

# Training Course on Child Growth Assessment

WHO Child Growth Standards

## Boy's Growth Record

Your child's growth from birth to 5 years



Child's name: \_\_\_\_\_

Date of birth: \_\_\_\_\_



World Health  
Organization

# Boy's Growth Record

## For use by parents and other care providers to monitor and promote his health, growth, and development

This is the main record of your son's health, growth and development.

This booklet contains recommendations for feeding and caring for your son at different ages: as a child grows, his needs change.

The record is to be used jointly by you and others who care for him. Therefore, keep it in a safe place and **carry it with you whenever you bring him to:**

- a health centre (whether it is for a well-baby visit or because he is sick)
- a doctor or other health care provider
- a hospital outpatient department or emergency department
- any other health appointment

# Personal Data

**Child's name** \_\_\_\_\_

Boy

*If a girl,  
must use a  
Girl's Growth  
Record*

Identification/Record number \_\_\_\_\_

Parents' names \_\_\_\_\_

\_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

## Birth information:

Date of birth \_\_\_\_\_

Gestational age at birth \_\_\_\_\_ Single/multiple birth? \_\_\_\_\_

Measurements at birth:

Weight \_\_\_\_\_ Length \_\_\_\_\_ Head circumference \_\_\_\_\_

Birth rank \_\_\_\_\_

Date of birth of next younger sibling (born to mother) \_\_\_\_\_

## Feeding:

Age at introduction of any foods or fluids \_\_\_\_\_

*More details of feeding history*

Age at termination of breastfeeding \_\_\_\_\_

*may be recorded in Visit Notes*

## Adverse events (dates):

(such as death of parent, death of sibling age <5 years) \_\_\_\_\_

\_\_\_\_\_

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## Sample Immunization Schedule (EPI)

Age	Vaccine	Date received	Place received
2-3 months	DPT-1		
	Hib		
	Hepatitis B		
	OPV-1		
4-5 months	DPT-2		
	Hib		
	Hepatitis B		
	OPV-2		
6-7 months	DPT-3		
	Hib		
	Hepatitis B		
	OPV-3		
12-15 months	MMR		
	Yellow fever		
18 months	DPT		
	OPV		
5 years	DPT		
	OPV		
	MMR		

Bring your child back for the next immunizations on:

\_\_\_\_\_

\_\_\_\_\_

## **Other National Programme Recommendations for Children under Age 5 Years**

*(Recommendations to be inserted with space to record supplements given, etc)*

**Micronutrient supplementation given, such as iron, Vitamin A:**

(note date, supplement, amount given)

**Deworming:**

**Developmental assessment:**

Date of birth:

## Visit Notes

Date of visit	Age today (Completed years/months or weeks)	Measurements (Record below; then plot on charts)			Reason for visit, observations, recommendations
		Weight (kg)	Length/Height (cm)	BMI*	

\* BMI (body mass index) = weight in kilograms divided by length or height in meters squared ( $\text{kg}/\text{m}^2$ )

## Visit Notes

**Feeding: Notes on history, any problems, counselling given**

Other information (such as drug or food allergies, chronic conditions):

Date of birth:

### Visit Notes

Date of visit	Age today (Completed years/months or weeks)	Measurements (Record below; then plot on charts)			Reason for visit, observations, recommendations
		Weight (kg)	Length/Height (cm)	BMI*	

\* BMI (body mass index) = weight in kilograms divided by length or height in meters squared (kg/m<sup>2</sup>)

## Visit Notes

**Feeding: Notes on history, any problems, counselling given**

Other information (such as drug or food allergies, chronic conditions):

Date of birth:

### Visit Notes

Date of visit	Age today (Completed years/months or weeks)	Measurements (Record below; then plot on charts)			Reason for visit, observations, recommendations
		Weight (kg)	Length/Height (cm)	BMI*	

\* BMI (body mass index) = weight in kilograms divided by length or height in meters squared (kg/m<sup>2</sup>)

## Visit Notes

**Feeding: Notes on history, any problems, counselling given**

Other information (such as drug or food allergies, chronic conditions):

## When Special Care or Advice May be Needed

Any time that you have concerns about your child's growth or development, seek the advice of a health care provider. He or she can assess your child and advise you.

Other times that special care or advice may be needed include:

- ♥ If the child's growth curve is too far from the centre line (labelled '0'), it may be a sign that he is undernourished or overweight. If he is not within the normal range, a health care provider can help you find ways to help him grow normally. For example, changes may be needed in the type of foods he is given, or the frequency or quantity of feeding. Or he may need more emotional support, or stimulation, or physical activity that will help him become healthy.
- ♥ If the child is severely undernourished, he needs urgent specialized care.
- ♥ If the child is obese, he needs medical assessment and specialized management. Discuss this with the health care provider.
- ♥ If a mother suspects that she may be HIV positive, she should be encouraged to go for counselling and testing.
- ♥ If a pregnant woman or the mother of an infant knows that she is HIV positive, she needs specialized counselling about her options for feeding the baby.

## Recommendations for feeding and care of infants and children



- ♥ If your child is sick, feed him according to the recommendations for his age group provided in this section. Also give more fluids (breastfeed more for a breastfed child) and encourage him to eat soft, varied, appetizing, favourite foods. After illness, give food more often than usual and encourage the child to eat more.



## Recommendations for feeding an infant up to 6 months of age

- Feed your baby only breast milk until he is 6 months of age (180 days).
- Breastfeed as often as your baby wants, day and night, at least 8 times in 24 hours.
- Breastfeed when your baby shows signs of hunger: beginning to fuss, sucking fingers, or moving his lips.
- At each feeding, encourage your baby to empty the breast and then offer the other breast.
- Do not give him other foods or fluids. Breast milk quenches your baby's thirst and satisfies his hunger.



## Recommended foods for babies and children age 6 months to 5 years

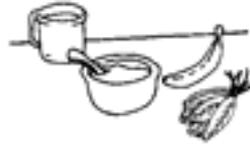
Breast milk continues to be an important source of nutrients up to age 2 years or beyond. Your baby needs other foods and liquids in addition to breast milk once he reaches 6 months of age (180 days). This page lists examples of recommended foods. The following pages recommend how much, how often and how to feed your child at different ages.

- Staple foods give your child energy. These foods include cereals (rice, wheat, maize, millet, quinoa), roots (cassava, yam, potato), and starchy fruits (plantain, breadfruit).
- Staple foods do not contain enough nutrients by themselves. You also need to give animal-source and other nutritious foods. Your child should eat a variety of these foods:
  - Animal-source foods: Liver, meat, chicken, fish, eggs
  - Milk products: Cheese, yoghurt, curds (and milk, for non-breastfed children)
  - Pulses: Chickpeas, lentils, cow peas, black-eyed peas, kidney beans, lima beans (For vegetarians, these are important alternatives to animal-source foods.)
  - Green leafy and yellow-coloured vegetables: Spinach, broccoli, chard, sweet potatoes, carrots, pumpkin
  - Fruits: Banana, orange, guava, mango, peach, kiwi, papaya
  - Oils and fats: Vegetable oils, butter
  - Groundnut paste, other nut pastes; soaked or germinated seeds such as sesame, pumpkin, sunflower, melon seeds
- Feed your child different foods from the groups above, together with the staple food.

## Recommendations for feeding an infant age 6 months to 1 year



- Breastfeed as often as your baby wants.
- To initiate complementary feeding, begin offering him small amounts of other foods at age 6 months (180 days). Introduce new foods one at a time. Wait a few days to be sure that he can tolerate a new food before introducing another food.
- Give him staple foods and a variety of animal-source and other nutritious foods (listed on page 15).
- Increase the quantity of food as he grows older while continuing to breastfeed frequently.
  - **At 6–8 months of age**, start by offering 2–3 tablespoons of thick porridge or well-mashed foods 2–3 times per day. Increase the amount gradually to 1/2 cup.\* By 8 months, give him small chewable items to eat with his fingers. Let him try to feed himself, but provide help. Avoid foods that can cause choking (such as nuts, grapes, raw carrots). Give 1–2 snacks between meals depending on his appetite.
  - **At 9–11 months of age**, offer finely chopped or mashed foods and foods that baby can pick up, about 1/2 cup, at 3–4 meals per day plus 1–2 snacks depending on his appetite.



- Feed him from his own plate or bowl.
- Patiently help your baby eat. Talk to him lovingly, look into his eyes and actively encourage him to eat, but do not force him.
- If he loses interest while eating, remove any distractions and try to keep him interested in the meal.
- After 6 months of age, babies may need more water even when they drink the recommended amounts of milk. To find out if your baby is still thirsty after eating, offer him some water (that has been boiled and cooled).

\* In these recommendations, a cup refers to 250 ml or an 8 ounce cup and a tablespoon refers to a 15 ml tablespoon. Each country should specify customary measures that mothers will understand.

The suggested amounts assume an energy density of 0.8–1.0 Kcal/g. If the foods given are thin and lower in nutritional content (i.e. about 0.6 Kcal/g), meals should increase to 2/3 cup at 6–8 months and to 3/4 cup at 9–11 months.

## Recommendations for feeding a child age 1 to 2 years

- Breastfeed as often as your child wants up to age 2 years or beyond.
- Continue to give 3–4 meals of nutritious foods, chopped or mashed if necessary, 3/4–1 cup\* at each meal. Also give 1–2 snacks per day between meals depending on his appetite.
- At each meal, feed your child a staple food along with different nutritious foods from the groups listed on page 15.
- Feed him from his own plate or bowl. Continue to actively help him to eat.



\* The suggested amount assumes an energy density of 0.8–1.0 Kcal/g. If the foods given are thin and lower in nutritional content, the child should receive a full cup at each meal.



## Recommendations for feeding a child age 2 to 5 years

- Give family foods at 3 meals each day. Also, twice daily between meals, give nutritious snacks such as:

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- Offer a variety of foods such as those on page 15. If he refuses a new food, offer him “tastes” of it several times. Show that you like the food.
- Do not force him to eat. Give realistic portions depending on his age, size and activity level. Increase the quantity of food as he grows older.



## Recommendations for Safe Food Preparation and Hygiene

Practise good hygiene to prevent illness:

- Wash your hands with soap before preparing food, before feeding a baby, and after using the latrine or toilet.
- Obtain clean water for drinking, treat it properly,\* store it in clean covered containers, and use a clean scoop to draw it.
- Wash your child's cup or bowl thoroughly with soap and clean water or boil it.
- Avoid using feeding bottles which are difficult to clean.
- Prepare food using clean utensils. Feed a baby with a clean spoon.
- Keep food preparation surfaces clean by using water and soap or detergent to clean them after each use.
- Cook foods thoroughly, especially meat, poultry, eggs and seafood. Reheat cooked food thoroughly, for example, bring soups and stews to boiling point.
- Cover food that is left over, and refrigerate it if possible. Discard cooked food that is left at room temperature for longer than two hours.
- Avoid contact between raw and cooked foods and store them in separate containers.
- Have a clean, functioning latrine that is used by all family members old enough to do so. Quickly collect the stool of a young child or baby and put it into a latrine. Promptly clean a child who has passed stool. Then wash your hands and his.

\* Boil water vigorously for a few seconds. Cover and let it cool down on its own without adding ice. This water is safe for the baby to drink.

## Key Messages about Care for All Times

- ♥ Brain development is most rapid in the first two years of life, so young children need to be stimulated by playing with others, moving around, hearing sounds, and having things to see, touch, and explore.
- ♥ Daily routines regarding eating, sleeping, hygiene, etc. help children to develop regular patterns and to feel secure.
- ♥ Teach your child to communicate by speaking to him, listening to him, and playing with him.
- ♥ Play is children's work. It gives them many chances to learn and develop the ability to solve problems. They learn by trying things out and by observing and copying others.
- ♥ Fancy toys are not needed for development. Toys to stimulate development can be made at home.
- ♥ Illness interferes with normal growth and development. To prevent illness, have your child immunized and feed him as described in the Growth Record. When he is ill, take him to a health care provider.
- ♥ Children learn most rapidly when they are in nurturing and stimulating relationships with their caregivers. The mother, father, and siblings can all contribute to the child's development by caring for and playing with him.
- ♥ Protecting children from physical harm and emotional distress (due to violence or strong anger) helps them gain confidence to explore and learn.

## Care for development messages

### Age 0 to 4 months

#### ***Emotional development***

- A healthy child can see, hear, and smell at birth. He recognizes his mother from her voice, scent, and face.
- His father plays an important role in the child's development and should be involved in caring for him.
- He can learn a lot from older siblings, and they from him, so they too should play with and help care for him.
- Soothing him when he is distressed will help him learn to trust and communicate with you.
- Breastfeeding is a good time for cuddling, nurturing, and emotional bonding.

#### ***Communication***

- Look into your child's eyes and smile at him (for example, when feeding). Talking face to face with him, repeating his sounds and gestures, and singing to him will teach him to communicate.
- He will respond to his mother's touch, looks, smiles and sounds. He will try to communicate his needs through movements, cooing sounds, and cries.

#### ***Movement***

- He will soon discover his hands and feet. Letting him move his arms and legs freely will help him grow strong.
- He will begin to reach for objects and put them in his mouth because he learns by taste and touch.
- He will try to raise his head to see around. Help by carrying him, raising his head and back so he can see. Letting him roll on a safe surface will help him develop his muscles.

## Care for development messages

### Age 4 to 6 months

#### **Emotional development**

- Children love to see people and faces, so family members should hold and carry the baby, smile, laugh, and talk with him.
- He is now attaching to his mother and may feel uncomfortable with strangers. Leaving him with people he knows will help him feel secure.

#### **Communication**

- He enjoys making new sounds like squeals and laughs. He will respond to someone's voice with more sounds, copy the sounds he hears, and start learning about making a conversation with another person.
- To prepare him for talking, repeat his sounds and talk to him about what he feels, sees and wants.



#### **Movement**

- As he sees his world, he will want to touch, taste, and explore. Giving him safe clean colourful household objects that he can touch, bang, throw, and put into his mouth will help him learn and develop hand skills. Keep away small objects that can go into the mouth and be swallowed.
- Letting him sit with support and roll around safely will help his muscles develop.

## Care for development messages

### Age 6 months to 1 year

#### **Emotional development**

- He may not want to separate from you. Help him cope with separation by gently telling him when you will need to leave him and by leaving him with people he is familiar with. Peek-a-boo and hide-and-seek are well-known games to teach him that you are not gone forever when he cannot see you.
- He will notice when people express strong anger and may be upset by it. Avoid exposing him to such emotional distress and reassure him if it does happen.
- The love and time you give him, your interest in what he is doing, and your support for his curiosity will help his self-confidence.

#### **Communication**

- Respond to his sounds and interests. Talk to him, sing for him, give meaning to his babbling, take notice, and respond when he tries to tell you something. Telling him stories, reading to him, and telling him the names of things and people will help him learn to speak and communicate.

#### **Movement**

- Playing with safe clean household items like non-breakable plates, cups and spoons, banging pots and pans, opening and closing lids, stacking and sorting objects, and feeding himself with his fingers will help his learning and hand skills.
- Letting him move freely and play in a safe environment will help his muscles develop.



# Care for development messages

## Age 1 to 2 years

### **Emotional development**

- Give him opportunities to do things for himself, and rejoice in what he does to help him develop self-esteem.
- He may be angry and frustrated when he cannot have all that he wants. Tell him about his feelings. He will learn rules quicker if there are not many of them and if they are clear and consistent.
- He may want to do everything on his own and appear stubborn. He may want to stay an infant and also be grown up at the same time. Understanding this phase of his childhood, holding him when he wants to be a baby, and giving him some independence when he wants to be grown up will help him.

### **Communication**

- This age is important for him to learn to speak and understand words. Encourage his learning by watching what he does and naming it. Use every chance to make conversation with him (for example, when feeding, bathing, or working near him).
- Ask him simple questions and respond to his attempts to talk. Encourage him to repeat words. Listening when he uses gestures or words will increase his efforts to talk. Imaginary play, books, songs, rhymes, stories, and taking turns in games will enrich his development.

### **Movement**

- He will begin to use one hand more frequently and skilfully. Let him use whichever hand the brain has selected. He can practice hand skills while he is feeding and dressing himself, drawing, scribbling, playing with water, playing with things he can stack or combine, and putting things in and out of containers.
- Take him outside so that he can run, jump, climb, and grow strong.



## Care for development messages

### Age 2 years and older

#### **Emotional development**

- The love and time you give him, your interest in what he is doing, your belief that he will succeed, and your support for his curiosity will help his self-confidence and desire to learn.
- At this age he can understand what is right and wrong. He can be taught how people should behave through stories, songs, and games. He will learn better if he is told what is correct first, and he should be corrected gently so that he does not feel ashamed.
- Cooking and doing errands together, sorting clothes, and doing other household chores will boost his self-confidence and improve his learning.

#### **Communication**

- Listen to what he is telling you, encourage him to ask questions, and try to answer them. Let him talk about whatever he has experienced or wants to tell you. Encourage him to tell stories. Teach him to name things, to count, and to compare and match sizes, shapes and colours of things around him.

#### **Movement**

- Drawing, writing, colouring, stacking, sorting, and helping prepare food will improve his hand skills.
- Playing out of doors and with other children will enrich all of his development.
- Encourage his active play and movement. Provide opportunities for activities such as marching, jumping, kicking and hopping.



# Boy's Growth Charts



## Understanding Growth Charts

Normal growth in individual children can vary a great deal. Plotting a child's measurements over time on growth charts can show whether a child is growing normally or not.

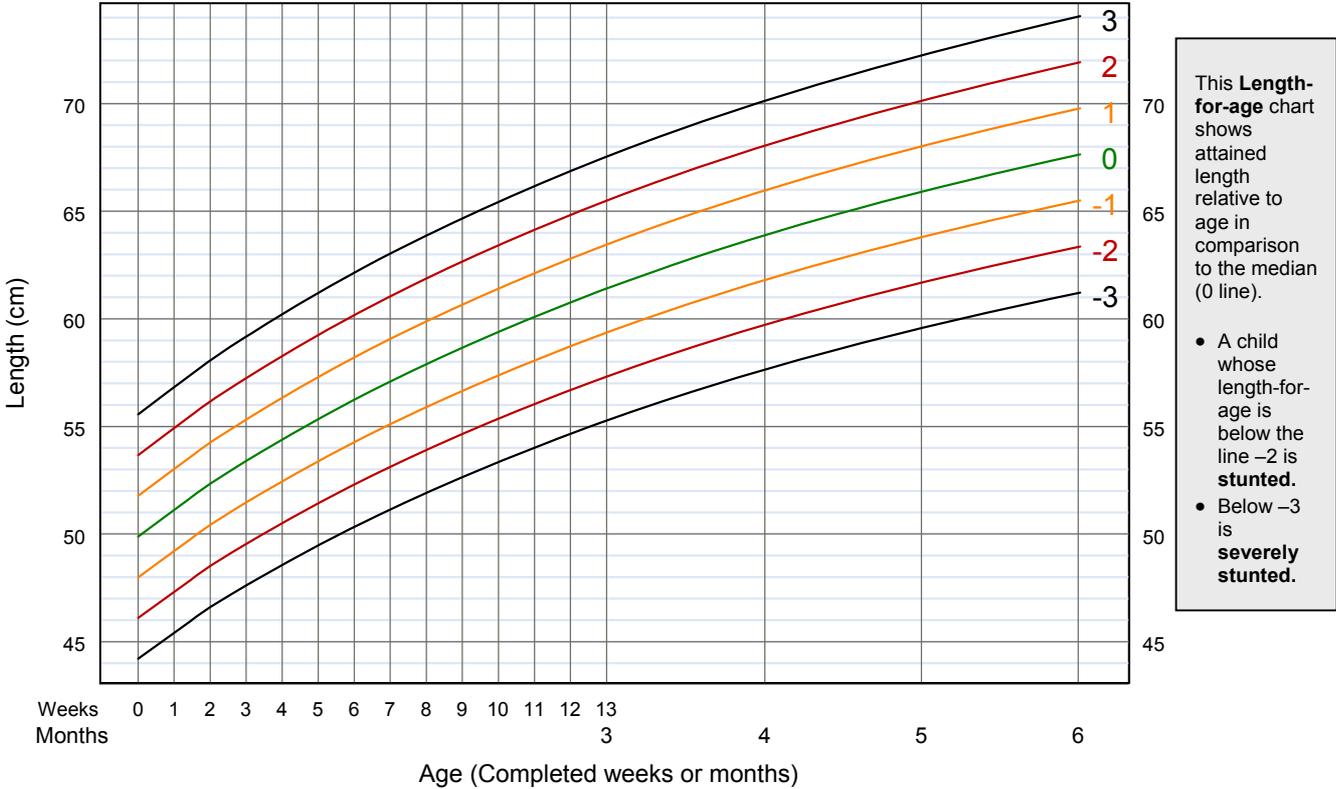
A health care provider weighs and measures your child and records these measurements. Then the child's measurements are plotted as dots on the charts. Measurements taken at later visits are also plotted, and the dots are joined by a line. This line is your child's growth curve or trend.

### Interpreting Growth Curves

- The line labelled 0 on the growth chart is the median which is, generally speaking, the average. The other lines, called z-score lines, indicate distance from the average. A point or trend which is far from the median, such as 3 or -3, indicates a growth problem.
- The growth curve of a normally growing child will usually follow a track that is roughly parallel to the median. The track may be above or below the median.
- Any quick change in trend (the child's curve veers upward or downward from its normal track) should be investigated to determine its cause and remedy any problem.
- A flat line indicates that the child is not growing. This is called stagnation and may also need to be investigated.
- A growth curve that crosses a z-score line may indicate risk. A health care provider can interpret risk based on where (relative to the median) the change in trend began and the rate of change.

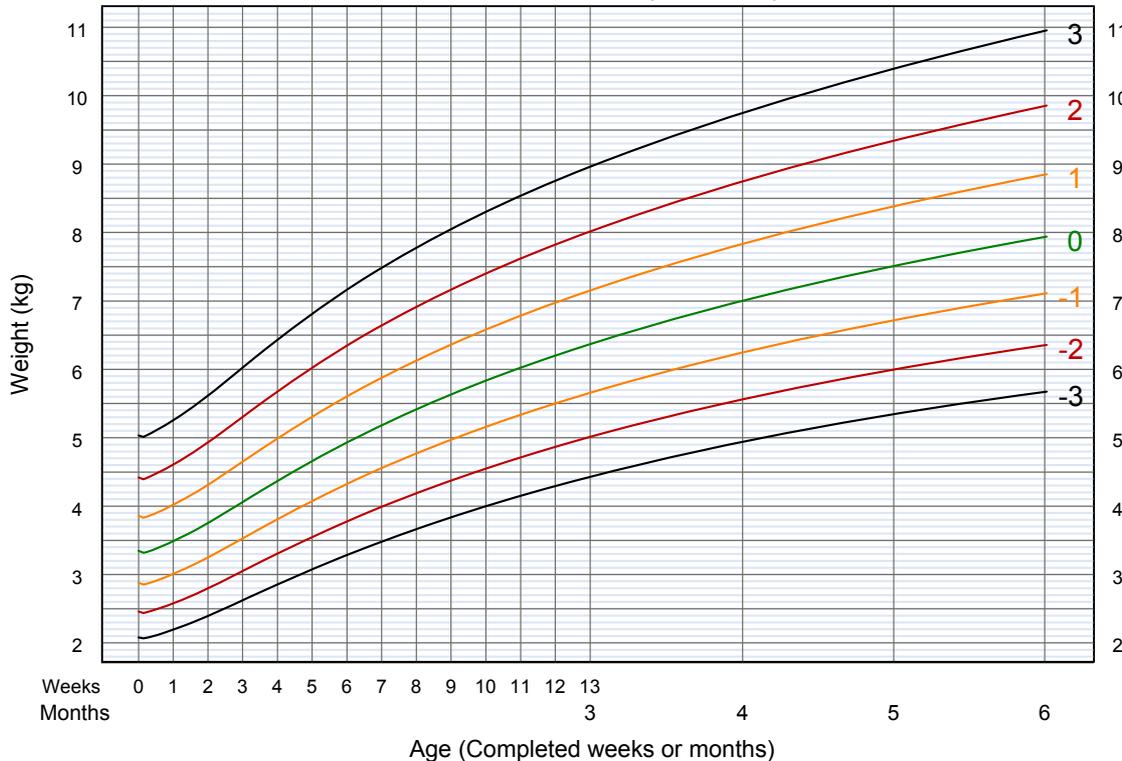
# Length-for-age BOYS

## Birth to 6 months (z-scores)



Birth to 6 months

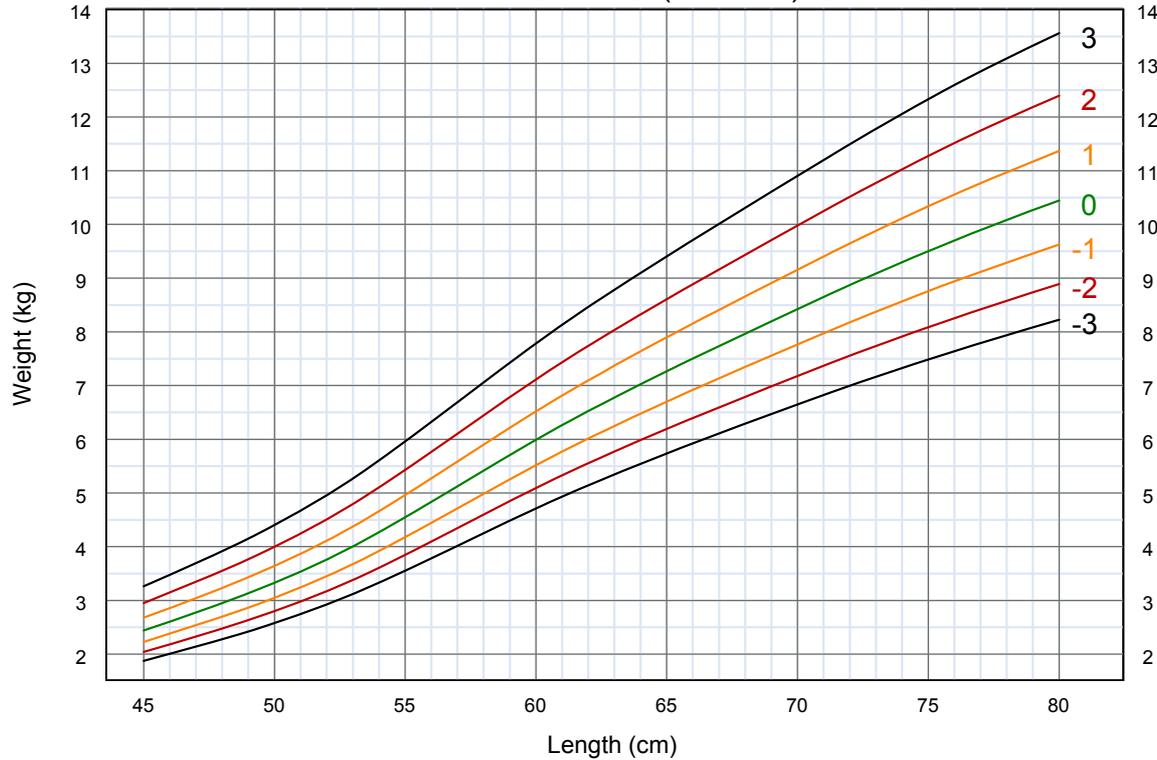
## Weight-for-age BOYS Birth to 6 months (z-scores)



This **Weight-for-age** chart shows body weight relative to age in comparison to the median (0 line).

- A child whose weight-for-age is below the line -2 is **underweight**.
- Below -3 is **severely underweight**. **Clinical signs of marasmus or kwashiorkor may be observed.**

## Weight-for-length BOYS Birth to 6 months (z-scores)



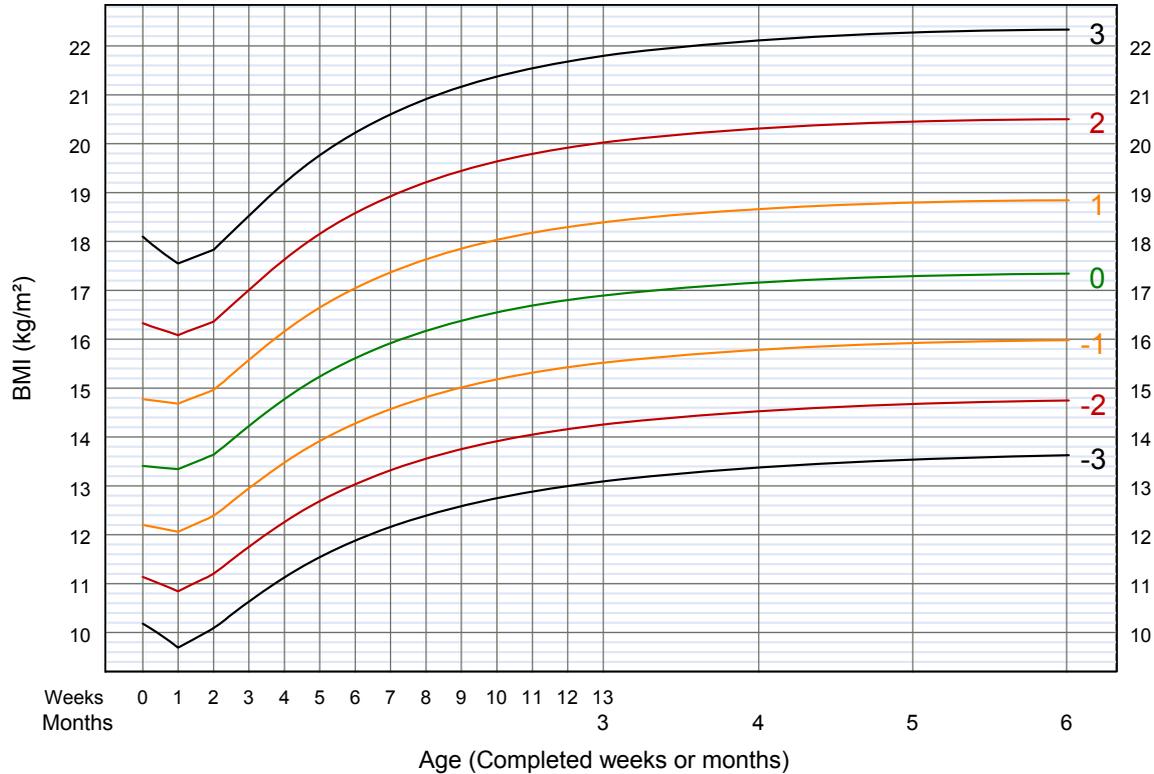
This **Weight-for-length** chart shows body weight relative to length in comparison to the median (0 line).

- A child whose weight-for-length is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.
- Below the line -2 is **wasted**.
- Below -3 is **severely wasted**. Refer for **urgent specialized care**.

Birth to 6 months

## BMI-for-age BOYS

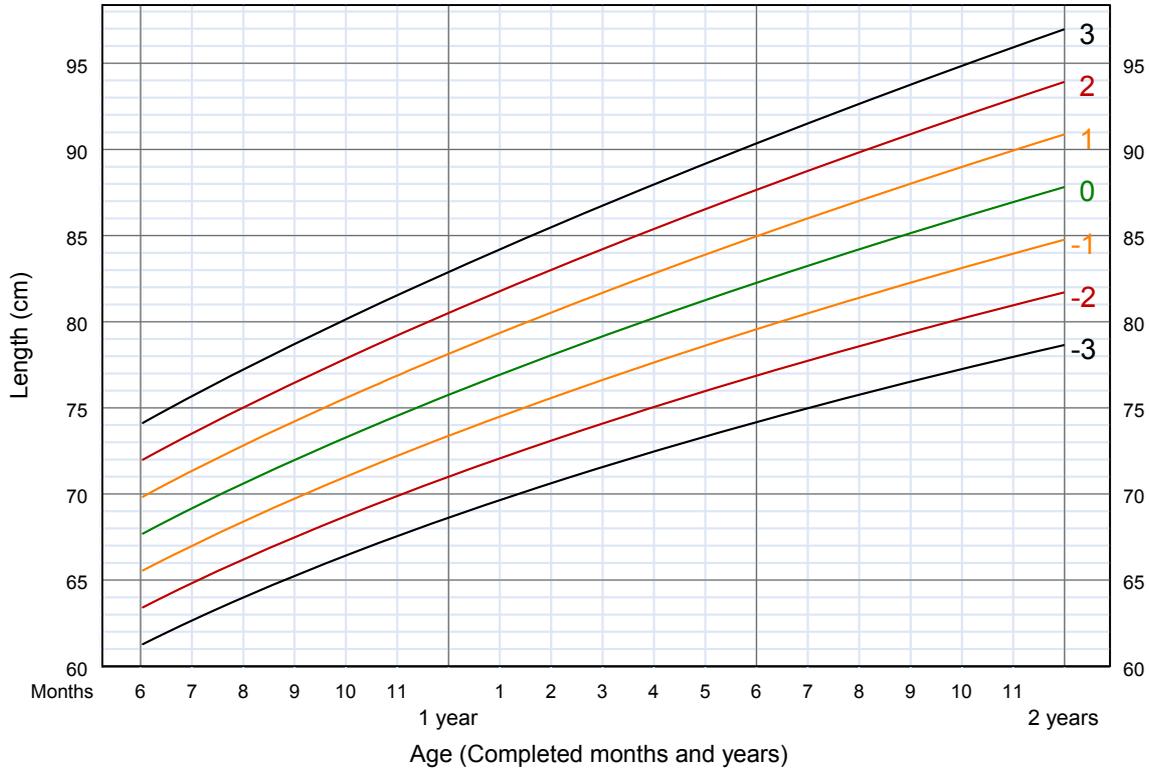
### Birth to 6 months (z-scores)



This **BMI-for-age** chart shows Body Mass Index (BMI, a ratio of body weight to length) for the child's age in comparison to the median (0 line). BMI-for-age is especially useful for screening for overweight.

- A child whose BMI-for-age is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.

## Length-for-age BOYS 6 months to 2 years (z-scores)

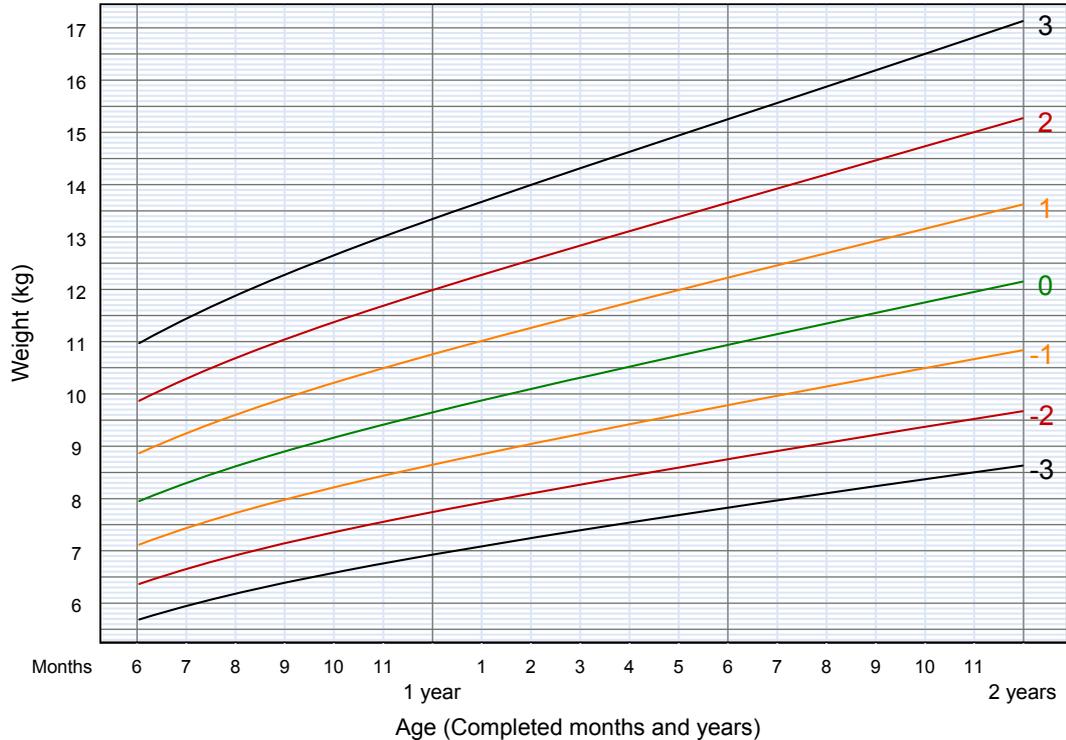


This **Length-for-age** chart shows attained length relative to age in comparison to the median (0 line).

- A child whose length-for-age is below the line **-2** is **stunted**.
- Below **-3** is **severely stunted**.

6 months to 2 years

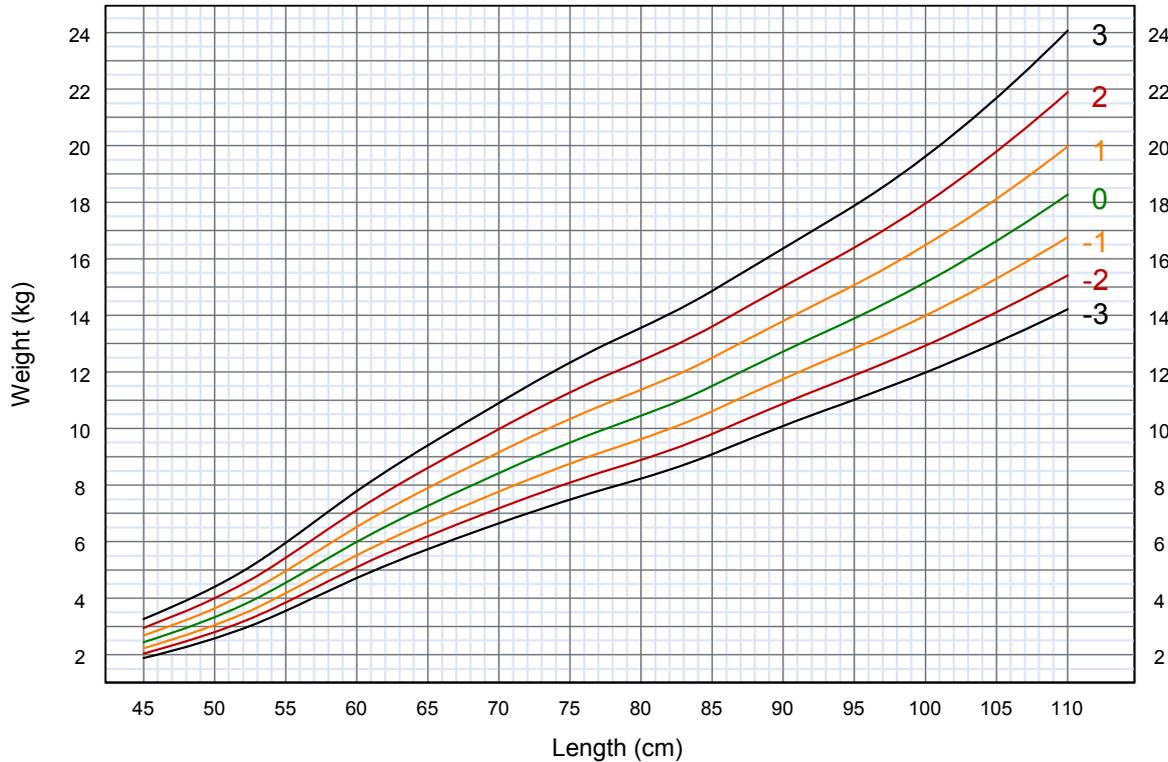
## Weight-for-age BOYS 6 months to 2 years (z-scores)



This **Weight-for-age** chart shows body weight relative to age in comparison to the median (0 line).

- A child whose weight-for-age is below the line -2 is **underweight**.
- Below -3 is **severely underweight**. **Clinical signs of marasmus or kwashiorkor** may be observed.

## Weight-for-length BOYS Birth to 2 years (z-scores)

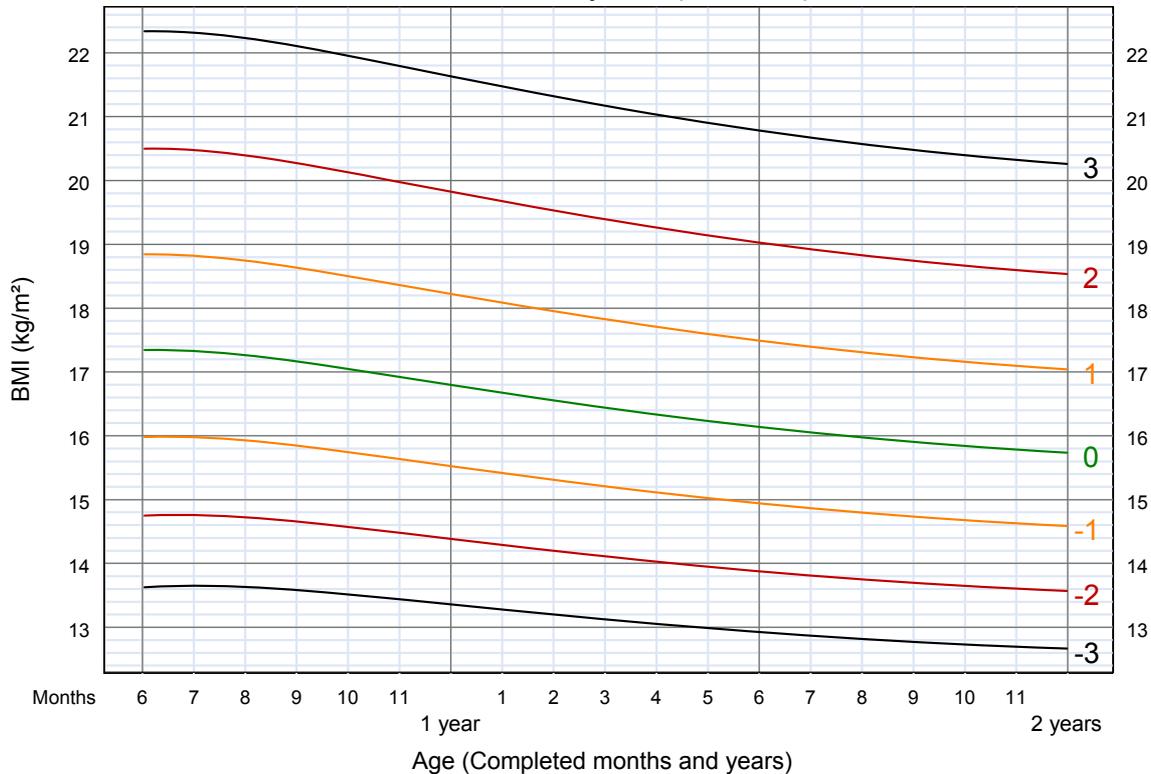


This **Weight-for-length** chart shows body weight relative to length in comparison to the median (0 line).

- A child whose weight-for-length is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.
- Below the line -2 is **wasted**.
- Below -3 is **severely wasted**. Refer for urgent specialized care.

6 months to 2 years

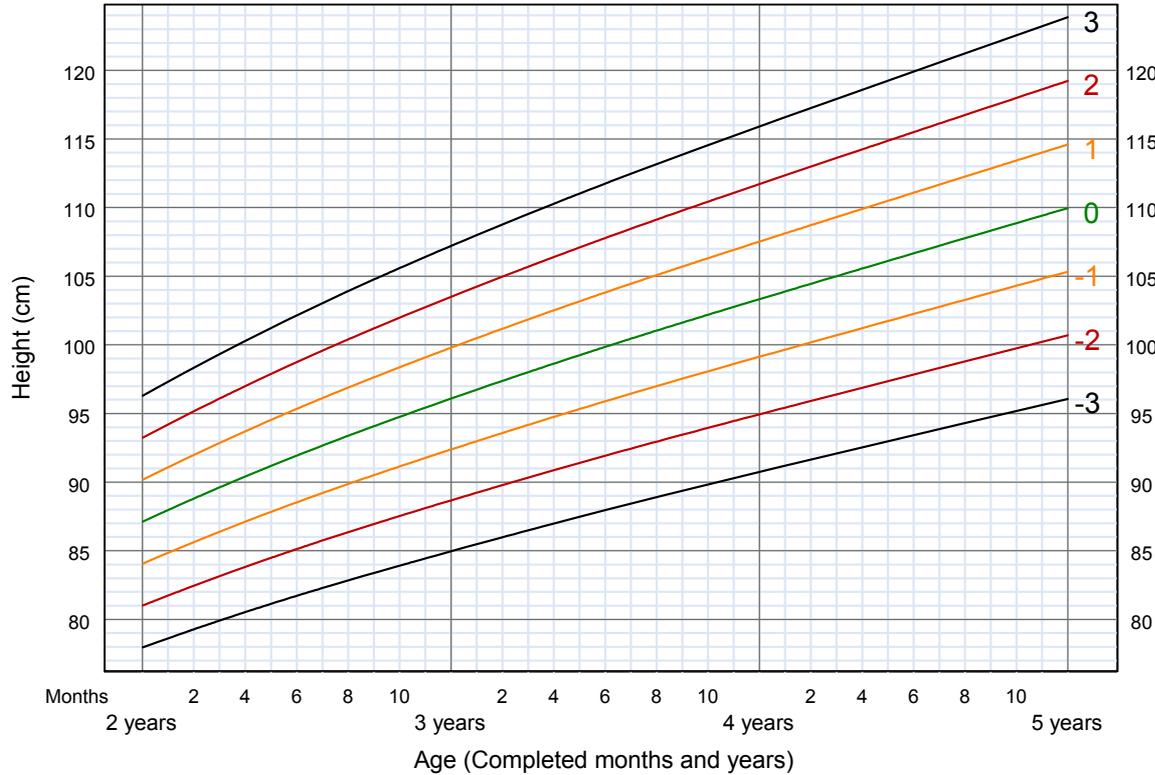
## BMI-for-age BOYS 6 months to 2 years (z-scores)



This **BMI-for-age** chart shows Body Mass Index (BMI, a ratio of body weight to length) for the child's age in comparison to the median (0 line). BMI-for-age is especially useful for screening for overweight.

- A child whose BMI-for-age is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.

# Height-for-age BOYS 2 to 5 years (z-scores)

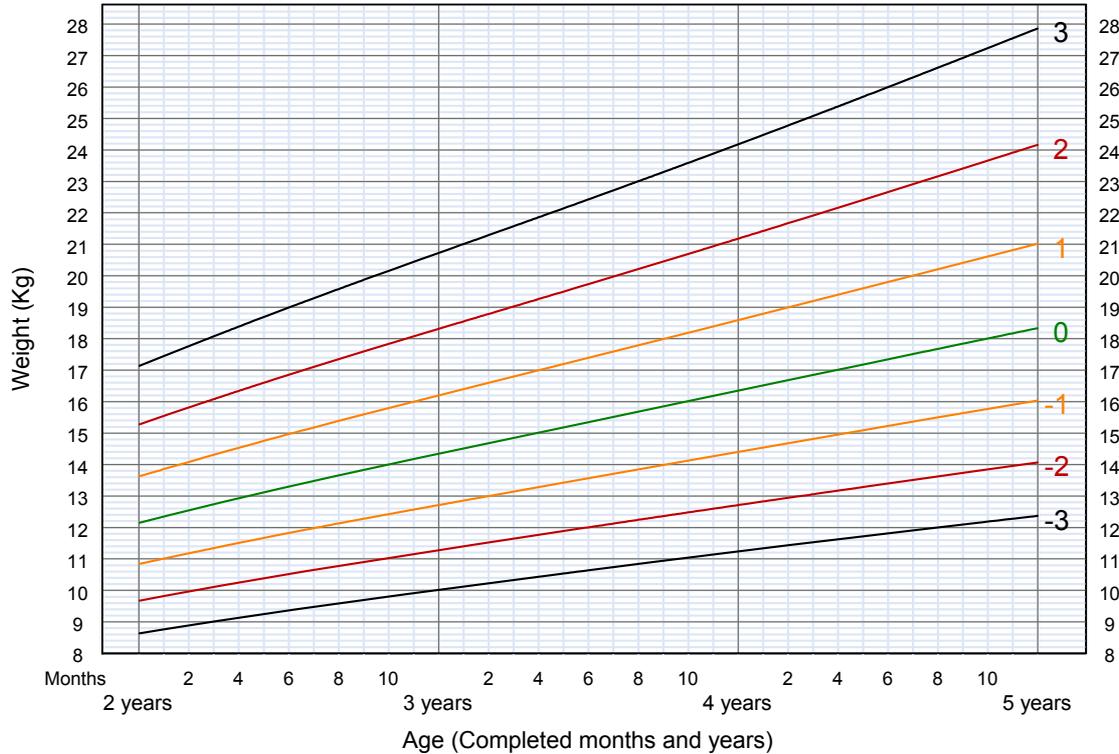


This **Height-for-age** chart shows growth in height relative to age in comparison to the median (0 line).

- A child whose height-for-age is below the line -2 is **stunted**.
- Below -3 is **severely stunted**.

2 to 5 years

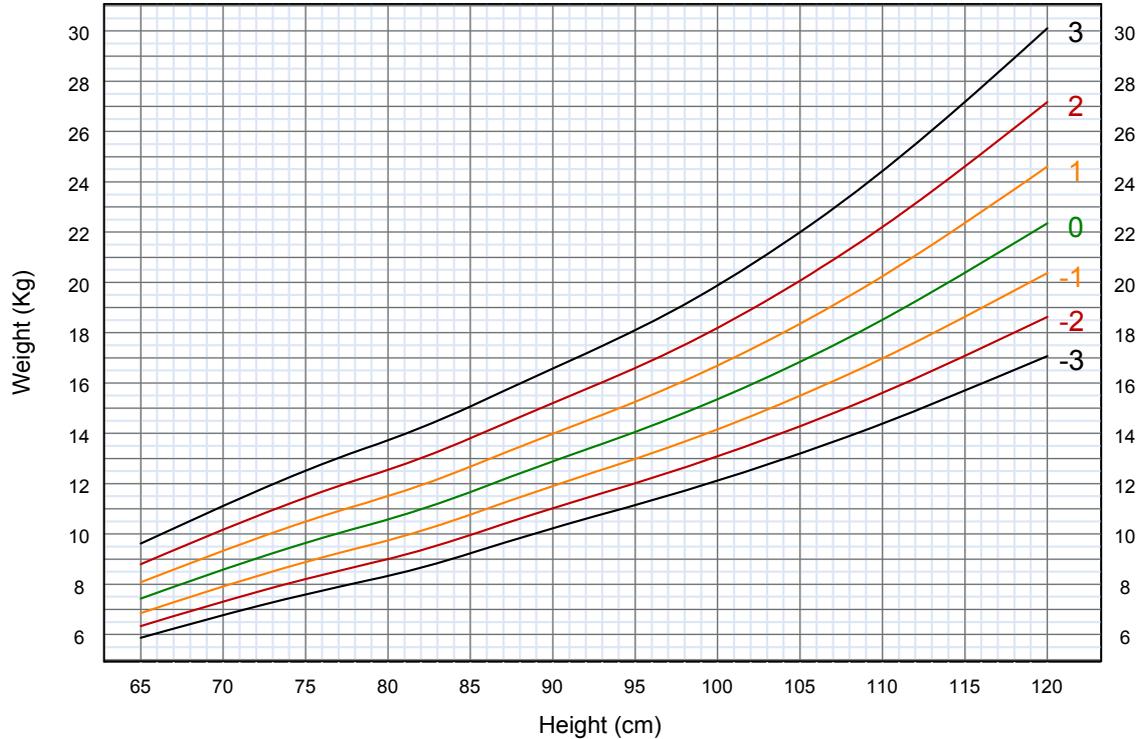
## Weight-for-age BOYS 2 to 5 years (z-scores)



This **Weight-for-age** chart shows body weight relative to age in comparison to the median (0 line).

- A child whose weight-for-age is below the line -2 is **underweight**.
- Below -3 is **severely underweight**. Clinical signs of marasmus or kwashiorkor may be observed.

## Weight-for-height BOYS 2 to 5 years (z-scores)

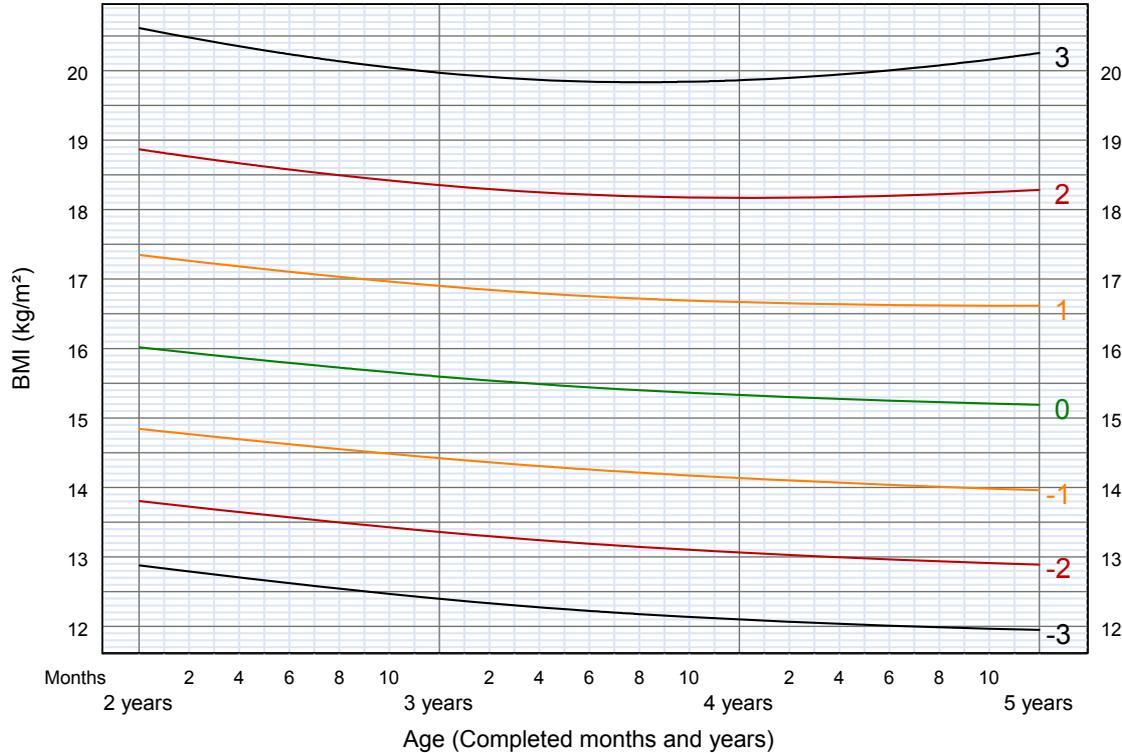


This **Weight-for-height** chart shows body weight relative to height in comparison to the median (0 line).

- A child whose weight-for-height is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.
- Below the line -2 is **wasted**.
- Below -3 is **severely wasted**. Refer for **urgent specialized care**.

2 to 5 years

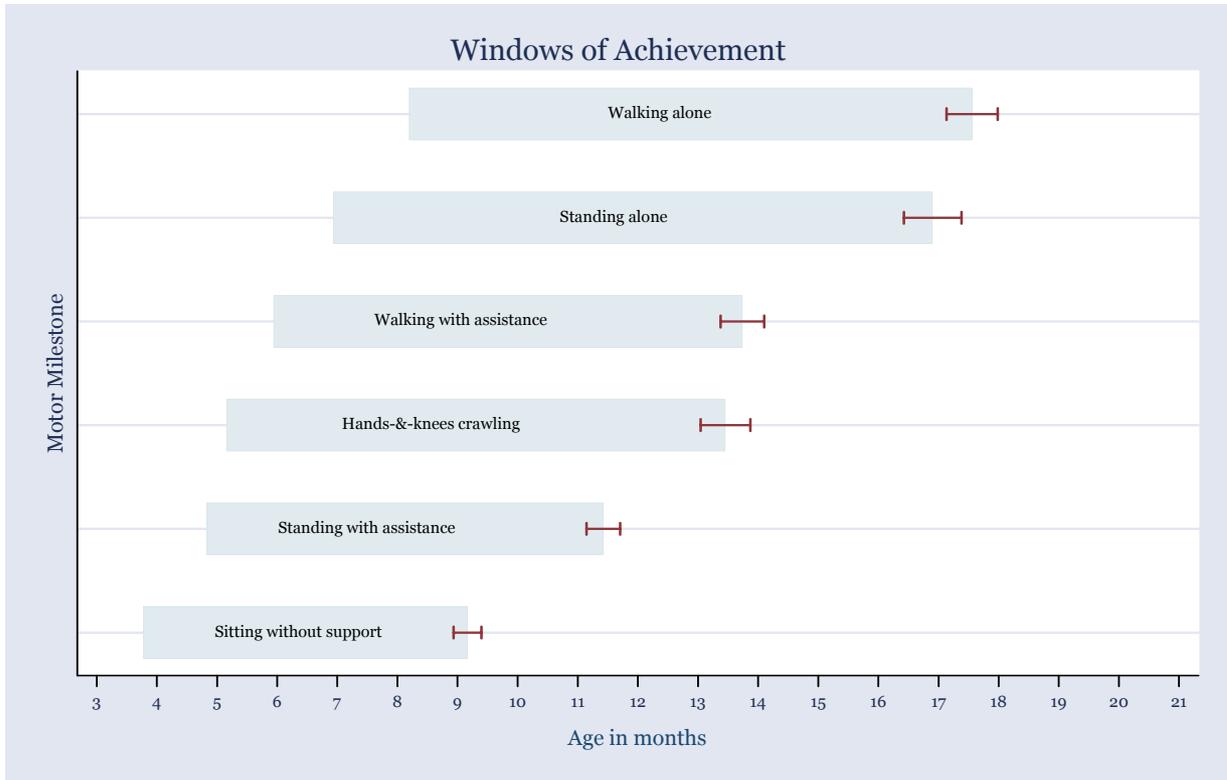
## BMI-for-age BOYS 2 to 5 years (z-scores)



This **BMI-for-age** chart shows Body Mass Index (BMI, a ratio of body weight to length) for the child's age in comparison to the median (0 line). BMI-for-age is especially useful for screening for overweight.

- A child whose BMI-for-age is above the line 3 is **obese**.
- Above 2 is **overweight**.
- Above 1 shows possible **risk of overweight**.

# Gross Motor Milestones



*These windows show when the population for the WHO Child Growth Standards achieved these motor milestones.*

## Annex: Immunization schedule for infants recommended by the WHO Expanded Programme on Immunization

This chart would be used when developing the immunization schedule for a country, such as on page 4 of this booklet. (This page is not for mothers.)

Vaccine	Age				
	Birth	6 weeks	10 weeks	14 weeks	9 months
BCG	x				
Oral polio	x*	x	x	x	
DTP		x	x	x	
Hepatitis B	x	x		x	
		x	x	x	
<i>Haemophilus influenzae</i> type b		x	x	x	
Yellow fever					x <sup>b</sup>
Measles					x <sup>c</sup>

\* *In polio-endemic countries*

<sup>a</sup> Scheme A is recommended in countries where perinatal transmission of hepatitis B virus is frequent (e.g. in South-East Asia). Scheme B may be used in countries where perinatal transmission is less frequent (e.g. in sub-Saharan Africa).

<sup>b</sup> In countries where yellow fever poses a risk.

<sup>c</sup> A second opportunity to receive a dose of measles vaccine should be provided for all children. This may be done either as part of the routine schedule or in a campaign.





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