine  
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# Standard Operating Procedure (SOP) On Growth Charts Interpretation using Sri Lankan Child Health Development Record (CHDR)

## 1) Title

Growth Charts Interpretation using Sri Lankan Child Health Development Record (CHDR)

## 2) Issued By

Department of Public Health, Faculty of Medicine, Uva Wellassa University of Sri Lanka

## 3) Purpose

To establish a standardized procedure for accurate interpretation of growth charts using the Sri Lankan Child Health Development Record (CHDR), ensuring early identification of growth abnormalities and appropriate intervention.

## 4) Scope

This SOP applies to medical students during their clinical appointments in Paediatrics, Public Health, and Child Welfare Clinics.

## 5) Responsibilities

### 5.1) Medical Students

- Accurately interpret growth charts
- Identify normal and abnormal growth patterns
- Present findings clearly to supervisors
- Maintain professionalism and patient confidentiality

### 5.2) Supervising Medical Officers / Tutors

- Guide and supervise students
- Validate interpretations
- Provide feedback and teaching

## 6) Ethical and Professional Considerations

- Maintain confidentiality of child health records
- Request caregiver consent before measurements
- Ensure respectful and child-friendly interaction
- Provide clear explanations to caregivers

## 7) Preparation

### 7.1) Equipment Required

#### (1) Weighing Scales

- **Beam balance scale** - Used mainly for infants



- **Spring balance scale** - Commonly used in field settings



#### (2) Length Measuring Equipment

- **Infantometer / Length board** - Used for children below 2 years



#### (3) Height Measuring Equipment

- **Stadiometer / Wall-mounted measuring scale** – Used for children 2 years and above



#### (4) Growth Charts and Records in **Child Health Development Record (CHDR) book**



## 8) Procedure for Growth Chart Interpretation

### 8.1) General Principles

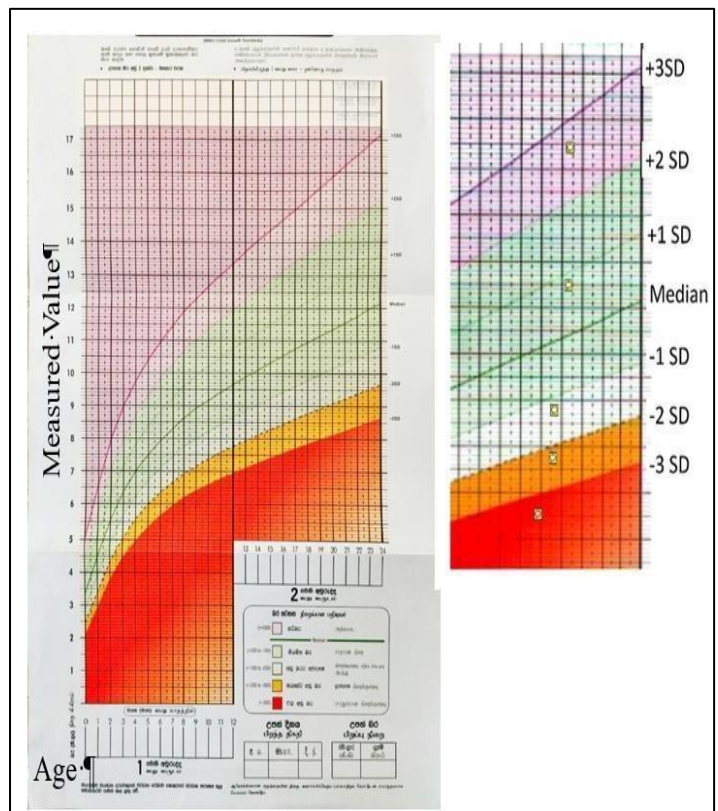
- (1) Growth trend is more important than a single measurement
- (2) Interpretation should use **Z-score (SD) lines and CHDR colour zones** (3)  
Always correlate with clinical history

### 8.2) Types of Growth Charts in CHDR

- (1) Weight-for - age (Birth to 5 years)
- (2) Length - for -age (Birth to 2 years)
- (3) Height-for-age (2 to 5 years)
- (4) BMI-for-age (2 to 20 years)
- (5) Head circumference-for-age (Birth to 3 years)
- (6) Weight-for-height (Birth to 5 years)

### 8.3) Plotting Measurements

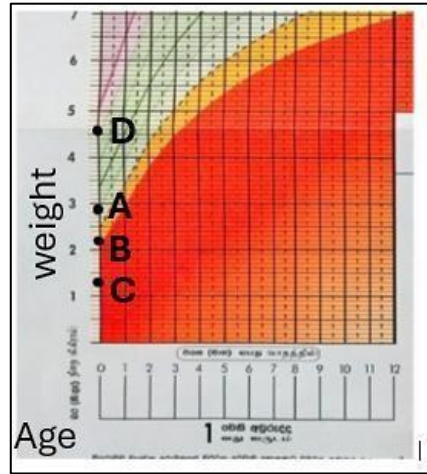
- (1) Request the Child Health Development Record (CHDR) from mother
- (2) Verify child's age and sex
- (3) Based on the maturity, ensure correct growth chart is used (Standard Growth Chart or Specialized Growth chart)  
(For babies born prematurely, standard growth charts should not be used initially; instead, specialized growth charts designed for preterm infants should be used.)
- (4) Identify the relevant growth chart (weight-for-age, height-for-age, etc.) Locate child's age on the X-axis
- (5) Locate measurement value on the Yaxis
- (6) Mark the point clearly
- (7) Join consecutive points to observe trend
- (8) Reasons for special care' such as low birth weight, twins, failure to thrive, feeding problems, death of parents and parental separation are written in the chart.



## 9) Stepwise Interpretation for weight for age charts

### Step 1: Assess Birth Weight

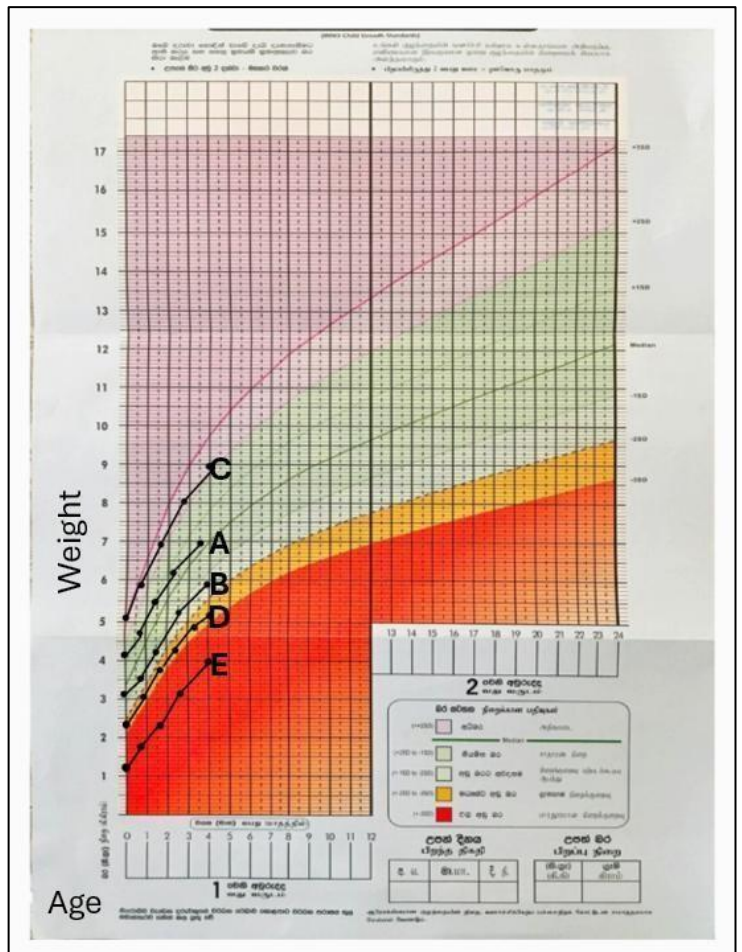
- A - Normal:  $\geq 2500$  g
- B - Low birth weight:  $< 2500$  g
- C - Very low birth weight:  $< 1500$  g
- D - Overweight  $>4000$ g



### Step 2: Assess Current Position on Growth Chart

Identify the nutritional status based on zones:

- A - Green  $\rightarrow$  Normal
- B - Light green  $\rightarrow$  At risk of underweight
- C - Purple  $\rightarrow$  Overweight
- D - Orange  $\rightarrow$  Underweight
- E - Red  $\rightarrow$  Severely underweight



### 3. Assess Direction (Trend) of Growth Curve

Rising steeply

→ Growth acceleration / Catch up growth

Parallel to reference lines

→ Normal growth

Weight gain seen but inadequate for children

→ Inadequate weight gain

remaining same

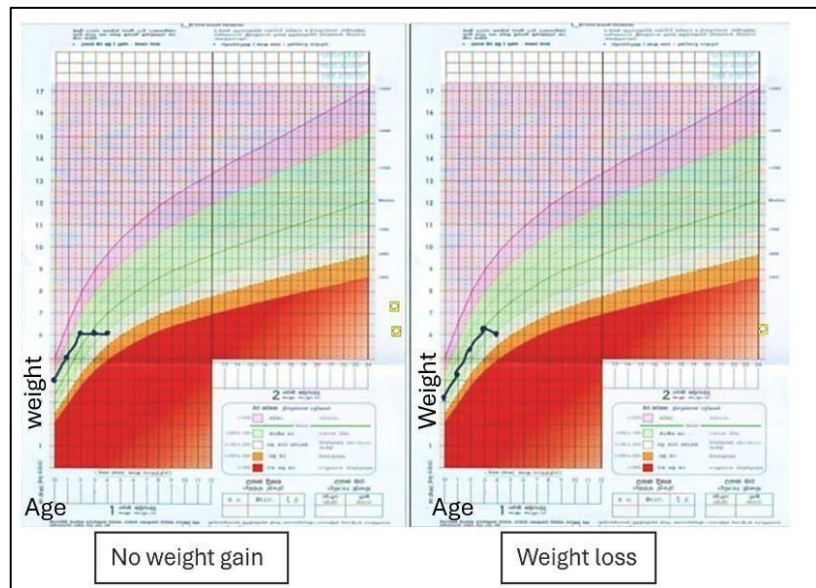
→ No weight gain

Dipping down

→ Weight loss

### Step 4.- Identify Growth Faltering

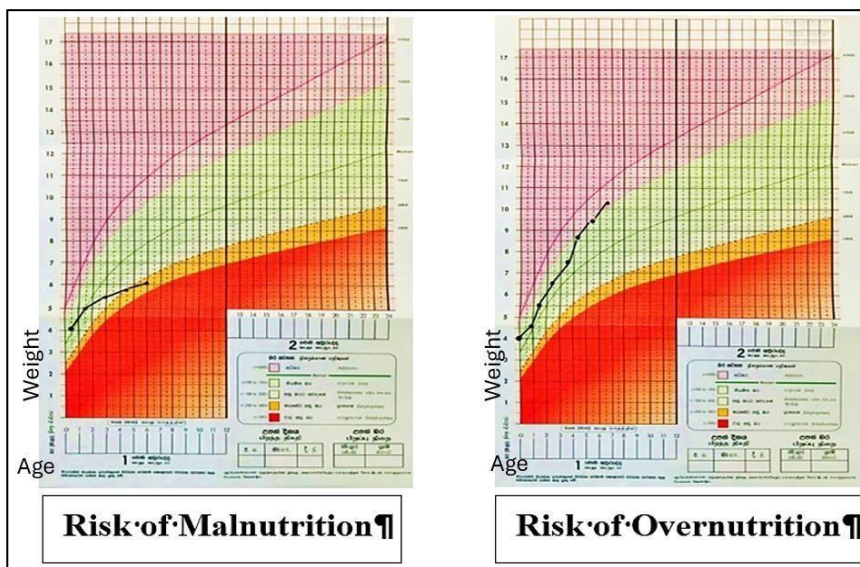
Growth faltering is **Inadequate weight** or **no weigh gain during two consecutive weighing** or **loss of weight** even during one weighing



### Step 5: Assess Crossing of Growth Lines

Crossing downward → Risk of malnutrition

Crossing upward excessively → Possible over nutrition

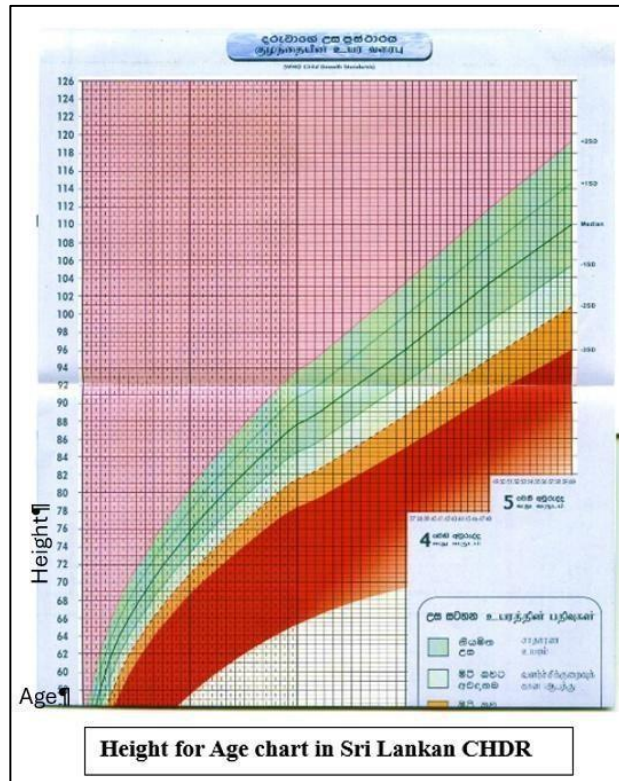




## 10) Stepwise Interpretation for height for age charts

### Step 1 - Confirm Age and select the relevant Chart

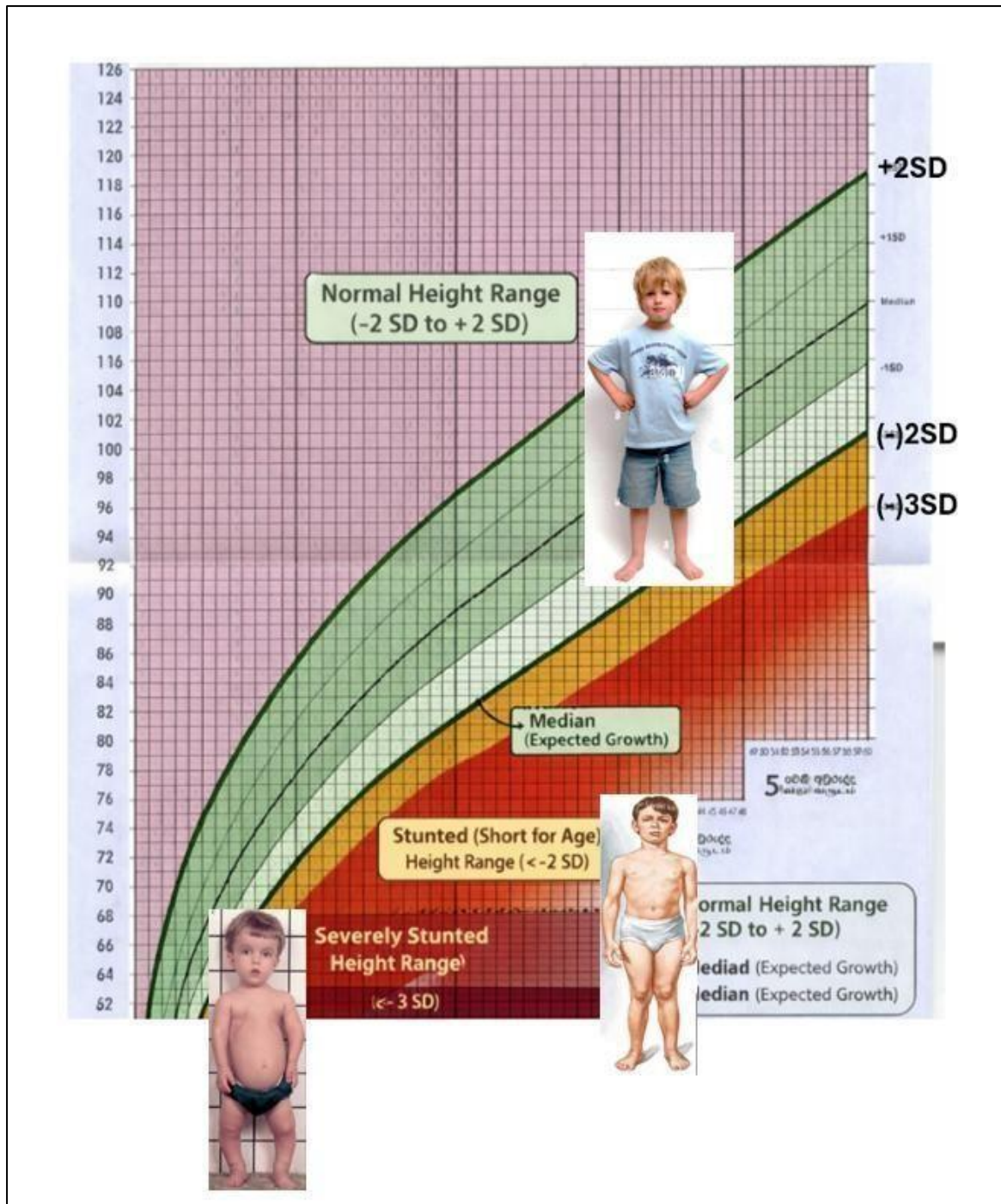
- (1) Check **child's exact age** (important for accuracy)
- (2) Ensure correct **sex-specific chart** is used
- (3) Verify that **height/length is plotted correctly**



### Step 2: Assess Current Position (Z-score / SD lines)

Locate the plotted point relative to SD lines

- (1) **Above (-)2 SD** → Normal height
- (2) **Between (-)2 SD to (-)3 SD** → Stunted (moderate)
- (3) **Below (-)3 SD** → Severely stunted



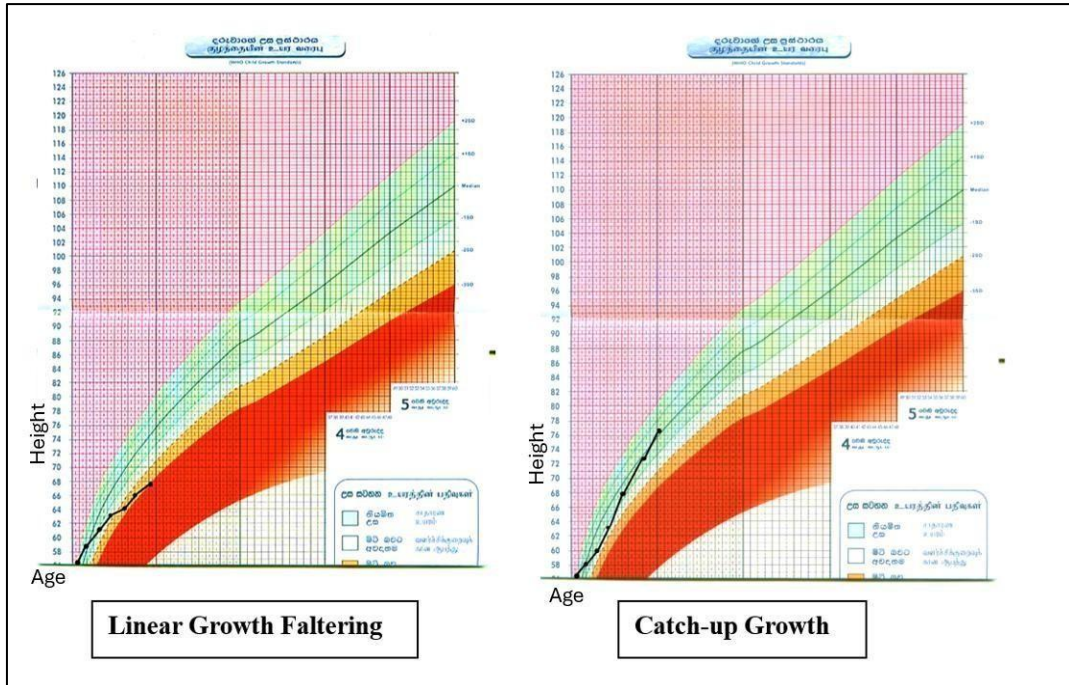
### Step 3 Assess Trend (Growth Pattern Over Time) Look

at multiple points, not a single reading:

- (1) Curve **parallel to reference lines** → Normal linear growth
- (2) Curve **rising slowly** → Inadequate height gain
- (3) **Flat line** → Growth faltering (no linear growth)
- (4) **Downward trend** → Serious concern

#### Step 4: Look for Crossing of SD Lines

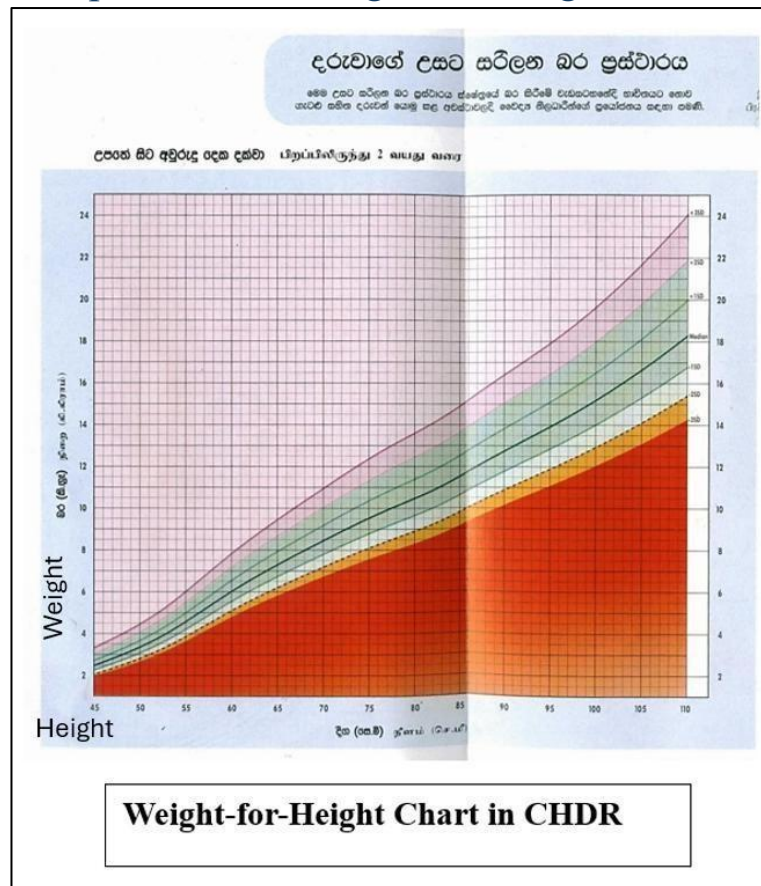
- (1) Crossing downwards → **Linear Growth Faltering** (risk of stunting)
- (2) Crossing upwards → Possible **catch-up growth**



#### Step 5: Correlate with Clinical History

- Assess contributing factors:
- Poor nutrition (long-term)
- Recurrent infections
- Chronic illnesses
- Socioeconomic factors
- Feeding practices

## 11) Stepwise Interpretation of Weight-for-Height charts



### Step 1: Confirm Measurement Accuracy

- (1) Ensure correct height/length and weight are measured
- (2) Use appropriate method:
  - <2 years → Length (lying)
  - ≥2 years → Height (standing)
- (3) Confirm correct chart (sex-specific)

### Step 2: Locate the Plot

- (1) Plot weight against height on the chart
- (2) Identify where the point lies relative to SD (Z-score) lines

### Step 3: Assess Nutritional Status (Based on SD Lines)

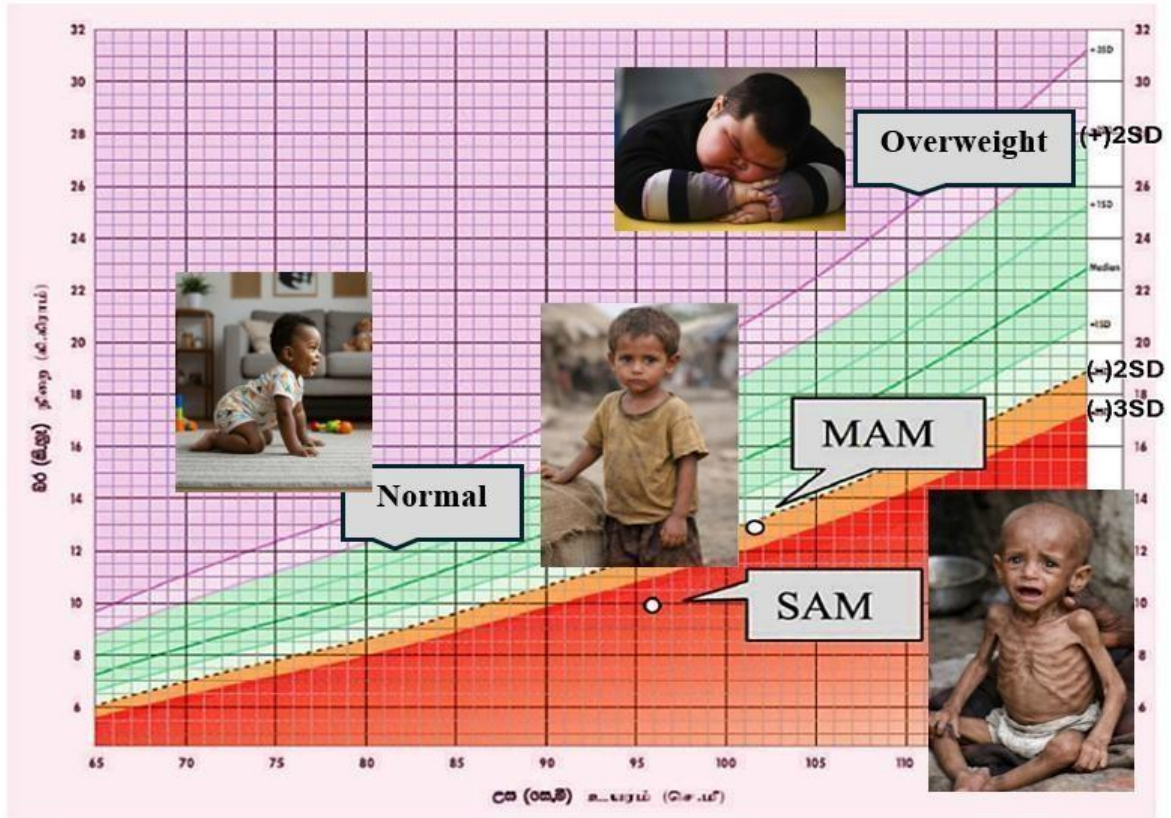
Above (-)2 SD → **Normal**

Between (-)2 SD and (-)3 SD → **Wasted (Moderate Acute Malnutrition – MAM)**

Below (-)3 SD → **Severely wasted (Severe Acute Malnutrition - SAM)**

Above (+)2 SD → **Risk of Overnutrition/ Overweight**

Above (+)3 SD → **Obese**



WHO Child Growth Stan

- MAM மெட்டு சில அளவுகளை மெலிந்த -2 SD to -3 SD
- SAM டு சில அளவுகளை மிகவும் மெலிந்த <- 3 SD

## 12) Documentation

- 1) Record all measurements clearly in CHDR
- 2) Ensure accurate plotting
- 3) Document interpretation and action taken

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