



Nutrition Screening and Assessment Tools: **Growth Charts** **+ SGNA**

Presented by Bailey Morrison
October 2022



01

Screening

WHO growth charts
CDC growth charts



Growth in infants and children

- Relates to the adequacy of:
 - **Nutrition**
 - **Health Status**
 - **Economic situation**
 - **Environment**
- Interpreted over time
 - Some identifiable **red flags**:
 - *Lack of gaining weight, length, head circumference*
 - *Plateau of gaining weight, length, head circumference*
 - *Significant drop across percentiles*
 - *Dropping without regain in few weeks*
 - *Increase of BMI percentile in less than 5 years of age*
 - *Increase crossing major percentile lines of BMI*



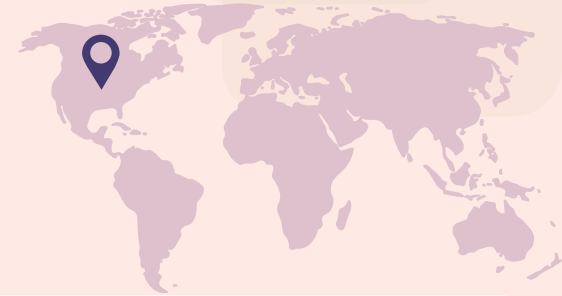
World Health Organization (WHO) Growth Charts

- the growth of healthy children **aged zero to 59 months in optimal conditions**
- based on **longitudinal** data, then **cross-sectional** data for ages 24 to 59 months.
- Breastfed infants only
- International sample: prescriptive and growth standard
 - Davis, California, USA
 - Pelotas, Brazil
 - Muscat, Oman
 - Accra, Ghana
 - Oslo, Norway
 - South Delhi, India
- Ideal for **≤2 years** of age



The WHO Child Growth Standards depict **normal growth under optimal environmental conditions** and can be used to assess children aged **birth to 60 months everywhere, regardless of ethnicity, socio-economic status and type of feeding.**

Center of Disease Control (CDC) Growth Charts



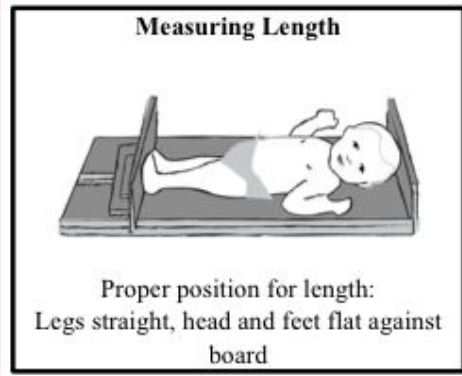
- Based on **cross-sectional** data
- Breastfed and formula fed infants
- USA sample: descriptive and growth reference
- Ideal for children **>2 years** of age

Anthropometric Index	Percentile Cut Off Value	Nutritional Status Indicator
BMI-for-age	≥ 95th Percentile	Obese
Weight-for-length/stature	> 95th Percentile	
BMI-for-age	≥ 85th and < 95th Percentile	Overweight
BMI-for-age Weight-for-length	< 5th Percentile	Underweight
Stature/length-for-age	< 5th Percentile	Short Stature
Head Circumference -for-age	< 5th Percentile > 95th Percentile	Developmental Problems

Gender and age	Charts
Boys, birth to 36 mos.	Weight-for-length
Boys, birth to 36 mos.	Weight-for-age
Boys, birth to 36 mos.	Length-for-age
Boys, birth to 36 mos.	Head circumference-for-age
Girls, birth to 36 mos.	Weight-for-length
Girls, birth to 36 mos.	Weight-for-age
Girls, birth to 36 mos.	Length-for-age
Girls, birth to 36 mos.	Head circumference-for-age
Boys, 2 to 20 yrs.	BMI-for-age
Boys, 2 to 20 yrs.	Weight-for-age
Boys, 2 to 20 yrs.	Stature-for-age
Girls, 2 to 20 yrs.	BMI-for-age
Girls, 2 to 20 yrs.	Weight-for-age
Girls, 2 to 20 yrs.	Stature-for-age
Optional Charts	
Boys 2 to 5 yrs.	Weight-for-stature
Girls 2 to 5 yrs.	Weight-for-stature

Weight-for-length

Length vs. Height



“Length” <85 cm

- ~≤2 years of age
- WHO growth charts
- Recumbent length (*laying down*)
- *No clothing or diaper* during weight assessment

“Height” or “Stature” ≥85 cm

- ~>2 years of age
- CDC growth charts
- Height *standing* without shoes
- Light clothing during weight assessment

Example WHO Table
≤2 years of age

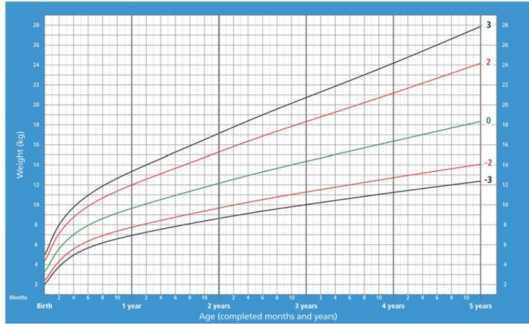
Table A5.2.1 Weight-for-length from birth to 2 years: Boys

Length (cm)	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
45.0	1.9	2.0	2.2	2.4	2.7	3.0	3.3
45.5	1.9	2.1	2.3	2.5	2.8	3.1	3.4
46.0	2.0	2.2	2.4	2.6	2.9	3.1	3.5
46.5	2.1	2.3	2.5	2.7	3.0	3.2	3.6
47.0	2.1	2.3	2.5	2.8	3.0	3.3	3.7
47.5	2.2	2.4	2.6	2.9	3.1	3.4	3.8
48.0	2.3	2.5	2.7	2.9	3.2	3.6	3.9
48.5	2.3	2.6	2.8	3.0	3.3	3.7	4.0

Weight-for-age

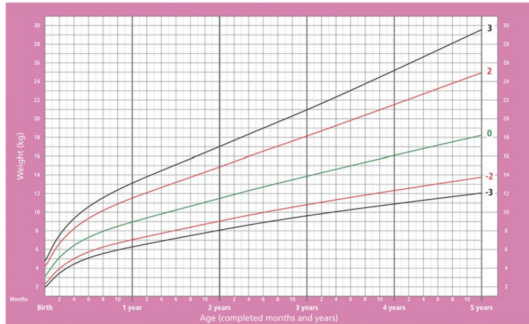
Weight-for-age BOYS

Birth to 5 years (z-scores)



Weight-for-age GIRLS

Birth to 5 years (z-scores)



WHO charts

- Ideal ≤ 2 years of age
- No clothing or diaper during weight assessment

CDC example

>2 years of age

- Light clothing

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

NAME _____ RECORD # _____



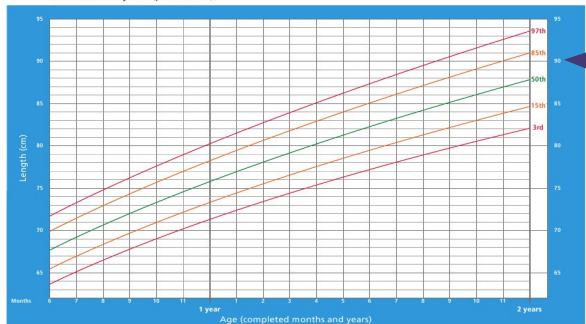
STATURE

WEIGHT

Length-for-age

Length-for-age BOYS

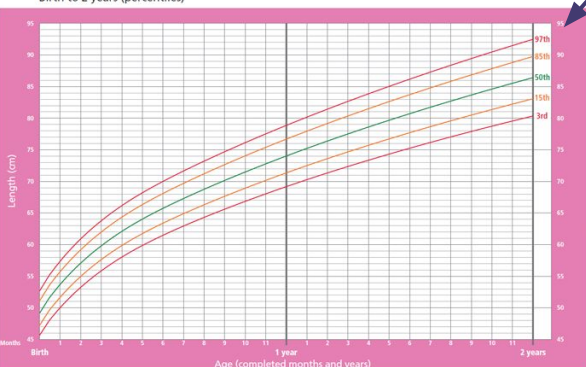
6 months to 2 years (percentiles)



WHO Child Growth Standards

Length-for-age GIRLS

Birth to 2 years (percentiles)



WHO charts

- Ideal ≤ 2 years of age
- Recumbent length (*laying down*)

CDC example

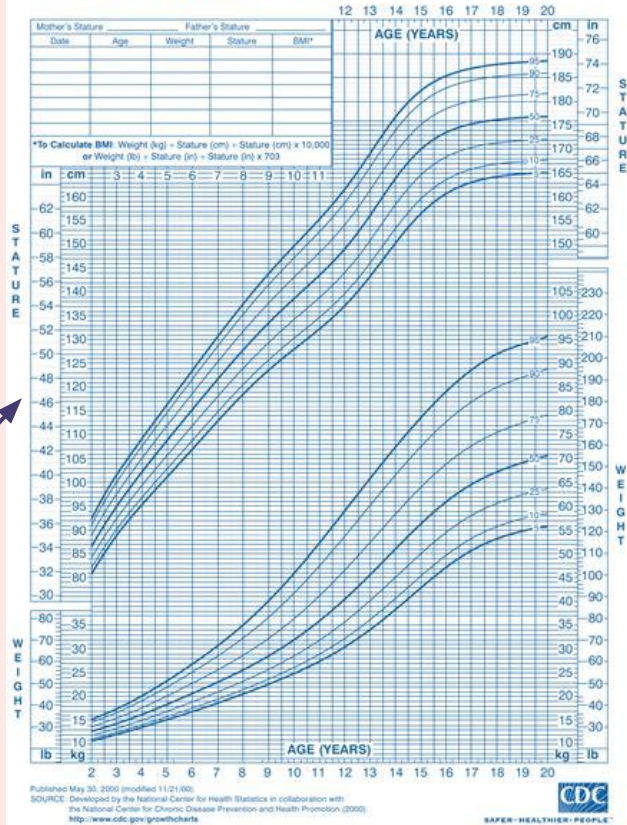
- > 2 years of age
- Height *standing* without shoes
- "Stature-for-age"

2 to 20 years: Boys

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

NAME _____

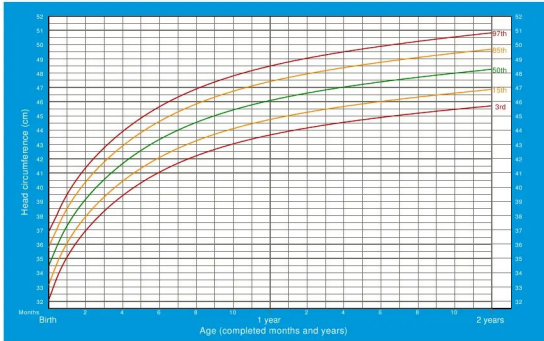
RECORD # _____



Head circumference-for-age

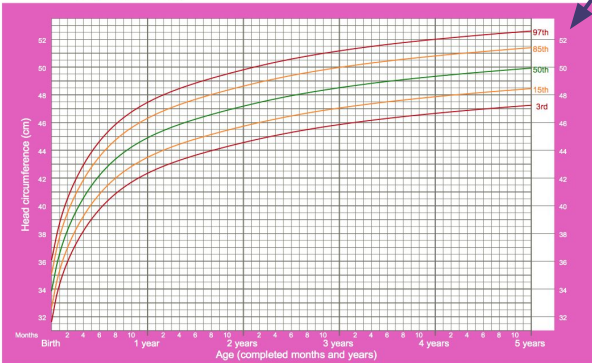
Head circumference-for-age BOYS

Birth to 2 years (percentiles)



Head circumference-for-age GIRLS

Birth to 5 years (percentiles)

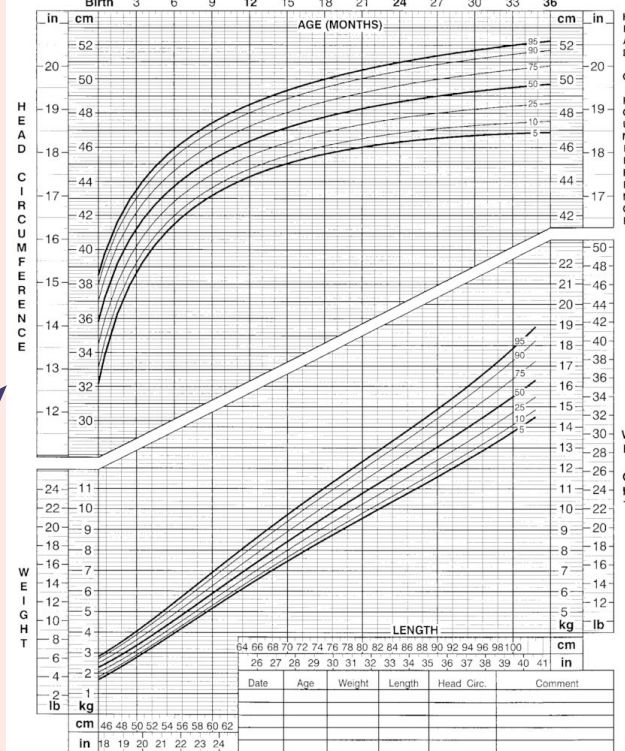


WHO charts
≤ 2 years of age

CDC example
> 2 years of age

Birth to 36 months: Boys Head circumference-for-age and Weight-for-length percentiles

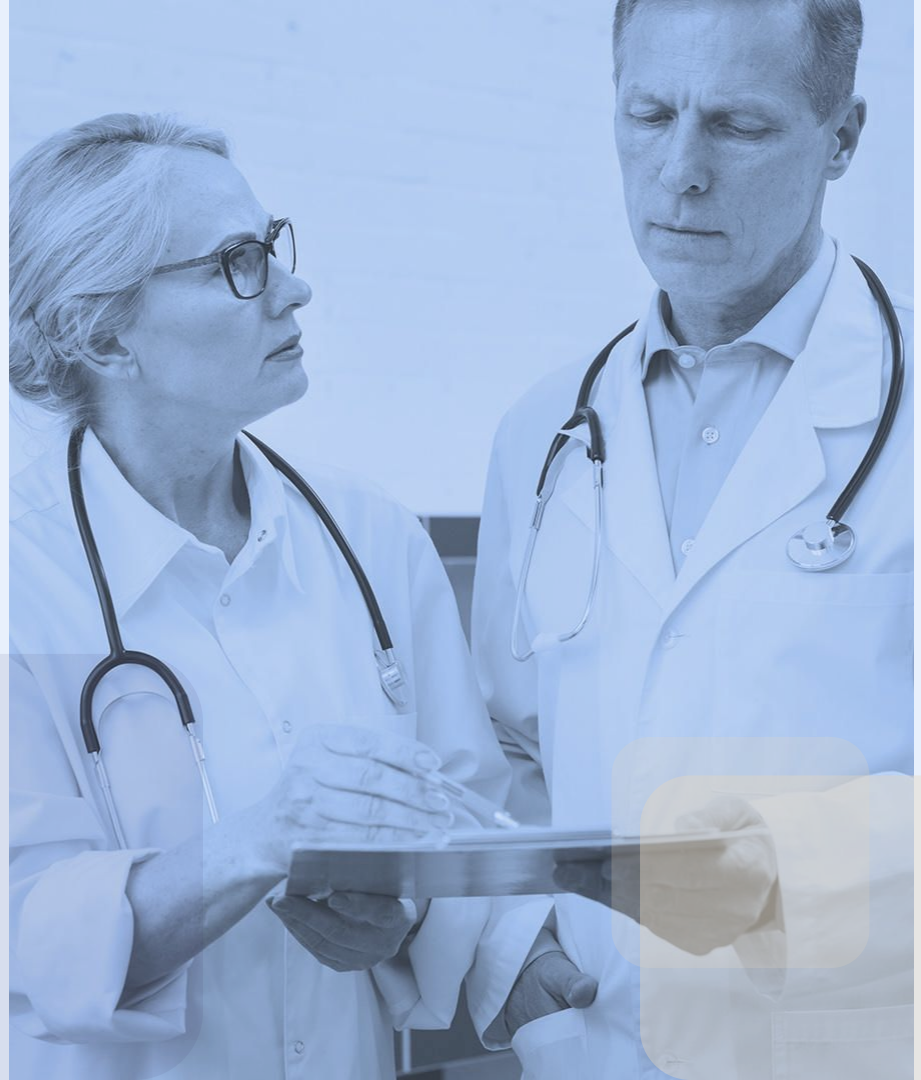
NAME _____ RECORD # _____



02

Assessment

SGA → Pediatric SGNA



Pediatric Subjective Global Nutritional Assessment (SGNA)

SGA is a valid and reliable tool which assesses nutritional status based on the features of

- **Medical history**
 - weight change
 - dietary intake change
 - gastrointestinal symptoms that have persisted for > two weeks
 - changes in functional capacity
- **Physical examination**
 - loss of subcutaneous fat
 - muscle wasting
 - ankle/sacral oedema and ascites
- **Ranking results**
 - well nourished SGA A
 - moderately or suspected of being malnourished SGA B
 - severely malnourished SGA C



Adapted to pediatric population

02.1

Nutrition Focused Medical History



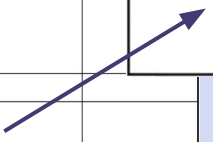
PEDIATRIC SGNA RATING FORM

Consider severity and duration of changes, as well as recent progression when rating each item.

NUTRITION-FOCUSED MEDICAL HISTORY	SGNA SCORE		
	Normal	Moderate	Severe
Appropriateness of Current Height for Age (stunting) a) Height percentile: _____ <input type="checkbox"/> \geq 3 rd centile <input type="checkbox"/> just below 3 rd centile <input type="checkbox"/> far below 3 rd centile			
b) Appropriate considering mid-parental height ^a ?: <input type="checkbox"/> yes <input type="checkbox"/> no			
c) Serial growth ^b : <input type="checkbox"/> following centiles <input type="checkbox"/> moving upwards on centiles <input type="checkbox"/> moving downwards on centiles (gradually or quickly)			
Appropriateness of Current Weight for Height (wasting) Ideal Body Weight = _____ kg Percent Ideal Body Weight: _____ % <input type="checkbox"/> >90% <input type="checkbox"/> 75-90% <input type="checkbox"/> <75%			
Unintentional Changes in Body Weight a) Serial weight ^b : <input type="checkbox"/> following centiles <input type="checkbox"/> crossed \geq 1 centile upwards <input type="checkbox"/> crossed \geq 1 centile downwards			
b) Weight loss: <input type="checkbox"/> < 5% usual body weight <input type="checkbox"/> 5-10% usual body weight <input type="checkbox"/> >10% usual body weight			
c) Change in past 2 weeks: <input type="checkbox"/> no change <input type="checkbox"/> increased <input type="checkbox"/> decreased			
Adequacy of Dietary Intake a) Intake is: <input type="checkbox"/> adequate <input type="checkbox"/> inadequate - hypocaloric <input type="checkbox"/> inadequate - starvation (ie, taking little of anything)			
b) Current intake versus usual: <input type="checkbox"/> no change <input type="checkbox"/> increased <input type="checkbox"/> decreased			
c) Duration of change: <input type="checkbox"/> < 2 weeks <input type="checkbox"/> \geq 2 weeks			
Gastrointestinal Symptoms a) <input type="checkbox"/> no symptoms <input type="checkbox"/> one or more symptoms; not daily <input type="checkbox"/> some or all symptoms; daily			
b) Duration of symptoms: <input type="checkbox"/> < 2 weeks <input type="checkbox"/> \geq 2 weeks			
Functional Capacity (nutritionally related) a) <input type="checkbox"/> no impairment, energetic, able to perform age-appropriate activity <input type="checkbox"/> restricted in physically strenuous activity, but able to perform play and/or school activities in a light or sedentary nature; less energy; tired more often <input type="checkbox"/> little or no play or activities, confined to bed or chair > 50% of waking time; no energy; sleeps often			
b) Function in past 2 weeks: <input type="checkbox"/> no change <input type="checkbox"/> increased <input type="checkbox"/> decreased			
Metabolic Stress of Disease <input type="checkbox"/> no stress <input type="checkbox"/> moderate stress <input type="checkbox"/> severe stress			

Nutrition Focused Medical History

Moderate metabolic stress	Severe metabolic stress
<input type="checkbox"/> Routine surgery (eg, small resection of bowel) <input type="checkbox"/> Laparoscopic surgery <input type="checkbox"/> Exploratory surgery <input type="checkbox"/> Fracture <input type="checkbox"/> Infection (eg, bronchiolitis, gastroenteritis) <input type="checkbox"/> Pressure sore/decubitus ulcer	<input type="checkbox"/> Major organ surgery (eg, stomach, liver, pancreas, lung; open chest; total cholecystectomy; pouch procedures) <input type="checkbox"/> Major bowel resection (\leq 50 cm remaining) <input type="checkbox"/> Trauma, multiple injuries/fractures/burns <input type="checkbox"/> Multiorgan failure <input type="checkbox"/> Severe pancreatitis <input type="checkbox"/> Severe sepsis <input type="checkbox"/> Severe inflammation <input type="checkbox"/> Multiple deep pressure sores/ulcers <input type="checkbox"/> Chronic illness with acute deterioration <input type="checkbox"/> Current treatment for malignancy <input type="checkbox"/> Acquired immunodeficiency syndrome with a secondary infection <input type="checkbox"/> Hyperthyroidism



^aMid-parental height: Girls: subtract 13 cm from the father's height and average with the mother's height. Boys: add 13 cm to the mother's height and average with the father's height. Thirteen cm is the average difference in height of women and men. For both girls and boys, 8.5 cm on either side of this calculated value (target height) represents the 3rd to 97th percentiles for anticipated adult height. (29)
^b30% of healthy term infants cross one major percentile and 23% cross two major percentiles during the first 2 years of life, typically towards the 50th percentile rather than away from it. This is normal seeking of the growth channel.

Nutrition Focused Medical History



01

Height-to-Age

02

Weight-to-Length

03

Change in Body Weight

04

Adequacy of Dietary Intake

05

Persistent GI Symptoms

06

Functional Impairment

07

Metabolic Stress

02.2

Nutrition Focused Physical Exam



Nutrition Focused Physical Exam



Subcutaneous fat	Special tips	Severe malnutrition	Moderate malnutrition	Well nourished
Facial cheeks (buccal pads)	Gently palpate pads over cheek	Hollow, narrow face	Flat	Full, round, filled out
Biceps and triceps	Arm bent; be careful not to include muscle; pinch fat stores and roll between fingers	Very little space between fingers, or fingers touch	Some space between fingers	Ample or thick fold of fat tissue between fingers
Ribs - Lower back - Mid-axillary line	With patient pressing hand against a solid object	Depressions between the ribs very apparent	Ribs can be apparent. Depressions less pronounced.	Chest is full, round, ribs do not show
Buttocks	Infant upright or child standing	Wasted, flat or "baggy". Skin may appear wrinkled.	Slight curve but not round	Full, round

After examining all of these subcutaneous fat areas, subjectively rate the degree of fat loss. Is the amount of fat loss severe in each area? If yes, then the patient should be placed in the severe category. If there is no subcutaneous fat loss, the patient should be classified as normal. If the patient shows signs in some areas, but not others, the inconsistency would place the patient in the moderate category.

Muscle wasting				
Clavicle	Look along line of the clavicle. The smaller the muscle mass the more prominent the bone.	Protruding/prominent bone	Some protrusion	May be visible but not prominent
Shoulder (deltoid muscles)	Position arms at side and look for prominent bones, shape	Shoulder-to-arm joint looks square. Bones prominent. Acromion protrusion quite prominent	Shoulders not square but acromion process may protrude slightly	Rounded, curved at junction between neck and shoulder, and at shoulder joint. Able to grasp muscle tissue at shoulder joint
Scapula - As the muscle groups around the scapula waste, this bone becomes more apparent	Look for prominent bones. Have patient push hands forward against a solid object	Prominent, visible bone. Depressions above the scapula, between the scapula and the shoulder joint, and between the scapula and the spine.	Degree of wasting variable, in both location and depth. Mild depressions or bone may show slightly in some but not all areas	Scapula bone is not prominent. No depressions around the bone
Thigh (quadriceps muscle) (Note: lower body is less sensitive to change)	Have patient sit; prop leg up on low furniture. Grasp quads to differentiate amount of muscle tissue from amount of fat tissue	Quads can be significantly reduced (squeezed). Depression on inner thigh, obviously thin	Slight depressions along inner thigh, thin	Not able to reduce. Well rounded, no depressions
Knee	Knee propped as above	Knee bone is square and prominent, no muscle mass	Knee bone is noticeable, little muscle mass around it	Muscle protrudes, bone not prominent
Calf (gastrocnemius muscle)	Grasp the calf muscle to determine amount of tissue	Definite tissue reduction. Thin, flat, no muscle definition	Some shape and firmness to tissue	'Bulb' shape, firm and well developed

After examining all of these muscle groups, subjectively rate the degree of wasting. Is the amount of muscle loss severe in all or most areas? If yes, the patient should be placed in the severe category. If there is no muscle tissue loss, the patient should be classified as normal. If the patient shows signs in some areas but not others, the inconsistency would place the patient in the moderate category.

Edema				
Try to rule out causes other than malnutrition (renal, liver, heart) - Ankle (mobile patient), sacrum (activity restricted patient)	Press on middle to latter third of distal anterior surface of foot (or over sacrum) for 5 seconds to move fluid out of subcutaneous tissue. Observe for pitting	Rounded contour with a deep depression or pit that persists	Fairly normal to moderately swollen contour with a moderately deep pit that persists	Normal contour with a barely perceptible pit

Nutrition Focused Physical Exam

01

Loss of Subcutaneous Fat

02

Muscle Wasting

03

Edema

PHYSICAL EXAM	SGNA SCORE		
	Normal	Moderate	Severe
Loss of subcutaneous fat <input type="checkbox"/> no loss in most or all areas <input type="checkbox"/> loss in some but not all areas <input type="checkbox"/> severe loss in most or all areas			
Muscle Wasting <input type="checkbox"/> no wasting in most or all areas <input type="checkbox"/> wasting in some but not all areas <input type="checkbox"/> severe wasting in most or all areas			
Edema (nutrition-related) <input type="checkbox"/> no edema <input type="checkbox"/> moderate <input type="checkbox"/> severe			

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Edema (nutrition-related) <input type="checkbox"/> no edema <input type="checkbox"/> moderate <input type="checkbox"/> severe			

GUIDELINES FOR AGGREGATING ITEMS INTO GLOBAL SCORE

When assigning an overall global score, consider all items in the context of each other. Give the most consideration to changes in weight gain and growth, intake, and physical signs of loss of fat or muscle mass. Use the other items to support or strengthen these ratings. Take recent changes in context with the patient's usual/chronic status. Was the patient starting off in a normal or nutritionally-compromised state?

Normal/Well nourished

This patient is growing and gaining weight normally, has a grossly adequate intake without gastrointestinal symptoms, shows no or few physical signs of wasting, and exhibits normal functional capacity. Normal ratings in most or all categories, or significant, sustained improvement from a questionable or moderately malnourished state. It is possible to rate a patient as well nourished in spite of some reductions in muscle mass, fat stores, weight and intake. This is based on recent improvement in signs that are mild and inconsistent.

Moderately malnourished

This patient has definite signs of a decrease in weight and/or growth, and intake and may or may not have signs of diminished fat stores, muscle mass and functional capacity. This patient is experiencing a downward trend, but started with normal nutritional status. Moderate ratings in most or all categories, with the potential to progress to a severely malnourished state.

Severely malnourished

This patient has progressive malnutrition with a downward trend in most or all categories. There are significant physical signs of malnutrition—loss of fat stores, muscle wasting, weight loss >10%—as well as decreased intake, excessive gastrointestinal losses and/or acute metabolic stress, and definite loss of functional capacity. Severe ratings in most or all categories with little or no sign of improvement.

	Normal	Moderate	Severe
OVERALL SGNA RANKING			

Case Study

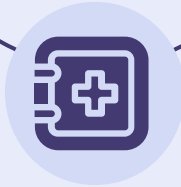
Nutrition Care

PES statement,
diagnosis,
intervention



Growth Charts

WHO vs CDC



Medical History

Food recall, SGNA questions,
medical diagnoses



Physical Exam

SGNA, NFPE



Case Study

Sarah H. (4 year old female) comes in with her mother because her mother has noticed she's not gaining much weight from her past Dr's visit. She is worried about her daughter's weight, since Sarah is already a petite child. Her mother notes that Sarah does not have much of an appetite because she's a picky eater. Sarah H. is 31 lbs and 37.5 inches tall. You plot her growth charts and conduct a SGNA.

Case Study

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$31 \text{ lb} / 2.2 = 14.1 \text{ kg}$
13.8 kg IBW
Pt is 97.9% IBW

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

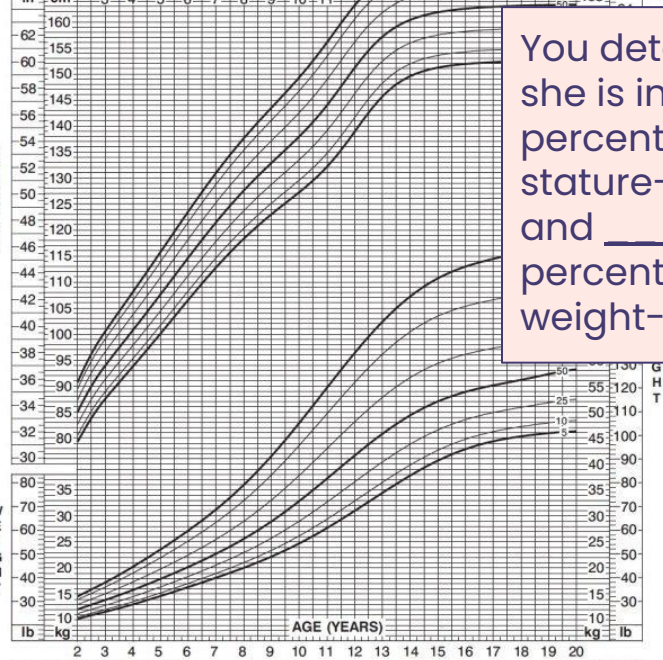
NAME Sarah H.
RECORD # _____

Mother's Stature		Father's Stature		AGE (YEARS)		cm	in
Date	Age	Weight	Stature	BMI*			

4 years old
31 lbs
37.5 in

You determine she is in the ____ percentile for stature-for-age and ____ percentile for weight-for-age

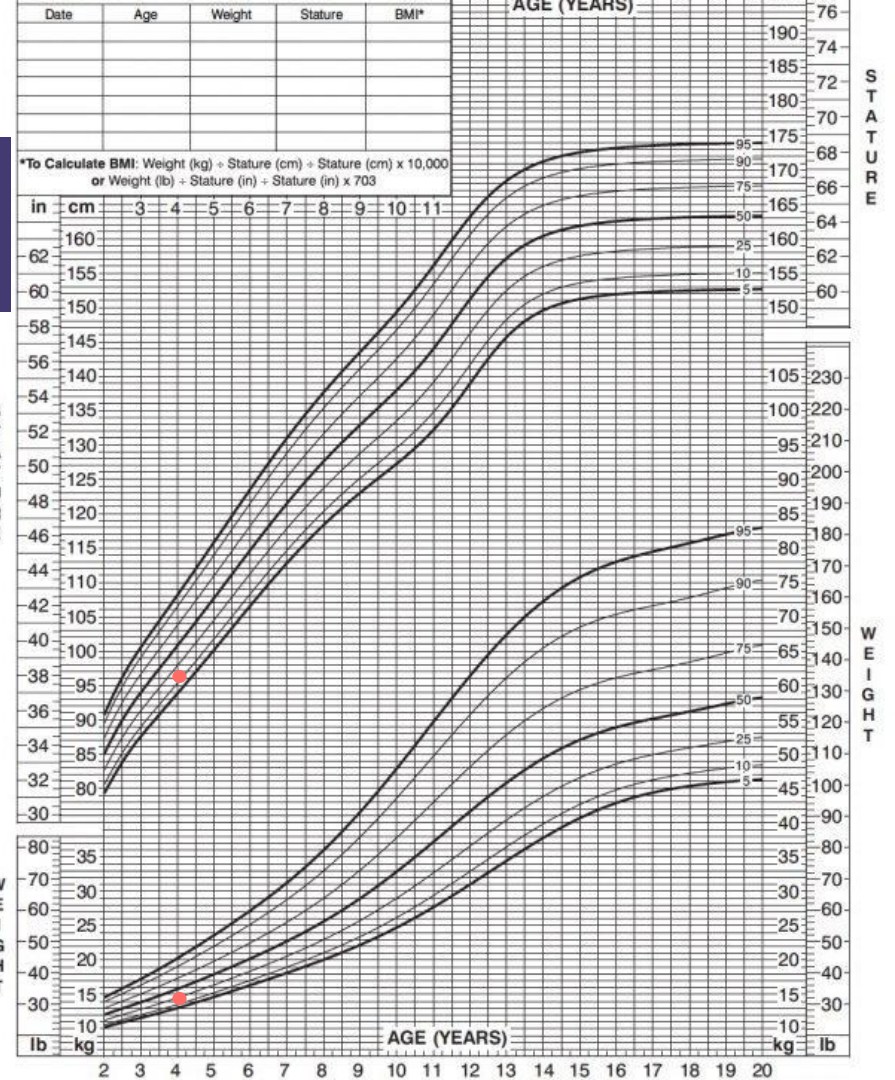
CDC chart for stature-for-age and weight-for-age in girls 2-20 years old



Published May 30, 2000 (modified 11/21/00).
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>



SAFER • HEALTHIER • PEOPLE™



*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703

S T A T U R E

W E I G H T

S T A T U R E

W E I G H T

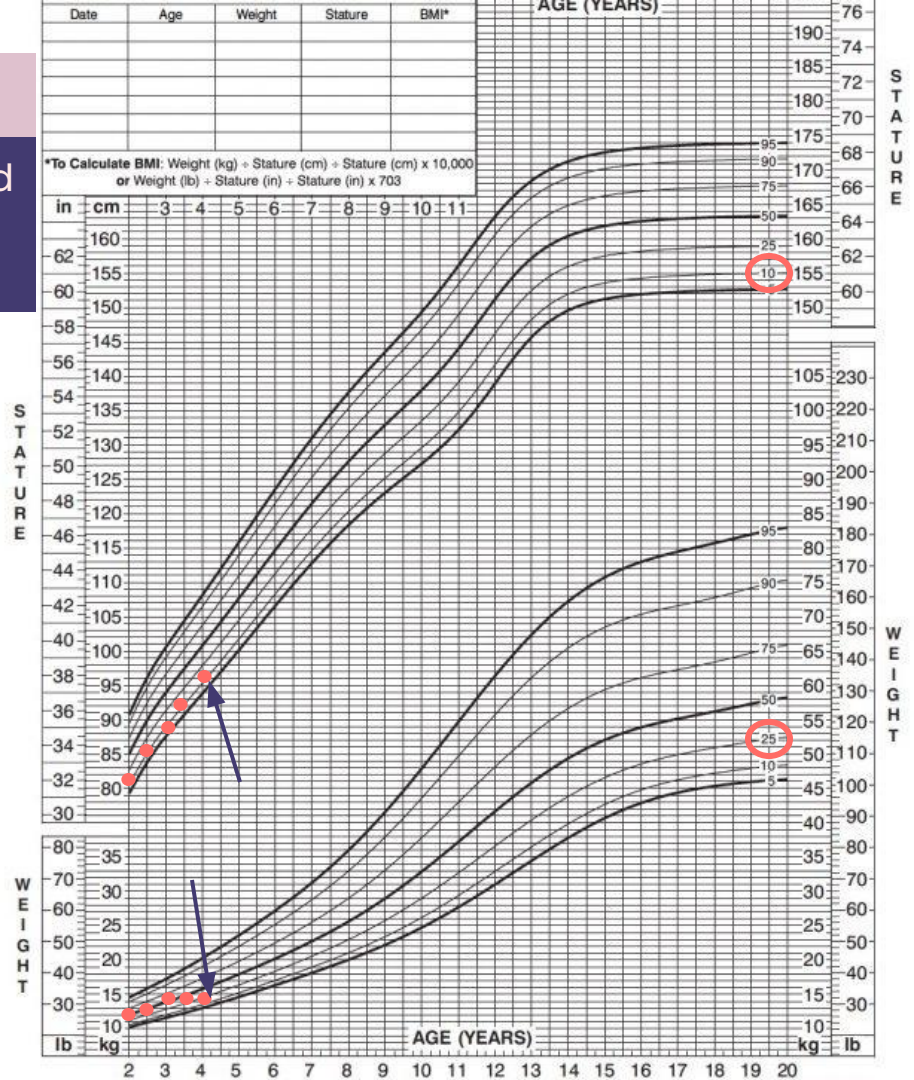
Sarah H.

4 years old
31 lbs
37.5 in

You had determined that she is currently in the 10th percentile for stature-for-age and 25th percentile for weight-for-age

How does that compare to her previous data points? Is there cause for concern? Why?

CDC chart for stature-for-age and weight-for-age in girls 2-20 years old



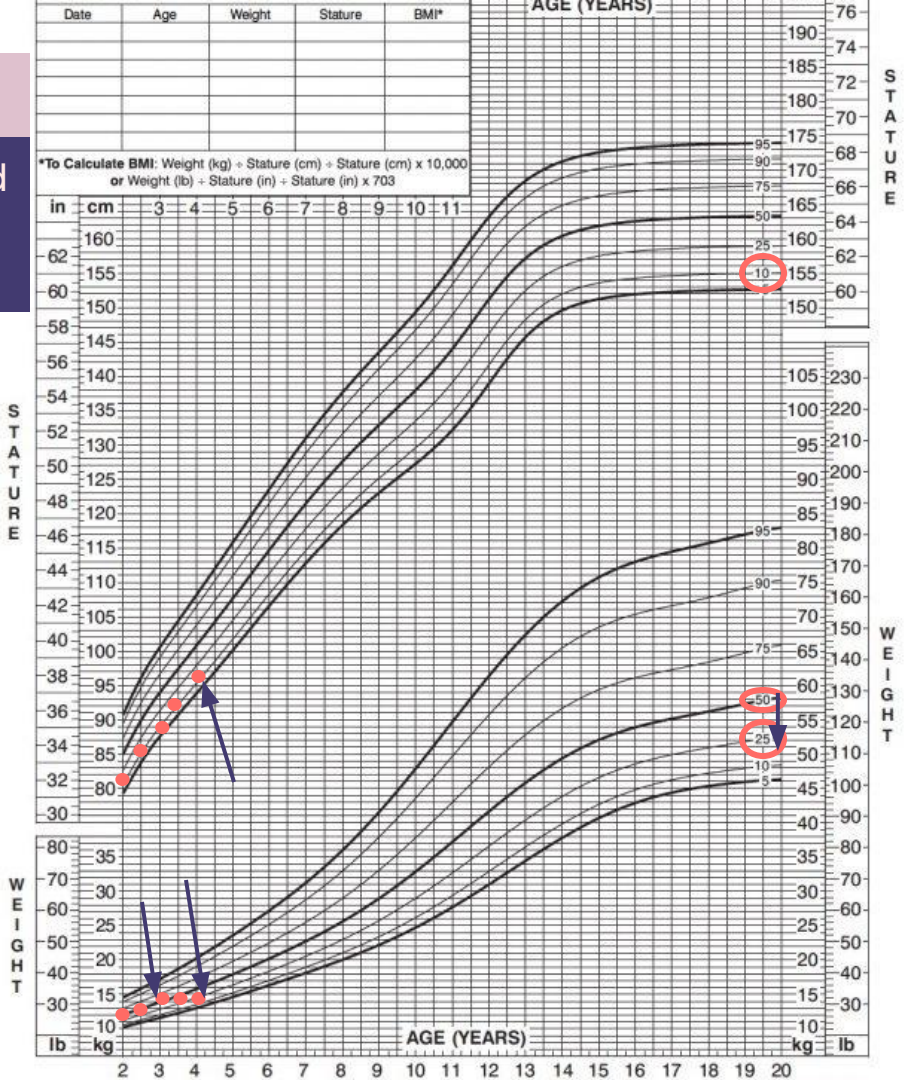
She is staying consistent in the 10th percentile range in stature-for-age

But she is on a downward trend for weight-for-age.

She started in the 50th percentile but dropped to the 25th in the last 6 months to 1 year

CDC chart for stature-for-age and weight-for-age in girls 2-20 years old

Sarah H.
4 years old
31 lbs
37.5 in



PEDIATRIC SGNA RATING FORM			
Consider severity and duration of changes, as well as recent progression when rating each item.			
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GUIDELINES FOR AGGREGATING ITEMS INTO GLOBAL SCORE			
<p>In assigning an overall global score, consider all items in the context of each other. Give the most consideration to changes in weight gain and growth, intake, and physical signs of loss of fat or muscle mass. Use the other items to support or strengthen these ratings. Take recent changes in context with the patient's usual/chronic status. Was the patient starting off in a normal or nutritionally-compromised state?</p>			
Normal/Well nourished This patient is growing and gaining weight normally, has a grossly adequate intake without gastrointestinal symptoms, shows no or few physical signs of wasting, and exhibits normal functional capacity. Normal ratings in most or all categories, or significant, sustained improvement from a questionable or moderately malnourished state. It is possible to rate a patient as well nourished in spite of some reductions in muscle mass, fat stores, weight and intake. This is based on recent improvement in signs that are mild and inconsistent.			
Moderately malnourished This patient has definite signs of a decrease in weight and/or growth, and intake and may or may not have signs of diminished fat stores, muscle mass and functional capacity. This patient is experiencing a downward trend, but started with normal nutritional status. Moderate ratings in most or all categories, with the potential to progress to a severely malnourished state.			
Severely malnourished This patient has progressive malnutrition with a downward trend in most or all categories. There are significant physical signs of malnutrition—loss of fat stores, muscle wasting, weight loss >10%—as well as decreased intake, excessive gastrointestinal losses and/or acute metabolic stress, and definite loss of functional capacity. Severe ratings in most or all categories with little or no sign of improvement.			
	Normal	Moderate	Severe
OVERALL SGNA RANKING			

How would you define 4 year old female patient Sarah H.?

- Well nourished
- Moderately malnourished
- Severely malnourished

PEDIATRIC SGNA RATING FORM

Consider severity and duration of changes, as well as recent progression when rating each item.

NUTRITION-FOCUSED MEDICAL HISTORY	SGNA SCORE		
	Normal	Moderate	Severe
Appropriateness of Current Height for Age (stunting) a) Height percentile: 10 th <input checked="" type="checkbox"/> \geq 3 rd centile <input type="checkbox"/> just below 3 rd centile <input type="checkbox"/> far below 3 rd centile	✓		
b) Appropriate considering mid-parental height ^a ?: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	✓		
c) Serial growth ^b : <input checked="" type="checkbox"/> following centiles <input type="checkbox"/> moving upwards on centiles <input type="checkbox"/> moving downwards on centiles (gradually or quickly)	✓		
Appropriateness of Current Weight for Height (wasting) Ideal Body Weight = <u>13.8</u> kg Percent Ideal Body Weight: <u>97.9</u> % <input checked="" type="checkbox"/> $>$ 90% <input type="checkbox"/> 75-90% <input type="checkbox"/> $<$ 75%	✓		
Unintentional Changes in Body Weight a) Serial weight ^c : <input type="checkbox"/> following centiles <input type="checkbox"/> crossed \geq 1 centile upwards <input checked="" type="checkbox"/> crossed \geq 1 centile downwards		✓	
b) Weight loss: <input checked="" type="checkbox"/> $<$ 5% usual body weight <input type="checkbox"/> 5-10% usual body weight <input type="checkbox"/> $>$ 10% usual body weight	✓		
c) Change in past 2 weeks: <input type="checkbox"/> no change <input type="checkbox"/> increased <input checked="" type="checkbox"/> decreased		✓	
Adequacy of Dietary Intake a) Intake is: <input type="checkbox"/> adequate <input checked="" type="checkbox"/> inadequate - hypocaloric <input type="checkbox"/> inadequate - starvation (ie, taking little of anything)		✓	
b) Current intake versus usual: <input type="checkbox"/> no change <input type="checkbox"/> increased <input checked="" type="checkbox"/> decreased		✓	
c) Duration of change: <input type="checkbox"/> $<$ 2 weeks <input checked="" type="checkbox"/> \geq 2 weeks		✓	
Gastrointestinal Symptoms a) <input checked="" type="checkbox"/> no symptoms <input type="checkbox"/> one or more symptoms; not daily <input type="checkbox"/> some or all symptoms; daily	✓		
b) Duration of symptoms: <input type="checkbox"/> $<$ 2 weeks <input type="checkbox"/> \geq 2 weeks	✓		
Functional Capacity (nutritionally related) a) <input type="checkbox"/> no impairment, energetic, able to perform age-appropriate activity <input checked="" type="checkbox"/> restricted in physically strenuous activity, but able to perform play and/or school activities in a light or sedentary nature; less energy; tired more often <input type="checkbox"/> little or no play or activities, confined to bed or chair $>$ 50% of waking time; no energy; sleeps often		✓	
b) Function in past 2 weeks: <input checked="" type="checkbox"/> no change <input type="checkbox"/> increased <input type="checkbox"/> decreased		✓	
Metabolic Stress of Disease <input checked="" type="checkbox"/> no stress <input type="checkbox"/> moderate stress <input type="checkbox"/> severe stress	✓		

^aMid-parental height: Girls: subtract 13 cm from the father's height and average with the mother's height. Boys: add 13 cm to the mother's height and average with the father's height. Thirteen cm is the average difference in height of women and men. For both girls and boys, 8.5 cm on either side of this calculated value (target height) represents the 3rd to 97th percentiles for anticipated adult height. (29)
^b30% of healthy term infants cross one major percentile and 23% cross two major percentiles during the first 2 years of life, typically towards the 50th percentile rather than away from it. This is normal seeking of the growth channel.

PHYSICAL EXAM	SGNA SCORE		
	Normal	Moderate	Severe
Loss of subcutaneous fat <input type="checkbox"/> no loss in most or all areas <input checked="" type="checkbox"/> loss in some but not all areas <input type="checkbox"/> severe loss in most or all areas		✓	
Muscle Wasting <input checked="" type="checkbox"/> no wasting in most or all areas <input type="checkbox"/> wasting in some but not all areas <input type="checkbox"/> severe wasting in most or all areas	✓		
Edema (nutrition-related) <input checked="" type="checkbox"/> no edema <input type="checkbox"/> moderate <input type="checkbox"/> severe	✓		

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Normal/Well nourished

This patient is growing and gaining weight normally, has a grossly adequate intake without gastrointestinal symptoms, shows no or few physical signs of wasting, and exhibits normal functional capacity. Normal ratings in most or all categories, or significant, sustained improvement from a questionable or moderately malnourished state. It is possible to rate a patient as well nourished in spite of some reductions in muscle mass, fat stores, weight and intake. This is based on recent improvement in signs that are mild and inconsistent.

Moderately malnourished

This patient has definite signs of a decrease in weight and/or growth, and intake and may or may not have signs of diminished fat stores, muscle mass and functional capacity. This patient is experiencing a downward trend, but started with normal nutritional status. Moderate ratings in most or all categories, with the potential to progress to a severely malnourished state.

Severely malnourished

This patient has progressive malnutrition with a downward trend in most or all categories. There are significant physical signs of malnutrition—loss of fat stores, muscle wasting, weight loss $>$ 10%—as well as decreased intake, excessive gastrointestinal losses and/or acute metabolic stress, and definite loss of functional capacity. Severe ratings in most or all categories with little or no sign of improvement.

	Normal	Moderate	Severe
OVERALL SGNA RANKING			

How would you define 4 year old female patient Sarah H.?

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	Normal	Moderate	Severe
OVERALL SGNA RANKING		✓	

How would you define 4 year old female patient Sarah H.?

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Thanks

Presented by Bailey Morrison
for 203 Assessment Course
Instructed by Dr. Nancy Hamler
University of the Pacific
Master of Clinical Nutrition program
Sacramento, California, USA
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Resources

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Resources

PHOTOS in order of appearance:

- Adorable baby waiting to be checked by doctor
- Baby on length measuring mat
- Doctor measuring newborn baby head
- Infant length measurement technique diagram
- Medical team in a doctor's office
- Lateral view doctor talking to mother of a baby
- Medium shot doctor talking to patient
- Medium shot girl being checked
- Osteopathist treating a kid by massaging him at the hospital
- Medium shot doctor checking girl
- Close-up of female's doctor hand checking the girl patient's throat and neck