දූරකථන) 2698471
தொலைபேசி) 2698475
Telephone) 2698490
2698507

ෆැක්ස්)
பெக்ஸ்) 2693566
Fax)

මඟුල් තැපෑල)
மின்னஞ்சல் முகவரி) postmaster@health.gov.lk
E-mail) www.health.gov.lk

සුවසිරිපාය
சுவசிரிபாய
SUWASIRIPAYA

සෞඛ්‍ය ආරක්ෂණ හා පෝෂණ අමාත්‍යාංශය
சுகாதார பராமரிப்பு மற்றும் போஷணை அமைச்சு
Ministry of Healthcare & Nutrition

මගේ අංකය) DGHS/D(FHB)/2007/27
எனது இல)
My. No.)

ඔබේ අංකය)
உமது இல)
Your No.)

දිනය) 30-01-2008
திகதி)
Date)

General Circular letter No - 02 - 18/2008

All Provincial Directors of Health Services
All Regional Directors of Health Services
Director-NIHS
Chief MOH – CMC
All MOMCHs/ DCMOH – MCH, CMC
All MOHs

Protocol on Managing Nutritional Problems among Under Five Children In the Community

Nutritional problems among infants and young children are a major public health issue in Sri Lanka. Although weighing of children and recording in the CHDR is carried out routinely, identification of problems and provision of appropriate interventions seem rather unsatisfactory. Therefore, clear and uniform instructions are needed for the preventive healthcare staff in identifying and managing such problems in the community.

As one of numerous steps taken by the Family Health Bureau to improve the nutritional status of infants and young children, the above protocol was compiled after a series of workshops with relevant experts and representatives from the College of Paediatricians. The finalized document was reviewed by an expert on growth monitoring and promotion from WHO.

Please bring the contents of this protocol to the notice of all relevant healthcare personnel in order to ensure proper management of nutritional problems among infants and young children in the community. A copy of the protocol is attached herewith.

Dr. Ajith Mendis
Director General of Health Services

cc; Director-Maternal and Child Health
Director-Nutrition, Ministry of Health
Director-Nutrition Coordination Division, Ministry of Health
Director-Health Education Bureau
Chief Epidemiologist
Head, Nutrition Division, MRI
MOICs of Regional Training Centres (Public Health)
Principals of Nurses Training Schools
Head- Dept. of Community Medicine, Faculty of Medicine, University of .....
Head- Dept. of Paediatrics, Faculty of Medicine, University of .....
President- Sri Lanka College of Paediatricians
President-College of Community Physicians of Sri Lanka
President – Nutrition Society of Sri Lanka

o/c

Protocol for Managing Nutritional Problems among Under five Children in the Community

Introduction:

Malnutrition among under five children continues to be a health problem in Sri Lanka. Although declining trends have been observed over the years in respect of stunting and underweight, wasting has remained more or less static. Further, obesity has been noted as an emerging problem in some populations contributing to the double burden of disease. Nutritional insults during early life has a great bearing on health as adults; development of NCDs (diabetes, hypertension etc), reduced IQ, reduced work capacity etc.

Despite efforts directed by the health sector towards improving feeding and care practices, disease prevention and strengthening growth monitoring and promotion programme, nutritional problems continue to exist among under five children.

In the present Growth monitoring and Promotion Programme, routine weighing of children and recording measurements in the CHDR is carried out in clinics and field weighing posts. However it has been noted that identification of nutritional problems and the provision of appropriate interventions seems rather unsatisfactory. Lack of clear definitions and management protocols were also identified as deficiencies.

Therefore these guidelines on definitions of nutritional problems together with the management protocols developed in order to help the field health staff to identify nutritional problems early and manage accordingly will definitely strengthen Growth Monitoring and Promotion and thereby contribute towards improving the nutritional status of under five children in Sri Lanka.

Definition of growth faltering (GF):

A child's growth curve should continue to **rise parallel to reference lines** based on the birth weight. Therefore, any deviation in a child's growth curve compared to the reference curves such as;

- Inadequate weight gain or
- No weight gain (flattening) or
- A drop in weight

between **two consecutive weight measurements** is defined as growth faltering.

With correct interventions, a child with growth faltering should come back to the **original growth potential** curve in which he/she initially was, to be considered as having normal growth.

Children with GF who later continue to grow parallel to reference curves in the green zone but **below the original growth potential** curve (according to birth weight) should ideally achieve the original growth potential after appropriate intervention.

Certain children whose growth curve had been in the **light green zone (or light orange in the older version of revised 2004 CHDR),** between **-1SD to -2SD or below** since birth and growing parallel to reference curves may thereafter shift gradually upwards towards the median (may even grow parallel to median) due to good dietary practices/habits etc. Such children if they later present with inadequate weight gain/flattening/drop in weight between two consecutive weight measurements are also considered as having GF even if the weight at this point is at a higher level than the initial trend.

Definition of underweight and severe underweight:

A child whose weight is in the orange zone between -2SD and -3SD in the revised (2004 and 2007) CHDR or below 3rd centile in the old CHDR is considered as underweight.

A child whose weight is in the red zone below – 3SD in the revised CHDR is considered as severely underweight.

Definition of overweight:

A child whose weight is above +2SD (in the purple zone) in the revised (2004 and 2007) CHDR is considered as "overweight" *. Further, in both the old and revised CHDRs, if a child's growth curve rises **steeply** crossing the median or the +2 SD lines or during 2 consecutive weight measurements (at least 1 month apart) within two reference lines, that child is considered to be at risk of overweight (This applies to children who have been growing normally and not for those who show catch up growth after growth faltering/underweight).

Pre term babies:
However it must be borne in mind that for premature babies (babies born before 37 weeks of gestation), it is not appropriate to plot their weights and heights in the existing graphs which are for term infants and young children. Therefore their age has to be corrected by subtracting the number of weeks born earlier (40 - weeks at birth) from the present post natal age and the present weight or height compared against that corrected age which will give a more accurate picture of the child's growth.

E.g. A child born at 34 weeks of gestation, (40-34 = 6 weeks preterm) now 18 months of age and weighing 9kg ⟹ weight would be in the orange zone when age is not corrected, therefore inaccurately considered as underweight.

When it is corrected;
By deducting 6 weeks from present age (18 months - 6 weeks) = 16 1/2 months.
Weight of 9 kg to be plotted at 16 1/2 months ⟹ weight is in the light green zone.
Hence, the child is not underweight.

* Overweight is defined as **weight for height** above +2SD. However in the national growth monitoring and promotion programme, weight for height is not assessed routinely. Therefore weight for age is considered as the programme indicator in identifying overweight.

Management of growth faltering, underweight and over weight by Public Health Midwife

1. Children with growth faltering who are in the green zone (+2SD to -2SD): (or in the old CHDR, children growing above the 3rd centile)

Children falling into the following categories should be immediately referred to the MOH;

- The first instance **a drop** in weight is detected irrespective of the location of the growth curve
- Weight shifting from the green zone to the orange zone
- Growth faltering in a child who is growing in the **light green** zone
- If a child with long standing GF (GF for 3 consecutive weight measurements) is encountered eg. A child coming to reside in a particular PHM area from another area

When GF is identified, especially when a drop in weight is observed, it is better to confirm it by repeating the weight measurement as it could be due to a fault in the technique or the weighing scale or even in recording.

In respect of others, PHM should always look for a cause at the **first instance** when inadequate weight gain/ flattening is detected.

She should obtain a history on illness and feeding practices to identify the most likely cause. A 24hour dietary recall should be obtained to assess adequacy and quality of nutrient intake i:e quantity and quality of food/drinks consumed by the child using check list (annex 1) (provided that the previous day was a typical day for the child with regard to meals).

If the cause is found to be ill health or PHM feels that she is unable to manage the identified problem or PHM is unable to identify a cause, the child should be referred to the MOH. However in case of simple conditions such as mild watery diarrhoea, PHM should counsel caregiver on rehydration, appropriate feeding practices and danger signs to be vigilant for prompt medical care.

If the cause is found to be inappropriate feeding practices, identify the exact practice/s causing growth faltering. Eg: If GF is due to giving watery types of food to the child, advise the mother on the need to provide foods in a thick consistency. Discuss methods to improve the energy density of food such as using oil or coconut milk to cook food or mixing some margarine/butter to the food before feeding. Use food intake reference tool for this purpose as a guide (annex 2).

Assess the weight after one month. If a satisfactory weight gain is observed, the child should be followed up regularly to ensure that growth reverts to normal. If growth faltering persists the child should be referred to the MOH.

2. Children in the light green zone (-1SD to -2SD) without growth faltering

Children growing in the light green zone are at a higher risk of becoming underweight for the slightest reason e.g. even with one episode of a mild illness. Therefore these children need to be followed up closely to prevent their weight from falling in to the orange zone (under weight category). Ideally an attempt should be made to achieve a **gradual** increase in weight towards the median (provided that weight for height is in the green zone) (annex 3).

3. Under weight children (< - 2SD or below 3rd centile in the old CHDR) without growth faltering

Children continuing to grow in the orange zone parallel to reference lines should be referred to MOH for assessment as soon as it is detected, to exclude any underlying medical cause. E.g. all low birth weight children. Such children should be followed up closely to prevent growth faltering. It is beneficial for the child if an attempt is made to achieve a **gradual** increase in weight towards the median (annex 3). However even with appropriate intervention some children may continue to grow in the orange zone parallel to reference lines which may be considered as normal for that particular child (however for recording purposes this child also will be identified as underweight).

4. Underweight children (<-2SD or below 3rd centile in the old CHDR) with growth faltering

Underweight children with growth faltering should be referred to the MOH by the PHM immediately on detection as they will be at a higher risk for morbidity and even mortality. Recurrent morbidity may aggravate underweight further. In addition, the recovery from illnesses may be longer for those children having nutritional problems.

5. Children whose growth curve rises steeply (from a state of normal growth)

PHM should refer the child to MOH if the growth curve **rises steeply** crossing the median or the +2 SD lines or steeply rising at 2 consecutive weight measurements within two reference lines (annex 3). This applies to children who have been growing normally and not for children who are showing catch up growth after GF or being underweight.
Children growing along the upper zone of the green zone should be closely monitored to ensure that their weight does not go to the purple zone.

6. Children in the purple zone (>+2SD) or above

Any child growing in the purple zone or above should be referred to MOH on detection (annex 4).

7. Children whose length/height for age curve is deviating away from the reference curves or is in the orange zone or below (<-2SD)

A child's length/height for age curve also should continue to **rise parallel to reference lines,** the same as the weight for age curve. In the event the PHM detects any deviations in the length/height for age curve of any child, she should refer the child to MOH for investigation. The deviations the PHM should look for;

- Length/height for age curve deviating away (downward or steeply upward trend) from reference curves (not going parallel to reference curves)
- Length/height for age curve in the orange zone or below (<-2SD)

Indications for Referral to MOH

1.	Cause for GF cannot be identified by PHM
2.	Ill health identified as cause for GF (except very simple conditions e.g. mild watery diarrhoea)
3.	PHM feels she is unable to manage the identified problem
4.	Drop in weight in those growing in green zone
5.	Growth faltering in child in light green zone
6.	Weight shifting from green zone to orange zone
7.	Not responding to intervention after one month
8.	A child with long standing GF (3 consecutive weight measurements)
9.	Underweight (including severe underweight) children with or without growth faltering
10.	Growing in the purple zone in the weight chart
11.	Growth curve rising steeply (for children who had been growing normally)
12.	Length/height for age curve not parallel to reference curves or in the orange zone or below

Thriposha to be issued according to the Thriposha circular:

Children above 6 months of age to 5 years who are

- Underweight
- Loss of weight for 3 consecutive months
- Hospitalized and having underweight or loss of weight for 3 consecutive months

Management of growth faltering, underweight and overweight by Medical Officer of Health

1. Children in the green zone with growth faltering
2. Under weight children without growth faltering

When a child with GF is brought to the notice of the MOH, a detailed history should be obtained and thorough examination done in order to identify any underlying pathological cause for the GF, eg. Infections like Upper Respiratory Tract Infection, Urinary Tract Infection, diarrhoea and noninfectious diseases like metabolic/genetic/congenital/chronic disorders (eg. asthma). If a condition manageable at the MOH level such as watery diarrhoea is identified as the cause, appropriate advice should be given to the caregiver and the child closely followed up to assess improvement in weight. However, if other conditions such as UTI, congenital/ metabolic disorders etc are suspected the child needs to be referred to a paediatrician.

If a medical condition is not suspected, then a dietary cause may be the reason for GF. Therefore a detailed dietary history (24hour recall – annex 1) needs to be taken to assess the adequacy of nutrients (quantity and quality) in the diet. If any dietary problem is detected the caregiver should be provided with the relevant dietary advice and the child followed up monthly to assess improvement in weight. If weight gain is satisfactory the child should be followed up by the PHM till he/she reaches his/her normal expected weight for age. However, if no satisfactory weight gain is observed in **3** consecutive weight measurements the child needs to be referred to a paediatrician.

3. Under weight children with growth faltering

The management is the same as above except that if no satisfactory weight gain is observed after **one** month, the child should be referred to a paediatrician.

4. Children in the red zone

All children identified should be referred to the paediatrician immediately for further management.

5. Growth curve crossing from green zone to purple
6. Rising steeply within the green/purple zone

In this situation, first it is necessary to ascertain whether the weight for length/height of the child is within the normal range or not. With regard to a tall child, the weight for age may be in the purple zone if the child is growing well. If the weight for length/height is normal it is sufficient to regularly monitor the growth of such children.
However if weight for length/height is high, a detailed history and physical examination is necessary to determine whether any pathological condition is responsible for this rapid growth. A detailed history on dietary practices and exercise is required to ascertain a dietary cause. If any medical condition is suspected the child needs to be referred to a paediatrician. If the cause is inappropriate dietary practices the caregiver should be counseled appropriately and the child followed up for two months. If the weight continues to increase

rapidly, refer to a paediatrician. If weight increase is parallel to the reference curves, weight for length/ height should be checked to see if within the normal range. If normal, regular follow up by PHM is sufficient to ensure the child is growing normally. If weight for length/ height is high, refer the child to a paediatrician for investigation and management.

7. Children in the purple zone

Certain children may grow in the purple zone but parallel to reference curves. If their weight for length/height is normal, routine follow up will be sufficient. However if that parameter is high, a detailed history and examination should be carried out to determine a cause. If any pathological cause is suspected the child should be referred to a pediatrician. If a dietary cause is suspected (ascertained by way of 24hr recall etc) appropriate advice on diet and exercise need to be provided for the caregiver and the child followed up monthly to assess the growth status. If growth pattern is normal, PHM should continue to monitor growth regularly at the field and clinic. If weight for length/height continues to be high, refer the child to a paediatrician for investigation and management.

It must be borne in mind that children on exclusive breastfeeding may cross over from green to purple zone and / or grow in the purple zone. If this is **due to breast feeding,** it is considered as normal and does not require any special intervention. However, it is always prudent to have the infant examined by the MOH to exclude any other cause for this trend.

Any child whose weight for age is above the purple zone should be referred to a paediatrician.

8. Children whose height for age curve deviates from the reference curves

A detailed history needs to be obtained and a thorough examination done to ascertain the cause responsible for the deviation. If a pathological cause – eg. congenital/chronic diseases, recurrent infections etc. is suspected refer the child to a paediatrician.

If a pathological cause can be excluded take a detailed dietary history to identify dietary practices to elicit the adequacy of nutrients in the dietary intake over a period of time. If any problem in the diet is detected the caregiver should be provided with the relevant dietary advice and the child followed up (once in two months incase of children less than two years of age and once in three months incase of older children) to assess improvement in length/height. If gain in height is satisfactory the child should be followed up in the field by the PHM till he/she reaches his/her normal expected length/height for age. However, if no satisfactory gain is observed the child needs to be referred to a paediatrician.

If a child whose height is in the orange zone or below is encountered it is advisable to refer the child to a paediatrician for an initial assessment.

A child whose height for age curve rises steeply also needs to be referred to a paediatrician for assessment.

9. Low birth weight and preterm children

- Try to achieve a **gradual** increase in weight towards the median weight (annex 3) or at least maintain growth parallel to reference line of growth potential of the child
- Iron supplementation (with vitamin C) is recommended from the age of two months to at least one year (preferably 2 years) - 2 mg/kg/body weight of elemental iron daily in liquid preparation
- Special attention must be paid to on demand breast feeding during the first year of life
- **It is important to monitor the growth monthly up to two years of age** and thereafter once in three months if growing normally.
- Stimulation is important to optimize psychosocial development

Indications for Referral to a Paediatrician:

1. The weight of the child is in the red zone
2. A cause cannot be identified for the problem
3. A medical cause is suspected (except in instances where the condition can be managed at MOH level – e.g. watery diarrhoea)
4. No improvement is observed for 3 consecutive weight measurements even with intervention in case of children in green zone and underweight children **without** growth faltering
5. No improvement is observed after one month despite intervention, incase of underweight children **with** growth faltering
6. The weight of the child continues to rise steeply for 2 consecutive weight measurements crossing reference lines despite interventions (with regard to children whose have been growing normally)
7. The weight for height continues to be high (>+2SD) even though the weight gain is parallel to reference curves
8. The length/height for age continues to deviate away from the reference curves in spite of intervention
9. The length/height for age curve in the orange zone or below
10. The length/height for age curve rising steeply

Summary

Management of growth faltering, underweight and overweight by PHM

1. Children with growth faltering who are in the green zone (+2SD to -2SD): (or in the old CHDR, children growing above the 3rd centile)

PHM should always look for a cause at the **first instance** inadequate weight gain/ flattening of weight is detected

↓

Obtain a history on
- illness,
- feeding practices
- take 24hr dietary recall to assess adequacy of nutrients – quality and quantity (annex 1)

↓

Identify the most likely cause

↙ ↘

- Dietary problems

-No identifiable cause/ill health/PHM feel
-Unable to manage problem

↓

- Discuss with mother on how to improve child's feeding
- Review in one month

↙ ↘

If GF persists

↓

Refer to MOH

If weight gain observed

↓

Regular monthly follow up

Management of growth faltering, underweight and overweight by MOH

1. **Children in the green zone with growth faltering**
2. **Under weight children without growth faltering**

Detailed history, examination in order to identify underlying cause - infections (UTI, URTI, diarrhoea etc), metabolic/genetic/congenital/ chronic disorders (eg. asthma)

If a cause cannot be identified,

If medical condition is suspected, advice on managing simple conditions (e.g. such as URTI, diarrhea) and others

If dietary cause suspected,
- 24h recall (annex 1)
- advice on diet and exercise
- follow up monthly

If no improvement after **2** consecutive months

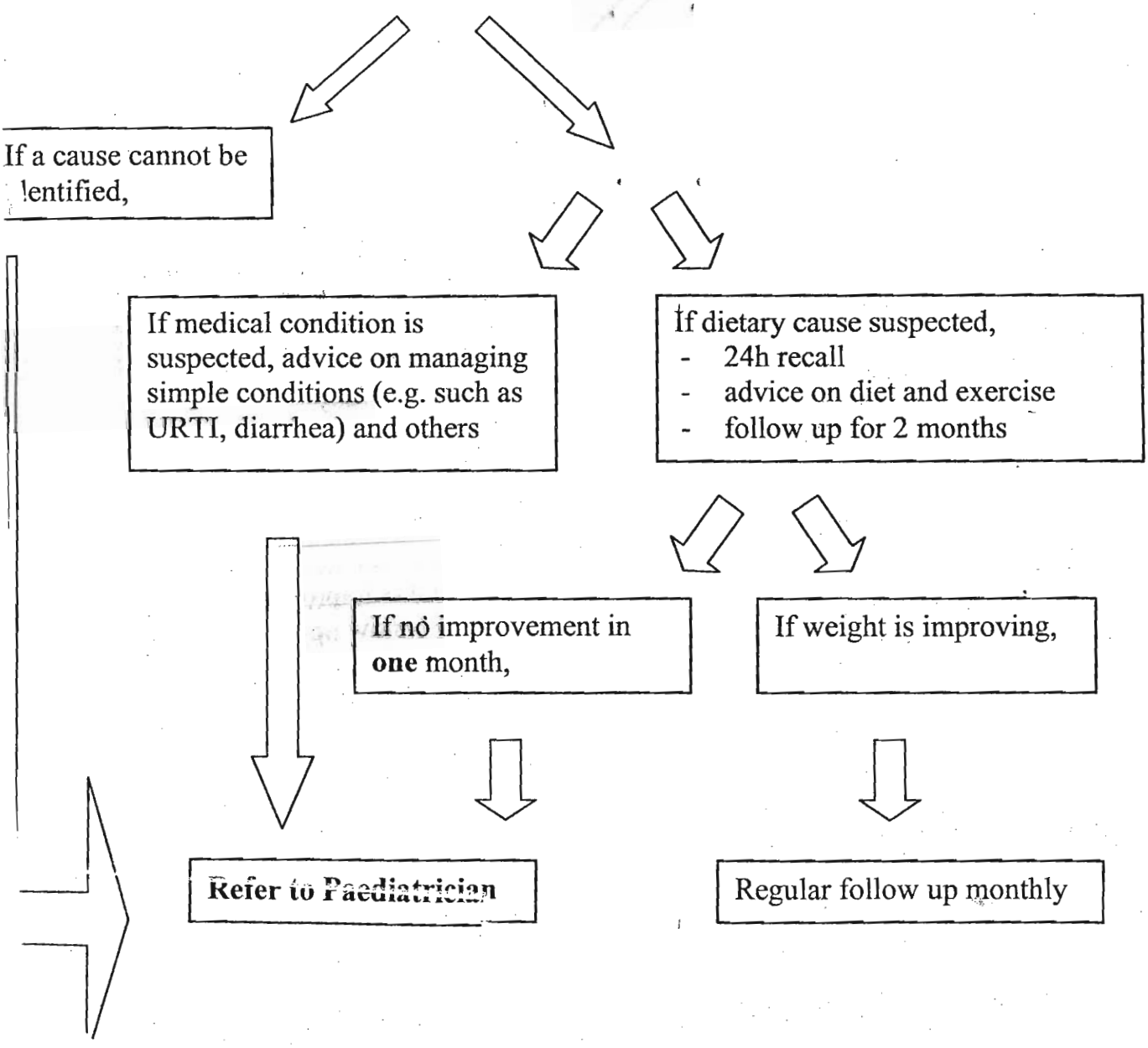
If weight is improving, regular follow up monthly

Refer to Paediatrician

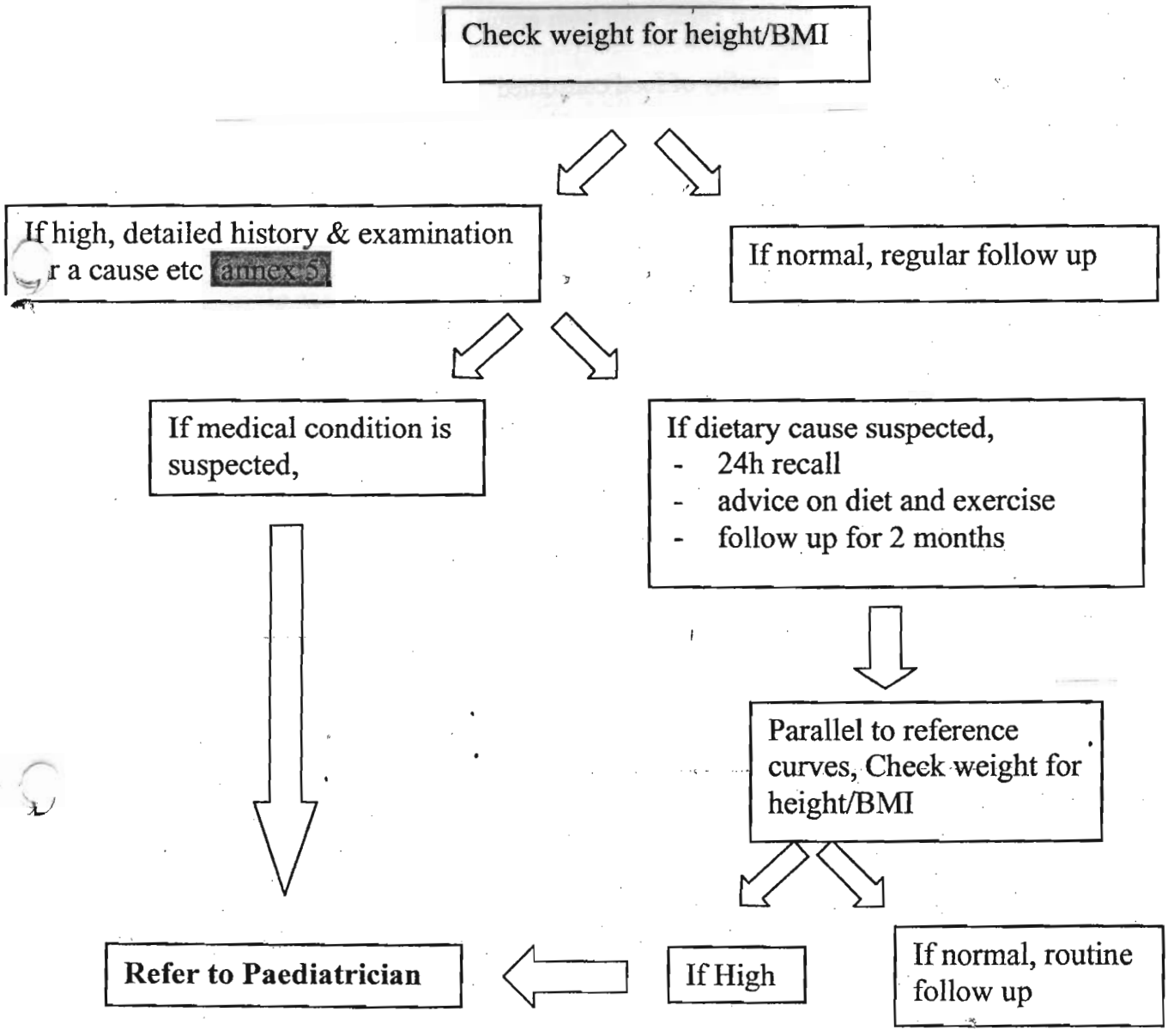
Children in the **red zone (below -3SD)** should be referred to a paediatrician.

3. Under weight children with growth faltering

Detailed history, examination in order to identify underlying cause - infections (UTI, URTI, diarrhoea etc), metabolic/genetic/congenital/ chronic disorders (eg. asthma)



4. Growth curve crossing from green zone to purple
or
rising steeply within the green/purple zone
or
within purple zone parallel to reference lines



Annex – 1

24 hr dietary recall;

- Record the type, frequency and quantity of all the foods and drinks **consumed** by child from waking up until going to sleep at night , and until waking up the next morning (volumes measured using common household measures – tea cup, tea spoon, table spoon etc)
- Categorize food consumed according to broad food groups
- Count frequency of food eaten from each group
- Compare with RDA
- Assess quantity and quality of food consumed

FOOD INTAKE JOB AID, 7-23 MONTHS		
Child's name		
Date of birth	**Age of child at visit**	
Feeding practice	**Yes / number where relevant**	**Key Message given**
Growth curve rising parallel to reference lines?		
Child received breast milk?		
How many meals of a thick consistency did the child eat yesterday? (use consistency photos as needed)		
Child ate an animal-source food yesterday? (meat/fish/offal/bird/eggs)		
Child ate a dairy product yesterday?		
Child ate pulses, nuts or seeds yesterday?		
Child ate a dark-green or yellow vegetable or yellow fruit yesterday?		
Child ate sufficient number of meals and snacks yesterday, for his/her age?		
Quantity of food eaten at main meals yesterday appropriate for child's age?		
Mother assisted the child at meals times?		
Child took any vitamin or mineral supplements?		
Child ill or recovering from an illness?		

Energy requirements of children from complementary food and minimum number of meals to be given during first two years:

Age in months	Texture	Frequency	Amount
7-8 (200 kcal/d)	Well mashed foods. Start with mashed rice. Continue adding pulses, fish/sprats/meat, vegetables, green leafy vegetables, egg yolk etc	2-3 meals/day plus frequent breast feeds. Depending on child's appetite 1-2 snacks	Start with 2-3 teaspoonfuls per feed, increasing gradually to a little bit more than 1/2 a tea cup at each meal
9-11 (300 kcal/d)	Coarsely chopped or mashed foods and foods baby can pick up (finger foods)	3-4 meals plus breast feeds. Depending on child's appetite 1-2 snacks may be offered	about 3/4 of a tea cup at each meal
12-23 (550 kcal/d)	Family foods (chopped or mashed coarsely if necessary)	3-4 meals plus breast milk after meals. Depending on child's appetite one to two snacks may be offered	1 tea cup or a little bit more than a tea cup at each meal

standard tea cup = 200 ml

Recommended minimum food intake per day (servings):
(**raw** amounts for the **whole day** is given for the 1-5 year age group)

Food group	7 - 9 months	9+ - 12 months	12+ - 24 months	2+ - 5 years	
Cereals	2-3	3-4	3-4	4 or more servings	230g/d
* Breast milk	As desired	As desired	After meals	After meals	
Milk products e.g. yoghurt, curd, cheese	½ - 1	1	1	1-2	
Fish, meat and eggs	1	1-2	1-2	2 small	50g/d
Lentils, pulses, nuts,	1	1	1-2	1-2	60g/d
Fruits	1	1-2	1-2	1-2	100g/d
Vegetables,	1	1-2	1-2	1-2	50g/d
Green leafy vegetables	1	1	1	1	50g/d
Fat based foods	One teaspoon /meal	1-2 teaspoon /meal	Small amounts	Small amounts	30ml/d
Sugar based foods Eg. sweets	-	-	A small amount after mealtime	A small amount after mealtime	25g/d
* incase of formula fed infants	500 - 600ml	500-600ml	2 cups	2 cups	(400ml)

Serving sizes:

Rice, bread, other cereals

- 1/2 a tea cup of cooked rice/cooked cereal/pasta
- 1 slice of bread (450g bread in to 9 slices)
- 1/2 tea bun
- 2 egg sized potatoes
- 1 egg size sweet potatoes
- 3 crackers
- 3 table spoons breakfast cereals

Milk & diary products

- 100ml milk
- 1 cup of yoghurt/curd
- 1 small match box size piece of cheese
- 3 teapoons milk powder

Meat, fish & alternatives

- 3 table spoons cooked dhal
- 1 hen's egg
- ½ duck's egg
- 25-50 g of cooked fish/ chicken/ lean meat = (a piece the size of a match box), 6 sprats

Fruits

- 1 medium banana, orange

Vegetables

- 3 tablespoons of cooked fruit vegetables
- ½ tea cup of cooked leafy vegetables

a standard tea cup = 200ml

Annex - 2 **Food intake reference tool**

FOOD INTAKE REFERENCE TOOL, 7-23 MONTHS		
Child's name		
Date of birth	**Age of child at visit**	
Feeding practice	**Ideal Feeding Practice**	**Key Message given**
Growth curve rising parallel to reference lines?		*Look at the direction of the growth curve – is the child growing?*
Child received breast milk?	yes	Breast feeding for 2 yrs of age or longer helps a child to develop and grow strong and healthy
How many meals of a thick consistency did the child eat yesterday? (use consistency photos as needed)	3 main meals	Foods thick enough to stay in the spoon will give more energy and nutrients to child
Child ate an animal-source food yesterday? (meat/fish/offal/bird/eggs)	Animal source food should be eaten daily	Animal source foods are specially good for children to help them grow strong, healthy and active
Child ate a dairy product yesterday?	Give dairy products daily	- do -
Child ate pulses, nuts or seeds yesterday?	If meat etc are not eaten daily, pulses/ nuts should be eaten daily with an iron absorption enhancer like vitamin C rich food	Peas, beans, lentils, nuts and seeds are good for children
Child ate dark-green leaves or yellow vegetable or yellow fruit yesterday?	Dark green leaves/ yellow vegetable or fruit should be eaten daily	Dark green leaves/yellow vegetables/yellow fruits help the child have healthy eyes and fewer infections
Child ate sufficient number of meals and snacks yesterday, for his/her age?	A growing child 7-8 months old needs 2-3 main meals a day, at 9-23 month needs 3-4 meals a day plus 1-2 snacks	A growing child needs 2-4 meals plus 1-2 snacks if hungry; Give a variety of foods
Quantity of food eaten at main meals yesterday appropriate for child's age?	Child 7-8 months gradually need a bit more than half a 200ml tea cup, 9-11 months - ¾ of a tea cup, 12-23 months - a bit more than a full cup at each meal	A growing child needs an increasing amounts of food
Mother assisted the child at meals times?	Yes, assists with encouraging self feeding	A young child needs to learn to eat: encourage and give help..... with lots of patience
Child took any vitamin or mineral supplements?	Supplementation may be needed if requirements not met by food intake	*Explain how to use vitamin and mineral supplementations if they are needed*
Child ill or recovering from an illness?	Continue to eat and drink during illness and recovery	Encourage the child to drink and eat during illness and provide extra food after illness to help them recover quickly

Annex – 3

A **gradual** increase in weight is advised as there is a risk of developing chronic diseases like diabetes and hypertension in adult life if a rapid weight gain is achieved within a short span of time.

Annex – 4

Children should be prevented from becoming obese due to several reasons.

- Delay in gross motor development
- Obese children are usually less active; which in tern contributes to their being more obese
- They will become obese adults later in life
- Such children are very much at risk of developing chronic diseases such as hypertension, diabetes, coronary heart disease and chronic liver disease (NASH) in adult life

Annex – 5

Commonly obesity in children is due to nutritional imbalance (increase caloric intake and /or less burning of calories). However rarely it could be due to a disease. Usually in nutritional obesity the child will be taller than the average child of the same age. Both height and weight centiles would be in close range.

There may be few features that would suggest a non nutritional cause. Some clinical features that would suggest a genetic syndrome or having any other underlying illness as the cause of obesity are;

- Short stature
- Onset of obesity under 2 years of age
- Dysmorphic features
- Microcephaly
- Learning disability/ developmentally retarded
- Hypotonia
- Hypogonadism
- Eye abnormalities
- Skeletal abnormalities
- Sensoneural deafness
- Congenital defects such as congenital heart disease, renal abnormalities
- Features of hypothyroidism, hypercortisolism or growth hormone deficiency

When an obese child is suspected to have a non nutritional cause for its obesity, he/she should be referred to a paediatrician for evaluation.