Arab Republic of Egypt

Egyptian Pediatric Clinical Practice Guidelines Committee (EPG)
Clinical Nutrition Group

Evidence-Based Clinical Practice Guideline for the Prevention and Management of Wasting and Nutritional Edema (Acute Malnutrition) in Infants and Children Under 5 Years

Adapted with permission from

WHO guideline updates on the management of severe acute malnutrition in infants and children (2013)

WHO guideline on the prevention and management of wasting and nutritional edema (acute malnutrition) in infants and children under 5 years (2023)

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Disclaimer

Clinical Practice Guidelines (CPGs) are "systematically developed statements to assist health care professionals and patients in medical decision-making for specific clinical conditions" or they are "statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options". It is in no way a substitute for a medical professional's independent judgment. Most of the content herein is based on literature reviews. In areas of uncertainty, professional judgment was applied.

This CPG is a working document that reflects the state of the art in the field and is based upon the accessible best-updated published evidence. Because rapid changes in this area are expected, periodic revisions are inevitable. We encourage medical professionals to use this information in conjunction with, and not as a replacement for, their best clinical judgment. The presented recommendations may not be appropriate in all situations. Any decision by practitioners to apply these guidelines must be made considering local resources and individual patient circumstances.

The members of the Wasting and nutritional edema Guidelines Adaptation Group (WGDG) and the external review committee receive no honoraria or expenses to attend the scientific review meetings, nor for the many hours spent reviewing the literature, appraising the guidelines, designing the implementation tools, and contributing to the writing of the report.

Intellectual Property Rights

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Abbreviations

AGREE II	Appraisal of Guidelines for Research and Evaluation Instrument
CPG	Clinical Practice Guideline
DHS	Demographic and Health Survey
EBF	Exclusive Breast Feeding
EDHS	Egyptian Demographic and Health Survey
EPG	Egyptian Pediatrics Clinical Practice Guidelines Committee
EPG CPG	EPG Clinical Practice Guideline
GDG	Guideline Development Group
GPS	Good Practice Statement
GRADE	Grading of Recommendations Assessment, Development and Evaluation
IBF	Initiating Breast Feeding
MUAC	mid-upper arm circumference
ORS	oral rehydration solution
PICO	population, intervention, comparison, outcomes

ReSoMal	Rehydration Solution for Malnourished children
RIGHT	A Reporting Tool for Practice Guidelines in Health Care
RUSF	ready-to-use supplementary food
RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition
SD	standard deviations
SFF	specially formulated food
WAZ	weight-for-age z-score
WGAG	Wasting Guideline Adaptation Group
WHO	World Health Organization
WHZ	weight-for-height z-score
WLZ	weight-for-length z-score

Glossary

Admission

Admission, for the purpose of this guideline, refers to a child being registered and entering inpatient care as a patient. This is distinguished from the term "enrolment", which is used for outpatient care.

Anthropometric recovery

For the purpose of this guideline, this refers to weight-for-height (WHZ)/weight-for-length (WLZ) z-score equal to or greater than 2 standard deviations (SD) below the WHO child growth standards median (WHZ or WLZ $\geq$ -2) and a mid-upper arm circumference (MUAC) equal to or greater than 125mm (in children 6-59 months) observed for at least 2 consecutive outpatient care visits. Before any decisions can be made regarding exit from nutritional treatment these anthropometric measurements need to be accompanied by an assessment of nutritional edema: a child must also be free of nutritional edema for at least two consecutive visits to meet exit criteria.

Caregiver

For the purpose of this guideline, a caregiver refers to a person, often a family member, who provides direct and regular care and support to an infant or child. This term is used in this guideline to emphasize that the father and other family members or non-related people can play a vital role in looking after children, in addition to (or even instead of) the mother; this may be even more relevant as the child grows older and is less likely to be breastfed.

Discharge

For the purpose of this guideline, discharge refers to a child finishing their inpatient care and leaving to go back home. This is distinguished from the term "exit" which is used for outpatient care.

Enrolment

For the purpose of this guideline, enrolment refers to a child being registered into outpatient care where nutritional supplementation or treatment is provided on a regular basis (see outpatient care). This is different to the term "admission" which is used for inpatient care.

Exit

For the purpose of this guideline, exit refers to a child finishing their nutritional treatment or supplementation and no longer attending outpatient care. This is distinguished from the term "discharge" which is used for inpatient care.

Health professionals

Health professionals' study, advise on or provide preventive, curative, rehabilitative and promotional health services based on an extensive body of theoretical and factual knowledge in diagnosis and treatment of disease and other health problems. They may conduct research on human disorders and illnesses and ways of treating them and supervise other workers. The knowledge and skills required are usually obtained as the result of study at a higher educational institution in a health-related field for a period of 2–7 years leading to the award of a first degree or higher qualification. Health professionals include doctors, nurses, midwives, physiotherapists, dentists, paramedical practitioners.

Health workers

Health workers make up the health workforce and are people engaged to deliver health care to individuals and populations as part of the health system. Health workers are divided up into five main categories: health professionals, health associate professionals, personal care workers in health services, health management and support personnel, and other health service providers not elsewhere classified.

Infants at risk of poor growth & development

Infants less than 6 months who are not growing well before they meet the criteria of wasting and/or nutritional edema.

Inpatient care

For the purpose of this guideline, inpatient care refers to medical care, nutritional supplementation or treatment, and feeding support (for both breastfed and non-breastfed infants) which is delivered in a health facility involving the child staying for one or more nights in the health facility itself.

Moderate acute malnutrition (MAM)

- WHZ or WLZ < -2 and/or
- MUAC ≥ 115 and <125mm and
- No nutritional edema.

Mother/caregiver-infant

This term is used predominantly in relation to infants less than 6 months of age to highlight the importance of providing services for the mother/caregiver-infant pair together with a holistic approach encompassing all their physical and mental health and nutrition needs and recognizing the interdependence of this unit, especially in the early months of an infant's life.

Nutrient-dense foods

Nutrient-dense foods are those high in nutrients relative to their caloric content that is they have a relatively high content of vitamins, minerals, essential amino acids and healthy fats. Examples of nutrient-dense foods include animal-source foods, beans, nuts, and many fruits and vegetables.

Nutritional supplementation (for moderate wasting)

For the purposes of this guideline, nutritional supplementation is used to describe the regular outpatient services, whereby infants and children with moderate wasting receive medical care and nutritional supplementation to achieve clinical and anthropometric recovery, as well as referring them to ongoing appropriate preventative and supportive services if needed and possible.

Nutritional treatment (for severe wasting and/or nutritional edema)

For the purpose of this guideline, nutritional treatment is used to describe the regular outpatient services, and potentially inpatient services (if needed), whereby infants and children with severe wasting and/or nutritional edema receive therapeutic milk or ready-to-

use therapeutic food (RUTF) to help achieve anthropometric recovery and the resolution of nutritional edema. Nutritional treatment should always be delivered alongside medical care and referral to appropriate preventive and supportive services as needed.

Outpatient care

For the purpose of this guideline, outpatient care refers to medical care, nutritional supplementation or treatment (for children 6-59months) and feeding support (for both breastfed and non-breastfed infants) which is delivered in a health facility, and which does not require an overnight stay, but involves regular appointments (often referred to as visits) with a health worker until the child reaches clinical and anthropometric recovery. This health worker could be a health professional such as a doctor or nurse, or a health associate professional such as a community health care worker.

Psychosocial stimulation

Psychosocial stimulation can be defined as the sensory information received from interactions with people and environmental variability that engages a young child's attention and provides information; examples include talking, smiling, pointing, enabling, and demonstrating, with or without objects. This also includes responsive feeding as a part of responsive caregiving.

Ready-to-use supplementary food (RUSF)

RUSF is a fortified lipid-based paste/spread used for the supplementation of children with moderate wasting. It should not be used for the nutritional treatment of severe wasting and/or nutritional edema.

Ready-to-use therapeutic food (RUTF)

RUTF is a food for special medical purposes (Codex Alimentarius) and includes pastes/spreads and compressed biscuits/bars used for the nutritional treatment of children with severe wasting and/or nutritional edema.

Referral

Referral, for the purpose of this guideline, refers predominantly to a child being referred to inpatient care from outpatient care. A malnourished child might however also get referred to other services such as HIV or TB (tuberculosis) care) for follow-up.

Severe acute malnutrition (SAM)

- Nutritional edema and/or
- WHZ or WLZ < -3 and/or
- MUAC <115mm

Specially formulated foods (SFFs)

For the purpose of this guideline, specially formulated foods are defined as foods that have been specifically designed, manufactured, distributed, and used for either: special medical purposes or for special dietary uses, as defined by Codex Alimentarius.

Transfer (from inpatient to outpatient care)

For the purpose of this guideline, transfer describes the patient movement when a child is discharged from inpatient care to finish their nutritional treatment in outpatient care. They usually go home from the hospital and then attend an outpatient center/clinic for nutritional treatment at a later date and then regularly until clinical and anthropometric recovery.

Executive Summary

Introduction

There is rising risk of wasting and nutritional edema in infants and children, especially in high-risk contexts and ongoing crises as climate change and regional conflicts with expected increase of numbers of refugees, where health and socioeconomic factors are the poorest.

Despite that the national prevalence of wasting in under 5 children is 3% in 2021, there is higher prevalence in some Egyptian governorates, as South Sinai 15.9%, Aswan 14.1%, Suez 10.7%, Luxor 8.8%, Qalioubiya 6.8%, Cairo 5.4%, Giza 4.8% and Assuit 4.5%.

This guideline is adapted with permission from "WHO guideline on the prevention and management of wasting and nutritional edema (acute malnutrition) in infants and children under 5 years 2023"and "WHO guideline updates on the management of severe acute malnutrition in infants and children 2013" to help in achieving global targets for wasting and nutritional edema including Sustainable Development Goal 2 to reach "Zero Hunger" by 2030.

Scope

This guidelinefocusses on prevention and management of acute malnutrition in under five infants and children with special consideration of infants less than 6 months of age at risk of poor growth and development, moderate wasting in infants and children 6-59 months of age, severe wasting and nutritional edema in infants and children 6-59 months of age, and prevention of wasting and nutritional edema from a child health perspective.

Guideline development process and methods

After reviewing all the inclusion and exclusion criteria the GDG & methodologists recommended using 2 guidelines:

1- WHO guideline updates on the management of severe acute malnutrition in infants and children
(2013)

2- WHO guideline on the prevention and management of wasting and nutritional edema (acutemalnutrition) in infants and children under 5 years (2023)

We did Adolopment for these guidelines: (Adoption, Adaptation, and Development)

- Adoption for most of the guideline recommendations.
- Adaptation for 2 recommendation according to GRADE criteria to be suitable to our Economic implications (Evidence to Decision (EtD) table was done)
- Development of Good Practice Statement

Recommendations and good practice statements

This version of the guideline includes recommendations and good practice statements on the following four sub-sections:

A. Management of infants less than 6 months of age at risk of poor growth and development

The guideline covers infants less than 6 months who are not growing well, before they meet criteria for wasting and/or nutritional edema and consider the mother and infant as an interdependent unit.

This guideline emphasis on early identification and then provide appropriate immediate care or referral for both the infant and the mother/caregiver preventing later wasting and/or nutritional edema.

This section includes recommendations and good practice statements on interventions for mothers/caregivers of infants at risk of poor growth and development, admission, referral, transfer, and exit criteria for infants at risk of poor growth and development, management of breastfeeding/lactation difficulties in mothers/caregivers of infants at risk of poor growth and development, supplemental milk for infants at risk of poor growth and development and use of antibiotics for infants at risk of poor growth and development.

B. Management of infants and children 6-59 months with wasting and/or nutritional edema

This section includes recommendations and good practice statements on admission, referral, transfer and exit criteria for infants and children with severe wasting and/or nutritional edema, identification of dehydration in infants and children with wasting and/or nutritional edema, rehydration fluids for infants and children with wasting and/or nutritional edema and dehydration but who are not shocked, ready-to-use therapeutic food for treatment of severe wasting and/or nutritional edema, dietary management of infants and children with moderate wasting and vitamin A supplementation in the treatment of children with severe acute malnutrition

C. Post-exit interventions after recovery from wasting and/or nutritional edema

D. Prevention of wasting and nutritional edema

We can summarize the guidelines for management of acute malnutrition in the following:

- Nutritional status must not be seen in isolation. Assessment of an infant's or child's health and developmentalstatus (including triage and emergency care) is key for any decision-making for nutritional care and decisionson where this should be delivered.
- Mothers and their infants less than six months at-risk of poor growth and development must be identified earlyand cared for as an inter-dependent unit. Effective and culturally appropriate care—especially for breastfeedingsupport—is vital for their current health as well as one of the most important preventative actions to reducethe prevalence of wasting and/or nutritional edema in later infancy and childhood.
- Not all children with moderate wasting need a specially formulated food to supplement their diet. All childrenwith moderate wasting need a health assessment to rule out medical problems that could be the cause or maindriver of the moderate wasting. They also need access to a nutrient-dense home diet to meet their energeticand nutrient needs.
- Some children with moderate wasting are at greater risk of mortality and non-recovery than others. These riskfactors are related to whether they live in a high-risk context (such as humanitarian crises) as well as specificindividual or social factors. These factors can be used to consider which children should be prioritized overothers to receive specially formulated foods (SFFs) which can be ready-to-use therapeutic food (RUTF), ready to use supplementary food (RUSF) or an improved fortified blended food to supplement their home diet.
- Children with severe wasting and/or nutritional edema should receive nutritional treatment with an RUTFthat meets the Codex specification. The amount given can be either constant until anthropometric recovery orreduced if it is safe and appropriate to do so.
- Community Health Workers can manage children 6-59 months of age with wasting and/or

nutritional edema inthe community as long as they are adequately trained and receive ongoing supervision and support.This includes nutritional supplementation or treatment and medical care as appropriate to the context.

Introduction

Undernourished children have weakened immunity and impaired cognitive function, which leads to their poor health outcomes, loss of future productivity, and low academic performance, [1] extrahealthcare expenditures and opportunity costs related to the care of sick children [2]. Consequently, under- nutrition is responsible for almost half (45%) of all deaths in under 5 children worldwide. Annually, 8 million deaths are anticipated to be caused by wasting, with severe wasting responsible for 60% of these deaths in low- and middle-income countries [3].

According to the Joint Child Malnutrition Estimates, 45 million infants and children under 5 experienced wasting in 2022; an estimated 13.7 million infants and children under 5 had severe wasting and the remainder had moderate wasting [4]. The risk of wasting and nutritional edema in infants and children, particularly in high-risk contexts where health and socioeconomic indicators are at their poorest [5].

The Egyptian Demographic and Health Survey of (EDHS) 2014 revealed the prevalence of wasting among under-5 children to be 8.4% (up from the reported 7.2% in the 2008 DHS) with 3.8% having severe wasting [6]. Despite that the national prevalence of wasting in under 5 children is 3% in 2021, there is higher prevalence in some Egyptian governorates, as South Sinai 15.9%, Aswan 14.1%, Suez 10.7%, Luxor 8.8%, Qalioubiya 6.8%, Cairo 5.4%, Giza 4.8% and Assuit 4.5% [7].

During the early years of life nutrition is fundamental for child health and development [8]. The World Health Organization (WHO) recommends breastfeeding initiation within an hour of birth, exclusive breastfeeding for the first 6 months of life and breastfeeding continuation thereafter [9]. Egypt’s 2014 Demographic and Health Survey (EDHS) reported that 27% of mothers-initiated breastfeeding early (IBF) during the first hour after delivery and that only 13% were exclusively breastfeeding their child (EBF) until the age of four or five months, which is almost a 50% decline from the 2008 rates [6].Breastfeeding difficulties are of the main cofactors for the high prevalence of malnutrition.Egypt Family Health Survey 2021 reported that IBF during the first hour after delivery rise a little to 32.8% and 20.7% exclusive breastfeeding for 4-5 months of age [7].This is simple practical guideline for healthcare professionals to manage the emergency situation of refugees that are crossing from different borders of the country.

Identification of acutely malnourished children is thus a priority for timely treatment and ultimately to avoid child illness and death.

This guideline is intended to help and improve the health situation in Egypt in a trial to cope with the global goal to reduce wasting prevalence in high prevalence governorates to 5% by 2025 and 3% by 2030 [10,11]

Purpose&Scope

These guidelines have been developed to standardize the delivery of services and to implement the guidance on the prevention, diagnosis and management of wasting and nutritional edema in infants and children less than 5 years. It provides guidance to primary health care providers, pediatricians and specially trained nurses.

The guidelines aimed to improve early case detection and referral, case management of mild, moderate and severe malnutrition. As a sequence,there will bean improvementin the physical & mental health which is usually reflected on scholastic performance & productivity with decrease the health care cost.
This version of the guideline includes recommendations and good practice statements for infants less than 6 months of age at risk of poor growth and development (within which infants with wasting and/or nutritional edema are a subset); moderate and severe wasting in infants and children 6-59 months of age and prevention of wasting.

- ***Management of infants less than 6 months of age at risk of poor growth and development***

Infants at risk of poor growth and development should include infants less than 6 months of age in any of the following categories with any of the following criteria:

- ✓ **Infants with poor growth based on sequential measures**
- No weight gain or weight loss from one measurement to the next; or
- Downward crossing of weight-for-age centile lines; or
- Insufficient weight gain (velocity standards or grams/per specific time period).
- ✓ **Infants with poor anthropometry based on a single measure (if sequential measures not available)**
- Weight-for-age z-score (WAZ) < -2 SD; or
- Weight-for-length z-score (WLZ) < -2 SD; or
- Nutritional edema; or
- Mid-upper arm circumference (MUAC) < 110 mm for infants between 6 weeks to less than 6 months of age.
- ✓ **Infants with known risk factors for poor growth and development**
- Neurodevelopmental concerns; or
- Infant feeding concerns; or
- Maternal risk (physical or mental health problem(s) affecting caring practices); or
- History of hospitalization.
- ✓ **Infants at risk due to poor birth outcomes**
- Preterm birth; or
- Low birth weight; or
- Small for gestational age.

Acute malnutrition in children under 5 years of age is defined in this guideline as having a weight-for-height or weight-for-length z-score more than 2 SD below the median of the WHO child growth standards (WHZ or WLZ < -2) or having nutritional edema. A MUAC less than 125mm can be used as an alternative measure to define acute malnutrition alongside weight-for-height and nutritional edema.

Nutritional edema is bilateral pitting edema which starts in the feet and can progress up to the legs and the rest of the body, including the face. It is pathognomonicof severe acute malnutrition. Clinical assessments for undernutrition should include an assessment for nutritional edema. Acute malnutrition may be further sub-classified to:

- ***Moderate wasting in infants and children 6-59 months of age***

Weight-for-height or weight-length z-score greater than or equal to 3 and less than 2 SD below the WHO child growth standards median (WHZ or WLZ ≥-3 and <-2 SD) (or MUAC ≥115mm to <125mm as an alternative field measure).

- ***Severe wasting and nutritional edema in infants and children 6-59 months of age***

Weight-for-height or weight-for-length z-score greater than 3 SD below the WHO child growth standards median (WHZ or WLZ <-3 SD) (or mid-upper arm circumference (MUAC) <115mm as an alternative field measure) and/or nutritional edema.

- ***Prevention of wasting and nutritional edema***

It includes recommendation and good practice statements about individual and community approaches for prevention of wasting and nutritional edema. These approaches may differ greatly by setting, context, and other factors.

Methods

Methods of search:
A comprehensive search for guidelines was undertaken to identify the most relevant guidelines toconsider for adaptation. Using keywords: Management, nutritional edema, wasting, and children under 5 years.
Inclusion / exclusion criteria followed in the search and retrieval of guidelines to be adapted:
• Selecting only evidence-based guidelines (guideline must include a report on systematic literature
searches and explicit links between individual recommendations and their supporting evidence)
• Selecting only national and/or international guidelines
• Specific range of dates for publication (using Guidelines published or updated 2013 and later)
• Selecting peer reviewed publications only
• Selecting guidelines written in English language
• Excluding guidelines written by a single author not on behalf of an organization to be valid andcomprehensive, a guideline ideally requires multidisciplinary input.
• Excluding guidelines published without references as the panel needs to know whether a thoroughliterature review was conducted and whether current evidence was used in the preparation of therecommendations.
All retrieved Guidelines were screened and appraised using AGREE II instrument (www.agreetrust.org) by at least two members. The panel decided a cut-off point or rank the guidelines (any guideline scoring above 60% on the rigor dimension was retained)
After reviewing all the previous criteria the GDG & methodologists recommended using 2 guidelines:
1- WHO guideline updates on the management of severe acute malnutrition in infants and children
(2013)

2- WHO guideline on the prevention and management of wasting and nutritional edema (acute
malnutrition) in infants and children under 5 years (2023)
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- Adoption for most of the guideline recommendations.
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- Development of Good Practice Statement

Contributors to the guideline development process:

Guideline Development Group (GDG):

The GDG for the guideline on prevention and management of wasting and nutritional oedema (acute
malnutrition) included experts with a range of technical skills and diverse perspectives in the field of clinical nutrition.
The main functions of the GDG were adolopment of WHO guidelines for wasting and undernutrition (2013& 2023), determining the scope of the guideline and guideline, reviewing the evidence, and formulatingevidence-informed recommendations in case of changing strength of recommendations.

Guideline Methodologists:

There were 6 guideline methodologists with expertise in guidelines development, GRADE and translationof evidence into recommendations. Methodologists provided orientation and overview of evidence-informed guideline development processes using the GRADE approach & also, provided AGREE IIassessment of the source guidelines in conjunction with CDG..

External Review Group:

The External Review Group for this guideline comprises 3 clinical experts who have interest and
expertise in the prevention and treatment of wasting and/or nutritional oedema in infants and children as well as representative of WHO and UNICEF Organizations.They were identified by Egyptian Pediatric Clinical Practice Guidelines Committee (EPG) as people whocan provide valuable insights during the guideline development process.
The External Review Group was asked to comment on (peer review) the final guideline to identify any criticism on the content and to comment on clarity and applicability as well as issues relating to implementation, dissemination,ethics, regulations, or monitoring, but not to change the recommendations formulated by the GDG. Themembers of the External Review Group were required to submit declarations of interest before the peerreview process.

Guideline Development Group meetings:

GDG meetings were organized virtually twice weekly. Due to the extensive scope of the guideline, EPG Chair was responsible for the timetable and objectives of each meeting. GDG meetingswere also attended by members of the methodologists and systematic. Working rules for each contributor type were outlined by the chair at the start of eachmeeting, covering aspects such as vocal rights, voting, and evidence to decision and recommendationformulating processes.

Declarations of interests:

Prospective members of the GDG were asked to fill in and sign the standard WHO declaration of interestand confidentiality undertaking forms. All guideline members and methodologists were also asked to fillin and sign the standard WHO declaration-of-interests. Members of the external review group will be asked to fill in and sign the standard WHO declaration-

of-interests form before the peer review process.

Evidence for the guideline:
We used the GRADE system (Grading of Recommendations, Assessment, Development and Evaluation) for assigning the quality of evidence and strength of recommendations that includes the following definitions [13]. Informed by the evidence required for the GRADE Evidence to Decision (EtD) table was done while considering changingstrength of recommendations according to availability of some resources in the recommendations (we didthis for only 2 recommendations).
Description of the interpretation of the GRADE four levels of certainty of evidence:

Table 1. Classification of the Quality of Evidence

High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate; the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited; the true effect may be substantially different from the estimate of the effect.
Very Low	We have very little confidence in the effect estimate; the true effect is likely to be substantially different from the estimate of the effect.

GRADE EtD criteria and considerations that link to the strength of recommendations:
Criteria Considerations:
Benefits and harms: When a new recommendation is developed, desirable effects (benefits) need to be weighedagainst undesirable effects (risks/harms), considering any previous recommendation or
another alternative. The larger the gap or gradient in favor of the desirable effects over the undesirable effects, the more likely that a strong recommendation will be made.

Certainty of theevidence about the effects: The higher the certainty of the scientific evidence base, the more likely that a strong will be made.

Values andpreferences: If there is no important uncertainty or variability in how much people value the mainoutcomes, it is likely that a strong recommendation will be made. Uncertainty or variability
around these values that could likely lead to different decisions, is more likely to lead to a conditional recommendation.

Economicimplications: Lower costs (monetary, infrastructure, equipment or human resources) or greater cost-effectiveness are more likely to support a strong recommendation.

Equity and humanrights: If an intervention will reduce inequities, improve equity or contribute to the realization ofhuman rights, the greater the likelihood of a strong recommendation.

Feasibility: The greater the feasibility of an intervention to all stakeholders, the greater the likelihood ofa strong recommendation.

Acceptability: If a recommendation is widely supported by health workers and program managers andthere is widespread acceptance for implementation within the health service, the likelihood
of a strong recommendation is greater.

Table 2. Classification of the Strengths of Recommendations

Strong	The desirable effects of an intervention clearly outweigh the undesirable effects (or vice versa), so most patients should receive the recommended course of action.
	There is uncertainty about the trade-offs. The clinician and patient need to discuss the patient's values and preferences, and the decision should be individualized.

Developing good practice statements:
The GDG also developed good practice statements for this guideline, which are actionable messages relevant to theguideline questions. The justification for each good practice statement was carefully considered by the GDG with anemphasis that they are clearly needed. Good practice statements were developed, guided by the following GRADEcriteria:
1- Message is really necessary with regard to actual healthcare practice
2- Have large net positive consequence (relevant outcomes and downstream consequences) (GRADE EtDdomains)
3- Collecting and summarizing the evidence is a poor use of time and resources
4- Include a well-documented, clear rationale connecting indirect evidence
5- Are clear and actionable statements.
The GDG collectively drafted and finalized good practice statements with relevant justifications and remarks to helpwith their interpretation, with close support and input from the consultant and guideline methodologists.

Recommendations

Table 3. Recommendations

A. **Management of infants less than 6 months of age at risk of poor growth and development**			
N	**Health questions**	**Source Guideline**	**Recommendations** *(Quality of evidence, Strength of Recommendation)*
A1	**Interventions for**	GDG	**Good practice statement**

	mothers/caregivers of infants at risk of poor growth and development In mothers/caregivers of infants less than 6 months at risk of poor growth and development, What interventions can guarantee the best health outcome for both of them?		A1. Mother/caregiver and infant should be considered as inter- dependent pair. They should receive regular care and monitoring by health professionals in the form of: 1. Medical and anthropometric assessment for Infants less than 6 months of age at risk of poor growth and development to a. Achieve early detection of any acute medical problems and appropriate intervention, and b. Enable these infants to grow and develop in a healthy way 2. Maternal/caregiver Comprehensive assessment and support are recommended to ensure maternal/caregiver physical and mental health and well-being
Admission, referral, transfer, and exit criteria for infants at risk of poor growth and development.			
A2	a) In infants less than 6 months at risk of poor growth and development, what are the criteria that best inform the decision for referral to treatment in an inpatient setting? b) In infants less than 6 months at risk of poor growth and development, what are the criteria that best inform the decision for an in-depth assessment to consider if they need inpatient admission or outpatient management?	WHO 2023	Conditional recommendation, Low certainty evidence A2. **a)** Infants less than 6 months of age at risk of poor growth and development who have any of the following characteristics should be referred and admitted for **inpatient care:** i. one or more Integrated Management of Childhood Illness (IMCI) danger signs** ii. acute medical problems or conditions under severe classification as per IMCI*** iii. edema (nutritional) iv. recent weight loss. **b)** Infants less than 6 months of age at risk of poor growth and development who do not meet any of the criteria from part a should have an **in-depth assessment to consider if they need inpatient admission or outpatient management** based on clinical judgement if they have any of the following characteristics:**** i. medical problems that do not need immediate inpatient care, but do need further examination and investigation (e.g. HIV-related complications); ii. medical problems needing mid or long-

	c) In infants less than 6 months at risk of poor growth and development, what are the criteria that best inform the decision to initiate treatment in an outpatient/community setting?		term follow-up care and with a significant association with nutritional status (e.g. congenital heart disease, HIV, tuberculosis, cerebral palsy or other physical disabilities); iii. specific anthropometric criteria from the list of criteria used to identify infants at risk of poor growth and development: WAZ <-2 SD, WLZ <-3 SD, MUAC <110mm for infants less than 6 months of age, failure to gain weight based on two consecutive measurements. iv. ineffective breastfeeding (e.g. attachment, positioning, suckling reflex) or perceived breastmilk insufficiency. v. feeding concerns for non-breastfed infants (e.g. inappropriate and unsafe use of breastmilk substitutes for replacement feeding, milk refusal); vi. any maternal-related or social issue needing more detailed assessment or intensive support (e.g. disability, depression of the caregiver, absent mother, adolescent mother, or other adverse social circumstances). **c)** Infants less than 6 months of age at risk of poor growth and development who have all the following characteristics should be enrolled and managed as **outpatients**: i. no danger signs or/ any of the criteria from (**part a)** needing inpatient admission. ii. no criteria needing in-depth assessment (**part b)** or when criteria from part b are present but an in-depth assessment has been completed and determined that no inpatient admission is needed (Feeding problems that can be managed in outpatient care, diarrhea with no dehydration, respiratory infections with no signs of respiratory distress, malaria with no signs of severity)
A3	In infants less than 6 months at risk of poor growth and development admitted	WHO 2023	Strong recommendation for, Moderate certainty evidence **A3.** Infants less than 6 months of age at risk of poor growth and development who are admitted

	for inpatient treatment, what are the criteria that best inform the decision for transfer to outpatient/community treatment?		for **inpatient care can be transferred to outpatient care** when: i. there have been no danger signs for at least 48 hours prior to transfer time; and ii. all acute medical problems are resolved; and iii. nutritional edema is resolving; and iv. the infant has good appetite; and v. documented weight gain for at least 2-3 days is satisfactory on either exclusive breastfeeding or replacement feeding; and vi. refer the infants with medical problems needing mid or long-term follow-up care and with a significant association with nutritional status to appropriate care/support services and/or the limits of inpatient care have been reached; and vii. the infant has been checked for immunizations and other routine interventions delivered or plans made for follow-up; and viii. the mothers/caregivers are linked with needed follow-up care and support (e.g. for any health, mental health or social issues identified during assessment).
A4	In infants less than 6 months at risk of poor growth and development receiving outpatient/community treatment, what are the criteria that best inform the decision for exit from outpatient/community treatment?	WHO 2023	Conditional recommendation for, Very low certainty evidence **A4. a)** Infants less than 6 months of age at risk of poor growth and development can have a **reduced frequency of outpatient visits** when they: i. are breastfeeding effectively or feeding well with replacement feeds, and ii. have sustained weight gain[#] for at least 2 consecutive weekly visits. **b)** Infants less than 6 months of age at risk of poor growth and development should be assessed (including assessment of their anthropometry) once they reach 6 months of age to determine if they need i. An ongoing follow-up **or** ii. A referral to services for **infants 6**

			months of age and older (including nutritional treatment/supplementation) as appropriate according to their clinical and nutritional status##
A5	**Management of breastfeeding/lactation difficulties in mothers/caregivers of infants at risk of poor growth and development** In mothers/caregivers of infants less than 6 months at risk of poor growth and development who are experiencing difficulties with breastmilk intake, which interventions to manage difficulties with breastfeeding/lactation can improve breastfeeding practices and increase breastmilk intake?	**WHO 2023**	Good practice statement **A5.** For infants less than 6 months of age at risk of poor growth and development, health care providers should conduct comprehensive assessments of the mother/caregiver-infant pair and follow best practices for the management of breastfeeding/lactation challengesand underlying factors contributing to these challenges. Preferably by lactation consultant
A6	**Supplemental milk for infants at risk of poor growth and development** In infants less than 6 months at risk of poor growth and development, which criteria best determine if an infant should be given a supplemental milk (in addition to breastmilk if the infant is breastfed) and when?	**WHO 2023**	Good practice statement **A6.** Decisions about whether an infant less than 6 months of age at risk of poor growth and development needs a supplementary milk in addition to breastfeeding must be based on i. A Comprehensive assessmentof themedical, nutritional/ feeding needs+of the infant as well as, ii. The physical and mental health of the mother/caregiver. This applies to infants who are enrolled in outpatient care or admitted into inpatient care.
A7	In infants less than 6 months of age with severe wasting and/or nutritional edema, what is the most effective supplemental milk (donor human milk, human milk from wet nurse, commercial	**WHO 2023**	Strong recommendation for, very low certainty evidence **A7.** Infants who are less than 6 months of age with severe wasting and/or nutritional edema who are admitted for inpatient care: a) should be breastfed where possible and the mothers or female caregivers should be supported to breastfeed the infants. If an infant is not breastfed,

	infant formula, F-75, F-100, or diluted F-100) and for how long should these be given?		support should be given to the mother or female caregiver to re-lactate. If this is not possible, wet nursing should be encouraged. b) should also be provided a supplementary feed: - supplementary suckling approaches should, **where feasible**, be prioritized. - for infants with severe wasting but no edema, expressed breast milk should be given, and, where this is not possible, commercial (generic) infant formula or F-75 or diluted F-100^{++}may be given, either alone or as the supplementary feed together with breast milk. - for infants with edema, commercial (generic) infant formula or F-75 should be given as a supplement to breast milk. - c) should not be given full-strength F-100^{++}if they are clinically unstable less 6 month and/or have diarrhea or dehydration and/or nutritional edema - d) should, if there is no realistic prospect of being breastfed, be given appropriate and adequate replacement feeds such as commercial (generic) infant formula, with relevant support to enable safe preparation and use, including at home when transferred from inpatient care.
A8	**Antibiotics for infants at risk of poor growth and development** In infants less than 6 months at risk of poor growth and development, should an antibiotic be routinely given?	**WHO 2013**	Strong recommendation against, Low certainty evidence **A8.** Children who are undernourished but who do not have severe wasting and/or nutritional edema should not routinely receive antibiotics unless they show signs of clinical infection.

Remarks on recommendations

**IMCI danger signs include not able to drink or breastfeed; vomits everything; had convulsions recently; lethargic or unconscious; convulsing now.

*** Acute medical problems (as per IMCI classification) which need referral to inpatient care include signs of possible serious bacterial infection in infants less than 2 months of age

a. Shock
B. Oxygen saturation <90%
C. Pneumonia (with chest indrawing; and/or fast breathing; and if possible to measure, oxygen saturation <94%)
D. Dehydration (including some or severe dehydration)
E. Severe persistent diarrhoea (diarrhoea for 14 days or more plus dehydration)
F. Very severe febrile illness – in a malaria zone or with a positive rapid diagnostic test (rdt), this is treated as severe malaria.
G. Very severe febrile illness – where there is no risk of malaria or with a negative rdt, this is treated as bacterial disease, e.g. Meningitis, etc.
H. Severe complicated measles
I. Mastoiditis
J. Severe anemia (severe palmar pallor or as per age-associated hemoglobin levels)
K. Severe side effects from antiretroviral therapy (for hiv) – skin rash, difficulty breathing and severe abdominal pain, yellow eyes, fever, vomiting.
L. Open or infected skin lesions associated with nutritional edema.
M. Other stand-alone 'priority clinical signs' not classified as dangers signs: hypothermia (<35°C axillary or 35.5°C rectal) or high fever (≥38.5°C axillary or 39°C rectal)

**** In depth assessment and clinical judgment of qualified physicians

#sustained weight gain: approximately more than 150-200 g/week in birth to 3 months, and 3 to 6 months approximately less than 100-150 g / week

An infant at 6 months of age or older who meets anthropometric and clinical criteria of moderate wasting or severe wasting and/or nutritional edema should be referred to the appropriate services for medical management (if needed), health and nutrition education and counselling, nutritional supplementation (if appropriate) or nutritional treatment.
Other ongoing follow-up or referral for this group of infants could be routine vaccination services, regular infant and young child feeding services, breastfeeding support, specialized medical services for congenital diseases or disabilities, outpatient management of HIV or tuberculosis, psychological support for the mother/caregiver, social protection services, etc.

+Feeding assessments should include the following domains: infant and mother/caregiver health status (including assessing for disabilities), maternal responsiveness to infant cues, for breastfeeding specifically: positioning, latching, sucking, and swallowing (noting that these aspects will vary with the age of the infant).

++Full strength F100 is therapeutic milk with renal solute load and risk of hyponatremic dehydration.

Table 4. Recommendations			
B. Management of infants and children 6-59 months with wasting and/or nutritional edema			
N	**Health questions**	**Source**	**Recommendations** *(Quality of evidence,*

		Guideline	*Strength of Recommendation)*
B1	**Admission, referral, transfer and exit criteria for infants and children with severe wasting and/or nutritional edema.** B1. In emergency health setting how to pick up **infants** and children 6-59 months old with severe wasting and/or nutritional edema	GDG	**Good practice statement** B1. Identification of nutritional status should be a vital component of initial assessment to pick up infants and children 6-59 months old with severe wasting and/or nutritional edema with emergency or danger signs receive immediate intervention. Others receive appropriate care as per their clinical status and classification
B2	a) In infants and children 6-59 months with wasting and/or nutritional edema, what are the criteria that best inform the decision for referral to treatment in an inpatient setting for wasting and/or nutritional edema? b) In infants and children 6-59 months, what are the criteria that best inform the decision for in depth assessment?	WHO 2023	**Conditional recommendation for, Low certainty evidence** B2. a) Infants and children 6-59 months old with severe wasting and/or nutritional edema who have any of the following characteristics should be referred and admitted for **inpatient** care: i. One or more Integrated Management of Childhood Illness (IMCI) danger signs ii. Acute medical problems iii. Severe nutritional edema (+++) iv. Poor appetite (failed the appetite test). b) Infants and children 6-59 months old with severe wasting and/or nutritional edema who do not meet any of the criteria from part a but who do have any of the following characteristics are likely to benefit from an **in-depth assessment** to inform the decision on possible referral to inpatient: * i. Medical problems that do not need immediate inpatient care, but do need further examination and investigation (e.g. bloody diarrhea, hypoglycemia, HIV-related complications); ii. Medical problems needing mid or long-term follow-up care and with a significant association with nutritional status (e.g. congenital heart disease, cerebral palsy or other disability, HIV, tuberculosis). iii. Failure to gain weight or improve clinically in outpatient

	c) In infants and children 6-59 months, what are the criteria that best inform the decision to initiate treatment in an outpatient/ community setting for wasting and/or nutritional edema?		care. iv. Previous episode(s) of severe wasting and/or nutritional edema. c) Infants and children 6-59 months old with severe wasting and/or nutritional edema who have all the following characteristics should be enrolled and managed as **outpatients:** i. Good appetite (passed the appetite test); and ii. No danger signs or any of the acute medical problems from part a ii; and iii.No criteria needing in-depth assessment (see part b) or criteria from part b present, but an in-depth assessment has been completed and no inpatient admission needed (e.g. diarrhea with no dehydration, respiratory infections with no signs of respiratory distress, malaria with no signs of severity).
Therapeutic feeding approaches in the management of severe acute malnutrition in children who are 6–59 months of age			
B3	In infants and children with severe wasting or edema, what is the inpatient therapeutic feeding approaches in management?	WHO 2013	Conditional recommendation, very low-quality evidence **B3. In inpatient settings, where ready-to-use therapeutic food is provided as the therapeutic food in the rehabilitation phase (following F-75 in the stabilization phase)** Once children are stabilized, have appetite and reduced edema and are therefore ready to move into the rehabilitation phase, they should transition from F-75 to ready-to-use therapeutic food over 2–3 days, as tolerated. The recommended energy intake during this period is 100–135 kcal/kg/day. The optimal approach for achieving this is not known and may depend on the number and skills of staff available to supervise feeding and monitor the children during rehabilitation Two options for transitioning children from F-75 to ready-to use therapeutic food aresuggested: a. start feeding by giving ready-to-use therapeutic food as prescribed for the transition phase. Let the child drink water freely. If the child does not take the prescribed amount of ready-to-use therapeutic food, then top up the feed with F-75. Increase the amount of ready-to-use therapeutic food over 2–3 days until the child takes the full requirement of ready-to-use therapeutic food, or

			b. Give the child the prescribed amount of ready-to-use therapeutic food for the transition phase. Let the child drink water freely. If the child does not take at least half the prescribed amount of ready-to-use therapeutic food in the first 12 h, then stop giving the ready-to-use therapeutic food and give F-75 again. Retry the same approach after another 1–2 days until the child takes the appropriate amount of ready-to-use therapeutic food to meet energy needs.
B4	In infants and children with complicated severe wasting or edema receiving F100 formula, When to change to ready to use therapeutic food?	WHO 2013	**Conditional recommendation, very low-quality evidence** **B4. In inpatient settings where F-100 is provided as the therapeutic food in the rehabilitation phase** Children who have been admitted with complicated severe acute malnutrition and are achieving rapid weight gain on F-100 should be changed to ready-to-use therapeutic food and observed to ensure that they accept the diet before being transferred to an outpatient program.
B5	If F100 or F 75 formula are not available, what formula is recommended to use?	GDG	**Good practice statement** B5. If F100 or F 75 formula are not available, other commercial formula could be used to fulfil the recommended caloric and protein requirement
B6	In infants and children with severe wasting or edema who are not tolerating F-75 or F-100, which formula can be used?	GDG	**Good practice statement** B6. In infants and children 6-59 months of age with severe wasting and/or nutritional edema who are not tolerating standard formula could be shifted to low lactose formulas and assessed for tolerance.
B7	**Ready-to-use therapeutic food for treatment of severe wasting and/or nutritional edema.** In infants and children 6-59 months with severe wasting and/or nutritional edema, what is the optimal quantity and duration of RUTF?	WHO 2023	**Conditional recommendation, Low certainty evidence** B7. In infants and children 6-59 months of age with severe wasting and/or nutritional edema who are enrolled in outpatient care, ready-to-use therapeutic food (RUTF) should be given in a quantity that will provide: •150-185 kcal/kg/day until anthropometric recovery and resolution of nutritional edema; or •150-185 kcal/kg/day until the child is no longer severely wasted and does not have

			nutritional edema, then the quantity can be reduced to provide 100-130 kcal/kg/day, until anthropometric recovery and resolution of nutritional edema
B8	In infants and children 6-59 months with severe wasting and/or nutritional edema, which formula to use if RUTF is not available?	GDG	**Good practice statement** B8. If RUTF is not available, available standard formula can be used with special consideration to protein and caloric content
B9	In infants and children 6-59 months admitted for inpatient treatment of wasting and/or nutritional edema, what are the criteria that best inform the decision for transfer to outpatient/community treatment?	WHO 2023	**Strong recommendation, for Moderate certainty evidence.** B9. a) Infants and children 6-59 months with severe wasting and/or nutritional edema who are admitted to inpatient care can be transferred to outpatient care when: i. They do not have any danger signs for at least 24-48 hours prior to transfer time; and ii. The medical problems that prompted their admission have resolved to the extent there is no longer requirement for inpatient care; and iii. They do not have ongoing weight loss (among children admitted with wasting only, who did not have nutritional edema at any time); and iv. Their nutritional edema is no longer grade +++ and is resolving; and v. They have a good appetite. vi. All attempts have been made to refer children with medical problems needing mid or long-term follow-up care and with a significant association with nutritional status to appropriate care/support services and/or the limits of inpatient care have been reached. b) The decision to transfer children from inpatient to outpatient care should not be made based on anthropometric criteria such as a specific weight-for-height/length or mid-upper arm circumference. Instead, the criteria listed above should be used.

			c) Upon deciding to transfer children from inpatient to outpatient care, caregivers must be linked to appropriate outpatient care with nutrition services. d) Additional social and family factors should be identified and addressed before transfer to outpatient care to ensure that the household has the capacity for care provision
B10	In infants and children 6-59 months with severe wasting and/or nutritional edema, what is the necessity of discharge planning?	GDG	**Good practice statement** B10. Discharge planning that is timely, efficient, and holistic is vital to continuity of care between inpatient and outpatient services. This is to ensure that children are discharged from inpatient care at the appropriate time and with definitive guidance given to caregivers for ongoing nutritional, medical, and psychosocial support services.
B11	In infants and children 6-59months receiving outpatient/community treatment for wasting and/or nutritional edema, what are the criteria that best inform the decision for exit from outpatient/community treatment?	WHO 2023	**Conditional recommendation, very low certainty evidence** B11. a) Infants and children 6-59 months with severe wasting and/or nutritional edema should only exit from nutritional treatment when all the following conditions are met: i. Their weight-for-height/length z-score is equal to or greater than 2 standard deviations (SD) below the WHO child growth standards median (WHZ or WLZ ≥ -2) and their mid-upper arm circumference (MUAC) is equal to or greater than 125mm observed for at least 2 consecutive visits/measurements; and ii. They have had no nutritional edema for at least 2 consecutive visits/measurements. b) Percentage weight gain and absolute weight gain should not be used as exit criteria. c) Children with medical problems needing mid or long-term follow-up care and with a significant association with nutritional status (e.g. HIV, tuberculosis, congenital heart disease, cerebral palsy) and/or additional social factors (e.g. household food insecurity, vulnerable household) have also been referred to appropriate care/support services care and the limit of care has been reached for outpatient care for severe wasting and/or nutritional

			edema.
B12	**Identification of dehydration in infants and children with wasting and/or nutritional edema** In infants and children with moderate or severe wasting or edema, how can dehydration be identified?	GDG	**Good practice statement** B12. Accurate classification of hydration** status in children with wasting and/or nutritional edema who have diarrhea or other fluid losses is vital to provide and monitor appropriate treatment and must be frequently reassessed.
B13	**Rehydration fluids for infants and children with wasting and/or nutritional edema and dehydration but who are not shocked.** B12. In infants and children with severe wasting or edema and dehydration but who are not shocked, what is the effective oral rehydration therapy?	GDG	**Good practice statement** B13. In infants and children 6-59 months of age with **severe** wasting and/or nutritional edema who are dehydrated but not in shock, low-osmolarity Oral Rehydration Solution (ORS) can be used. Rehydration Solution for Malnourished children (ReSoMal) is preferred if available
B14	In infants and children with moderate wasting or edema and dehydration but who are not shocked, what is the effective oral rehydration therapy?	WHO 2023	**Conditional recommendation, very low certainty evidence** B14. In infants and children 6-59 months with **moderate** wasting who are dehydrated but not in shock, low-osmolarity Oral Rehydration Solution (ORS) should be administered in accordance with existing WHO recommendations for all children apart from those with severe wasting and/or nutritional edema.
B15	**Dietary management of infants and children with moderate wasting** In infants and children 6-59 months with moderate wasting, what is the	WHO 2023	**Good practice statement** B15. Infants and children aged 6–59 months of age with moderate wasting (defined as a weight-for-height between 2 and 3 z-scores below the WHO child growth standards median and/or a mid-upper arm circumference 115 mm or more and less than 125 mm, without edema) should have access to a nutrient-dense food fully meet their extra needs for recovery of

	appropriate dietary treatment in terms of optimal type, quantity, and duration?		weight and height and for improved survival, health, and development.
B16	In infants and children 6-59 months of age with moderate wasting what they should be assessed for?	WHO 2023	**Good practice statement** B16. All infants and children 6-59 months of age with moderate wasting should be assessed comprehensively and treated wherever possible for medical and psychosocial problems leading to or exacerbating this episode of wasting.
B17	In infants and children 6-59 months of age with moderate wasting when they should be considered for specially formulated food with councelling?	WHO 2023	**Strong recommendation for, Moderate certainty evidence** B17. Prioritizing specially formulated food (SFF) interventions with counseling, compared to counselling alone, should be considered for. **Individual child factors:** •mid-upper arm circumference (MUAC) 115-119mm •weight-for-age z-score (WAZ) <-3 SD •age <24 months •failing to recover from moderate wasting after receiving other interventions (e.g. Counselling alone) •having relapsed to moderate wasting •history of severe wasting •co-morbidity (medical problems needing mid or long-term follow-up care and with a significant association with nutritional status such as HIV and tuberculosis or a physical or mental disability) **Social factors:** •Severe personal circumstances, such as mother died or poor maternal health and well-being
B18	In infants and children 6-59 months of age with moderate wasting I high risk context what they should be considered for?	WHO 2023	**Strong recommendation for, Moderate certainty evidence** B18. In high-risk contexts (where there is a recent or ongoing humanitarian crisis), all infants and children 6-59 months of age with moderate wasting should be considered for specially formulated foods (SFFs) along with

			counseling and the provision of home foods for them and their families.
B19	In infants and children 6-59 months of age with moderate wasting who need supplementation with specially formulated foods (SFFs) what is the alternative if it is not available?	WHO 2023	**Conditional recommendation for, Low certainty evidence** B19. In infants and children 6-59 months of age with moderate wasting who need supplementation with specially formulated foods (SFFs), lipid-based nutrient supplements (LNS) are the preferred type. When these are not available, Fortified Blended Foods with added sugar, oil, and/or milk (improved FBFs) are preferred compared to Fortified Blended Foods with no added sugar, oil, and/or milk.
B20	Infants and children 6-59 months of age with moderate wasting who require specially formulated foods (SFFs) how to calculate the required amount?	WHO 2023	**Conditional recommendation for, very low certainty evidence** B20. Infants and children 6-59 months of age with moderate wasting who require specially formulated foods (SFFs) should be given SFFs to provide 40-60% of the total daily energy requirements needed to achieve anthropometric recovery. Total daily energy requirements needed to achieve anthropometric recovery are estimated to be around 100-130 kcal/kg/day.
B21	**Vitamin A supplementation in the treatment of children with severe acute malnutrition** What is the effectiveness and safety of giving vitamin A supplementation to children with severe acute malnutrition when they are receiving a WHO-recommended therapeutic diet containing vitamin A?	WHO 2013	**Strong recommendation for , Low certainty evidence** B21. Children with severe wasting and/or nutritional edema should receive the daily recommended nutrient intake of vitamin A throughout the treatment period. Children with severe wasting and/or nutritional edema should be provided with about 5000 IU vitamin A daily, either as an integral part of therapeutic foods or as part of a multi-micronutrient formulation.***

Remarks of recommendations

* In depth assessment and clinical judgment of qualified physicians

** In infants and children aged 2 months up to 5 years [14]

Severe dehydration when two of the following signs:

- Lethargic or unconscious
- Sunken eyes
- Not able to drink or drinking poorly.
- Skin pinch goes back very slowly.

Some dehydration when two of the following signs:
- Restless, irritable
- Sunken eyes
- Drinks eagerly, thirsty
- Skin pinch goes back slowly.

*** Ask about history of vitamin A supplement with current vaccination schedule

Table 5. Recommendations

C. post-exit interventions after recovery from wasting and/or nutritional edema

N	**Health questions**	**Source Guideline**	**Recommendations** *(Quality of evidence, Strength of Recommendation)*
C1	Which infants and children at risk of poor growth and development or with moderate or severe wasting or edema require post-exit interventions? If yes, which post-exit interventions are effective?	GDG	**Good practice statement** C1. Mothers/caregivers after their infants and children exit from nutritional treatment should be provided with continuous counseling and education and should be kept in contact with one of presidential initiatives, civil society organizations and Ministry of Social Solidarity for social and financial support to improve overall child health and prevent relapse to wasting.
C2	In infants and children at risk of poor growth and development or with wasting and/or nutritional edema what is the role of psychosocial stimulation?	WHO 2023	**Conditional recommendation for, Low certainty evidence** C2. In infants and children at risk of poor growth and development or with wasting and/or nutritional edema, psychosocial stimulation should continue to be provided by mothers/caregivers after transfer from inpatient treatment and exit from outpatient treatment, with psychosocial stimulation interventions * as part of routine care to improve child development and anthropometric outcomes.

*Mother /caregiver should be involved in structured play therapy for 15-30 minutes per day with home-made toys. The activities recommended to be related to physical and emotional stimulation, language skills and motor development (as talking, smiling, pointing, enabling, and demonstrating, with or without objects. This also includes responsive feeding as a part of responsive caregiving).

Continuous emotional and physical stimulation that start during rehabilitation and continue after discharge can substantially reduce the risk of permanent mental retardation and emotional impairment.

Table 6. Recommendations

D. Prevention of wasting and nutritional edema

N	Health questions	Source Guideline	Recommendations *(Quality of evidence, Strength of Recommendation)*
D1	In communities with infants and children up to five years old at risk of wasting, what community characteristics increase or mitigate risk of wasting for individual children?	WHO 2023	**Good practice statement** D1. In contexts where wasting and nutritional edema occur, preventive interventions should ideally be implemented through a multisectoral and multisystem approach (i.e. food, health, safe water, sanitation and hygiene, and social protection systems). These interventions should include access to healthy diets and nutrition and medical services as appropriate, counselling (breastfeeding, health and nutrition related, especially helping families use locally available nutrient-dense foods for a healthy diet), should address maternal and family needs, and should involve psychosocial elements of care to ensure healthy growth and development.
D2	In communities with infants and children up to five years at risk of wasting, what is effective community prevention interventions for prevention of wasting?	GDG	**Good practice statement** D2. Infant and young child feeding counselling must be provided by **comprehensively trained health professionals** as part of routine care.
D3	In communities with infants and children up to five years at risk of wasting, what is the effectiveness of population-based interventions compared to targeted interventions for primary and secondary prevention of wasting?	WHO 2023	**Conditional recommendation for, Low certainty evidence** D3. a) In areas of or during periods of high food insecurity, in addition to infant and young child feeding counselling, specially formulated foods (SFFs), including medium-quantity lipid-based nutrient supplements (MQ-LNS) or small-quantity lipid-based nutrient supplements (SQ-LNS), may be considered for the prevention of wasting and nutritional edema for a limited duration for all infants and children 6-23 months of age, while continuing to enable access to adequate home diets for the whole family. b) In areas of or during periods of high food insecurity, children living in the most vulnerable households should be prioritized for SFF interventions through a

			targeted approach. However, when targeting is not possible, these SFFs may need to be given to all households through a blanket approach for infants and children 6-23 months of age, while continuing to enable access to adequate home diets for the whole family and providing infant and young child feeding counselling.

Evidence to recommendations: Considerations

The GDG was guided by the results of the AGREE II appraisals of the eligible CPGs and thoroughly reviewed the recommendations of the original source WHO CPGs in consideration of local contextual factors related to the national Egyptian health system like burden of the disease, equity, acceptability,feasibility, and other relevant factors. The GDG decided through an informal consensus process to adopt most recommendations however, there was a need to change the strength of 2 recommendations (B2 and B3) as they lack feasibility. Also, GDG develops group of good practice statements to improve acceptability and feasibility.

Implementation considerations

To improve nutritional care and patient outcome, evidence-based recommendations must not only be developed, but also disseminated and implemented at national and local levels and integrated into clinical practice.

Dissemination involves educating related healthcare providers to improve their awareness, knowledge and understanding of the guideline's recommendations. It is one part of implementation, which involved translation of evidence-based guidelines into real life practice with improvement of health outcomes for the patients.

Implementation requires an evidence-based strategy involving professional groups and stakeholders and should consider the local cultural and socioeconomic conditions. Cost-effectiveness of implementation programs should be assessed.

Specific steps need to be followed before clinical practice recommendations can be integrated into local clinical practice, particularly in low resource settings.

Steps of implementing wasting diagnosis, treatment, and prevention strategies into the Egyptian health system:

1. Develop a multidisciplinary working group.
2. Assess the status of nutritional care delivery, care gaps and current needs.
3. Select the material to be implemented, agree on the main goals, identify the key recommendations for diagnosis, treatment and prevention and adapt them to the local context or environment.
4. Identify barriers to, and facilitators of implementation.
5. Select an implementation framework and its component strategies.
6. Develop a step-by-step implementation plan:
    - Select the target populations and evaluate the outcome.
    - Identify the local resources to support the implementation.
    - Set timelines.
    - Distribute the tasks to the members.

- Evaluate the outcomes.

7. Continuously review the progress and results to determine if the strategy requires modification.

Guideline implementation strategies will focus on the following: -

1. **For Practitioners**
    - Educational meetings: conferences, lectures, workshops, grand rounds, seminars, and symposia.
    - Educational materials: printed or electronic information (software).
    - Web-based education: computer-based educational activities.
    - A trained person meets with providers in their practice setting to provide information with the intention of changing the provider's practice. The information may include feedback on the performance of the provider(s).
    - Reminders: the provision of information verbally, on papers or on a computer screen to prompt a health professional to recall information or to perform or avoid a particular action related to patient care.
    - Optimize professional-patient interactions, through mass media campaigns, reminders, and education materials.
    - Practice tools: tools designed to facilitate behavioral/practice changes, e.g., flow charts.
2. **For Patients and care givers**
    - Patient education materials (Arabic booklet): Printed/electronic information aimed at the patient/consumer, family, caregivers, etc.
    - Reminders: the provision of information verbally, on papers or electronically to remind a patient/consumer to perform a particular health-related behaviors.
    - Mass media campaigns.
3. **For Nurses**
    - Educational meetings: lectures, workshops or traineeships, seminars, and symposia.
    - Educational materials: printed.
    - A trained person meets with nurses in their practice setting to provide information with the intention of changing the provider's practice.
    - Reminders: the provision of information verbally, on paper or on a computer screen to prompt them to recall information or to perform or avoid a particular action related to patient care.
    - Practice tools: tools designed to facilitate behavioral/practice changes.
4. **For Stakeholders**

    Plans have been made to contact with all the health sectors in Egypt including all sectors of the Ministry of Health and Population, National Nutrition Institute, University Hospitals, Ministry of Interior, Ministry of Defense, Non-Governmental Organizations, Private sector, andall Health Care Facilities.
    - Information and communication technology: Electronic decision support, order sets, care maps, electronic health records, office-based personal digital assistants, etc.
    - Any summary of clinical provision of health care over a specified period may include recommendations for clinical action. The information is

obtained from medical records, databases, or observations by patients. Summary may be targeted at the individual practitioner or the organization.
- Administrative policies and procedures.
- Formularies: Drug safety programs, electronic medication administration records.

5. **Other activities to assist the implementation of the adapted guideline's recommendations include:**
   - **International initiative:** Dissemination of the presented adapted CPG internationally via sending the final adapted CPG to the Guidelines International Network (GIN) Adaptation Working Group and contacting the CPG developers.
   - **Gantt chart** has been designedto manage the dissemination and implementation stages for the adapted CPG over an accurate time frame (Appendix).

Evidence to Decision Tables:

QUESTION B3

Should Transition from F70 to ready-to-use Therapeutic food over 2-3 days vs. change abruptly be used for infants and children with severe wasting or edema?	
POPULATION:	infants and children with severe wasting or edema
INTERVENTION:	Transition from F70 to ready-to-use Therapeutic food over 2-3 days
COMPARISON:	change abruptly
MAIN OUTCOMES:	
SETTING:	Inpatient settings during rehabilitation phase
PERSPECTIVE:	
BACKGROUND:	
CONFLICT OF INTERESTS:	

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	**Moderate**	Large		Varies	Don't know
UNDESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	**Very low**	Low	Moderate	High			No included studies

VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	**No important uncertainty or variability**			
BALANCE OF EFFECTS	**Favors the comparison**	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	Large costs	**Moderate costs**	Negligible costs and savings	Moderate savings	Large savings	Varies	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	**Very low**	Low	Moderate	High			No included studies
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	**Does not favor either the intervention or the comparison**	Probably favors the intervention	Favors the intervention	Varies	No included studies
EQUITY	Reduced	**Probably reduced**	Probably no impact	Probably increased	Increased	Varies	Don't know
ACCEPTABILITY	No	**Probably no**	Probably yes	Yes		Varies	Don't know
FEASIBILITY	No	**Probably no**	Probably yes	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	**Conditional recommendation for either the intervention or the comparison**	Conditional recommendation for the intervention	Strong recommendation for the intervention
○	○	●	○	○

QUESTION B4

Should F-100 changed to ready-to-use diet vs. continue on F-100 be used for Children who have been admitted with complicated severe acute malnutrition and are achieving rapid weight gain on F-100 ?	
POPULATION:	Children who have been admitted with complicated severe acute malnutrition and are achieving rapid weight gain on F-100
INTERVENTION:	F-100 changed to ready-to-use diet

COMPARISON:	continue on F-100
MAIN OUTCOMES:	
SETTING:	Before discharge to outpatient care
PERSPECTIVE:	
BACKGROUND:	
CONFLICT OF INTERESTS:	

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	**Probably yes**	Yes		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	**Moderate**	Large		Varies	Don't know
UNDESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	**Very low**	Low	Moderate	High			No included studies
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	**No important uncertainty or variability**			
BALANCE OF EFFECTS	Favors the comparison	**Probably favors the comparison**	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	**Large costs**	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	Varies	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	**Very low**	Low	Moderate	High			No included studies
COST EFFECTIVENESS	Favors the comparison	**Probably favors the comparison**	Does not favor either the intervention	Probably favors the intervention	Favors the intervention	Varies	No included studies

			or the comparison				
EQUITY	Reduced	**Probably reduced**	Probably no impact	Probably increased	Increased	Varies	Don't know
ACCEPTABILITY	No	**Probably no**	Probably yes	Yes		Varies	Don't know
FEASIBILITY	No	**Probably no**	Probably yes	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	**Conditional recommendation for either the intervention or the comparison**	Conditional recommendation for the intervention	Strong recommendation for the intervention
○	○	●	○	○

Implementation Tools

Educational materials based on this Adapted CPG for treatment of CAP in children have been made available in several forms including:
1. Manual for physician for diagnosis and algorithm for management of acute malnutrition
3. Arabic Educational materials for nurses and mothers

Management of Acute Malnutrition
Implementation Tools

Assess,interpretandClassify,anddecideonManagement

1. Know how to measure reliably and consistently

- Length (lying down) – children 0-24 months
- Height (> 2 years)
- Weight
- Mid Upper Arm Circumference (MUAC)

1. Weight

1. *Standardize scales*

Standardize scales daily before weighing children or whenever the scales are moved

- Set the scale to zero
- Weigh three objects of known weight (e.g. 5, 10, and 15 kg) and record the measured weights. (A container filled with stones and sealed may be used if the weight is accurately known)
- Repeat the weighing of these objects and record the weights again
- If there is a difference of 10 g or more between duplicate weighing, or if a measured weight differs by 10 g or more from the known standard, check the scales and adjust or replace them if necessary

2. *Take weight*

Pediatric scale for infants

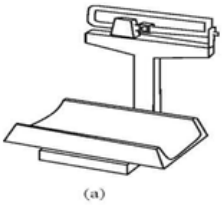
- Remove the child's clothes but keep the child warm with a blanket or cloth while carrying to thescale
- Put a cloth in the scale pan to prevent chilling the child
- Adjust the scale to zero with the cloth in the pan or bucket
- Place the naked child gently in the pan or bucket
- Wait for the child to settle and the weight to stabilize
- Measure weight to the nearest 10 g (0.01 kg) Record immediately on the critical care pathway(CCP).
- Wrap the child immediately to rewarm

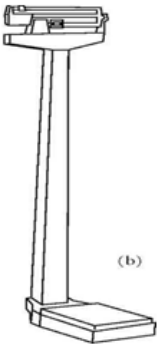
Measurement of weight beam balance for a child or adult

Source: **Gibson (2005)**

1. Keep the weighing scale on a flat platform
2. Ask the individual to stand bare-feet at the center of the weighing scale, with minimum clothes worn
3. **Weigh when the individual is breathing normally** and avoid recording weight if the individual breathes deeply or cries
4. Record the body weight in kilograms to the last decimal unit

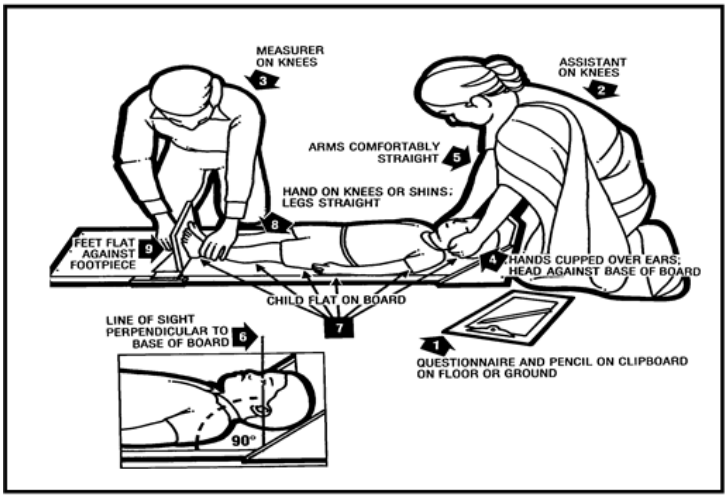
This technique is used to weigh older children and adults

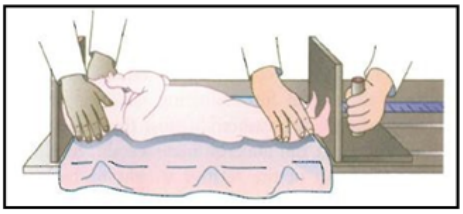




2. Length/height

- Length (lying down) – children 0-24 months
  - Using a rigid length board (infantometer)

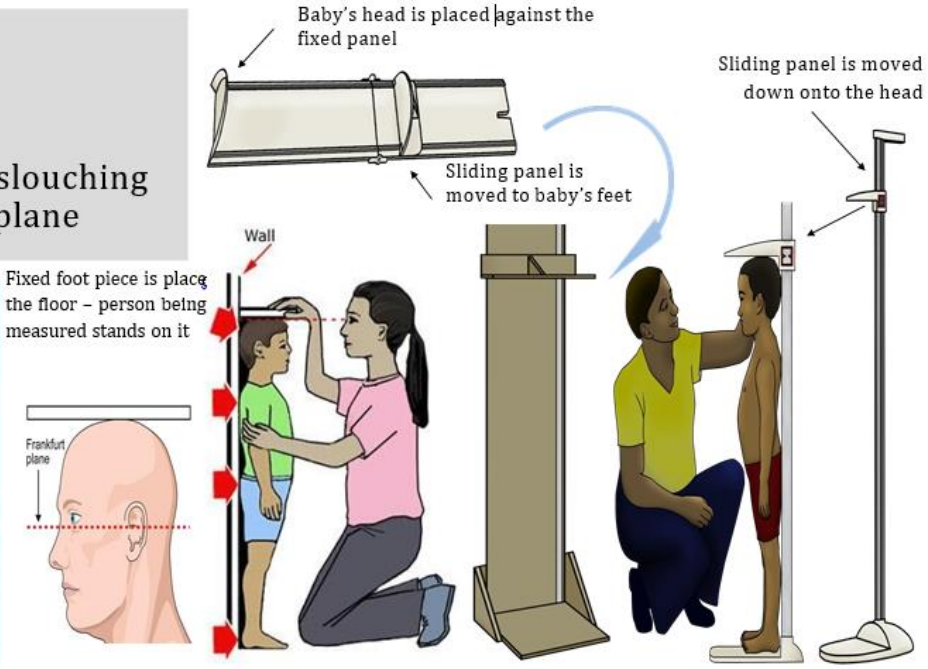




1. Lay the child on a ruled board that has an attached piece of wood at one end and a movable piece at the other
2. Stretch the child out on the board for the most accurate measurement
3. Place the movable end flat against the bottom of the child's foot and read the length from the side of the board

Height

No shoes
straight legs
No tip toeing / slouching
Face in neutral plane



Find the child's Z-score

Use the reference table (Web Annex A: weight-for-height reference card) to, as follows.

- First, find the child's length or height in the middle column of the table, under the appropriate heading.
- If the length or height is between those listed in the table, round up or down as follows: if the length/height is 0.5 cm or more greater than the next lower length/height, round up. Otherwise, round down.
- Then look in the left columns for boys, or the right columns for girls, to find the child's weight.
- 4. Look at the top of the column to see what the child's Z-score is.
- The child's weight may be between two Z-scores. If so, indicate that the weight is between these scores by writing less than (<). For example, if the Z-score is between –1 SD and –2 SD, write < –1 SD

(WHO CHILD GROWTH STANDARDS)

Boys' weight (kg)					Height[a]	Girls' weight (kg)				
–4 SD	–3 SD	–2 SD	–1 SD	Median	(cm)	Median	–1 SD	–2 SD	–3 SD	–4 SD
5.4	5.9	6.5	6.9	7.4	65	7.2	6.6	6.1	5.6	5.1
5.6	6.1	6.5	7.1	7.7	66	7.5	6.8	6.3	5.8	5.3
5.7	6.2	6.7	7.3	7.9	67	7.7	7.0	6.4	5.9	5.4
5.9	6.4	6.9	7.5	8.1	68	7.9	7.2	6.6	6.1	5.6
6.1	6.6	7.1	7.7	8.4	69	8.1	7.4	6.8	6.3	5.7
6.2	6.8	7.3	7.9	8.6	70	8.3	7.6	7.0	6.4	5.9
6.4	6.9	7.5	8.1	8.8	71	8.5	7.8	7.1	6.6	6.0
6.5	7.1	7.7	8.3	9.0	72	8.7	8.0	7.3	6.7	6.1
6.7	7.3	7.9	8.5	9.2	73	8.9	8.1	7.5	6.9	6.3
6.8	7.4	8.0	8.7	9.4	74	9.1	8.3	7.6	7.0	6.4
7.0	7.6	8.2	8.9	9.6	75	9.3	8.5	7.8	7.2	6.6
7.1	7.7	8.4	9.1	9.8	76	9.5	8.7	8.0	7.3	6.7
7.3	7.9	8.5	9.2	10.0	77	9.6	8.8	8.1	7.5	6.8
7.4	8.0	8.7	9.4	10.2	78	9.8	9.0	8.3	7.6	7.0
7.5	8.2	8.8	9.6	10.4	79	10.0	9.2	8.4	7.8	7.1
7.7	8.3	9.0	9.7	10.6	80	10.2	9.4	8.6	7.9	7.2
7.8	8.5	9.2	9.9	10.8	81	10.4	9.6	8.8	8.1	7.4
8.0	8.7	9.3	10.1	11.0	82	10.7	9.8	9.0	8.3	7.6
8.1	8.8	9.5	10.3	11.2	83	10.9	10.0	9.2	8.5	7.7
8.3	9.0	9.7	10.5	11.4	84	11.1	10.2	9.4	8.6	7.9
8.5	9.2	10.0	10.8	11.7	85	11.4	10.4	9.6	8.8	8.1
8.7	9.4	10.2	11.0	11.9	86	11.6	10.7	9.8	9.0	8.3
8.9	9.6	10.4	11.2	12.2	87	11.9	10.9	10.0	9.2	8.4
9.1	9.8	10.6	11.5	12.4	88	12.1	11.1	10.2	9.4	8.6
9.3	10.0	10.8	11.7	12.6	89	12.4	11.4	10.4	9.6	8.8
9.4	10.2	11.0	11.9	12.9	90	12.6	11.6	10.6	9.8	9.0
9.6	10.4	11.2	12.1	13.1	91	12.9	11.8	10.9	10.0	9.1
9.8	10.6	11.4	12.3	13.4	92	13.1	12.0	11.1	10.2	9.3
9.9	10.8	11.6	12.6	13.6	93	13.4	12.3	11.3	10.4	9.5
10.1	11.0	11.8	12.8	13.8	94	13.6	12.5	11.5	10.6	9.7
10.3	11.1	12.0	13.0	14.1	95	13.9	12.7	11.7	10.8	9.8

Find the child's Z-score

Use the reference table (Web Annex A: weight-for-height reference card) to, as follows.

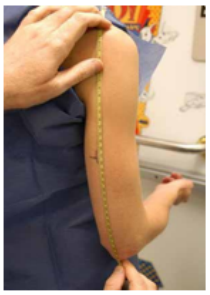
- First, find the child's length or height in the middle column of the table, under the appropriate heading.
- If the length or height is between those listed in the table, round up or down as follows: if the length/height is 0.5 cm or more greater than the next lower length/height, round up. Otherwise, round down.
- Then look in the left columns for boys, or the right columns for girls, to find the child's weight.
- 4. Look at the top of the column to see what the child's Z-score is.
- The child's weight may be between two Z-scores. If so, indicate that the weight is between these scores by writing less than (<). For example, if the Z-score is between –1 SD and –2 SD, write < –1 SD

Boys' weight (kg)					Height[2]	Girls' weight (kg)				
–4 SD	–3 SD	–2 SD	–1 SD	Median	(cm)	Median	–1 SD	–2 SD	–3 SD	–4 SD
10.4	11.3	12.2	13.2	14.3	96	14.1	12.9	11.9	10.9	10.0
10.6	11.5	12.4	13.4	14.6	97	14.4	13.2	12.1	11.1	10.2
10.8	11.7	12.6	13.7	14.8	98	14.7	13.4	12.3	11.3	10.4
11.0	11.9	12.9	13.9	15.1	99	14.9	13.7	12.5	11.5	10.5
11.2	12.1	13.1	14.2	15.4	100	15.2	13.9	12.8	11.7	10.7
11.3	12.3	13.3	14.4	15.6	101	15.5	14.2	13.0	12.0	10.9
11.5	12.5	13.6	14.7	15.9	102	15.8	14.5	13.3	12.2	11.1
11.7	12.8	13.8	14.9	16.2	103	16.1	14.7	13.5	12.4	11.3
11.9	13.0	14.0	15.2	16.5	104	16.4	15.0	13.8	12.6	11.5
12.1	13.2	14.3	15.5	16.8	105	16.8	15.3	14.0	12.9	11.8
12.3	13.4	14.5	15.8	17.2	106	17.1	15.6	14.3	13.1	12.0
12.5	13.7	14.8	16.1	17.5	107	17.5	15.9	14.6	13.4	12.2
12.7	13.9	15.1	16.4	17.8	108	17.8	16.3	14.9	13.7	12.4
12.9	14.1	15.3	16.7	18.2	109	18.2	16.6	15.2	13.9	12.7
13.2	14.4	15.6	17.0	18.5	110	18.6	17.0	15.5	14.2	12.9
13.4	14.6	15.9	17.3	18.9	111	19.0	17.3	15.8	14.5	13.2
13.6	14.9	16.2	17.6	19.2	112	19.4	17.7	16.2	14.8	13.5
13.8	15.2	16.5	18.0	19.6	113	19.8	18.0	16.5	15.1	13.7
14.1	15.4	16.8	18.3	20.0	114	20.2	18.4	16.8	15.4	14.0
14.3	15.7	17.1	18.6	20.4	115	20.7	18.8	17.2	15.7	14.3
14.6	16.0	17.4	19.0	20.8	116	21.1	19.2	17.5	16.0	14.5
14.8	16.2	17.7	19.3	21.2	117	21.5	19.6	17.8	16.3	14.8
15.0	16.5	18.0	19.7	21.6	118	22.0	19.9	18.2	16.6	15.1
15.3	16.8	18.3	20.0	22.0	119	22.4	20.3	18.5	16.9	15.4
15.5	17.1	18.6	20.4	22.4	120	22.8	20.7	18.9	17.3	15.6

Note: A more detailed table is available at http://www.who.int/childgrowth/standards/weight_for_height/en/
[2] For children aged 2 years and above (or, if age not known, 67 cm or more), height is measured.

Sex	Length/height and weight	Finding	Z-score
Boy	80 cm length 9.2 kg weight	His weight is above –2 SD and below –1 SD	Record his Z-score as < –1
Girl	76.5 cm length (round her length up to 77 cm) 7.4 kg weight	Her weight is –3 SD	Record her Z-score as –3

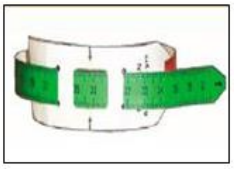
3. Mid-upper arm circumference (MUAC)



- **All participants aged 3 months and older**
- **Color-coded MUAC tape – used for children 3 months to 5 years old**

- MUAC is measured on the upper left arm
- On the child's left arm, locate the acromion (bone at the end of the shoulder) with the tips of your fingers.
- Flex the child's arm to an angle of 90 degrees, and locate the olecranon (Tip of the elbow).
- Place the end of a tape on the acromion, holding it in place with your left thumb. Extend the tape to the tip of the elbow and measure the length of the upper arm
- Find the midpoint and mark it with a pen, or using your fingertip. Note: You can also find the midpoint by carefully folding the tape (or a length of string) from the lower point at the elbow back to the top point at the acromion, and marking the midpoint where the tape or string folds

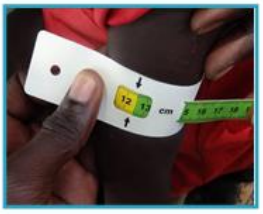
Mid-upper arm circumference (MUAC)



- **All participants aged 3 months and older**
- **Color-coded MUAC tape – used for children 3 months to 5 years old**

- Straighten and relax the arm and wrap the MUAC tape around the arm at the midpoint, so that the whole tape is in contact with the child's skin.
- Place the tape through the window and correct the tape tension so that it is not too tight or too loose.
- Read the measurement in centimeters (cm) in the window where the arrows point inward.
- Record the measurement to the nearest 1 millimeter (0.1 cm) and note the color

Children aged 6 months or older with a MUAC less than 115 mm are diagnosed as severely wasted

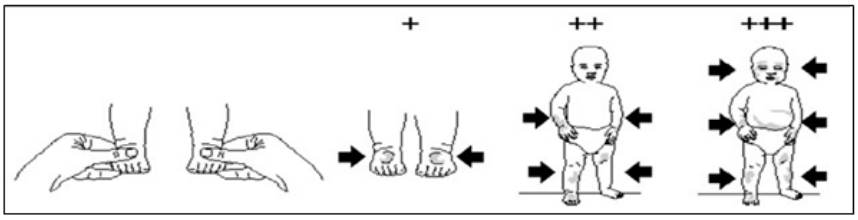


2. Know how to assess pitting edema

- Edema is swelling from excess fluid in the tissues
- To be considered a sign of severe acute malnutrition, it must appear in both feet

The extent of edema is commonly rated in the following way:

\+ **Mild:** both feet
++ **Moderate:** both feet, plus lower legs, hands and lower
+++ **Severe:** generalized edema, including both feet, legs, hands, arms and face



3. Appetite test

The weight-based test, if they eat a pre-specified amount of RUTF relative to their weight

- **Hand washing**
- **Let the caregiver give the treatment to the child (RUTF)**
- **Right amounts (based on current weight at diagnosis)**
- **Respect the time (15 min to 1h max)**
- **Give drinking water**

Intake cut-offs for weight-based appetite test

Child weight	Test was passed if the child ate this amount, or more
Less than 4 kg	1/8 of the sachet
More or equal than 4 kg, but less than 7 kg	1/4 of the sachet
More or equal than 7 kg, but less than 10 kg	1/3 of the sachet
More or equal than 10 kg, but less than 15 kg	1/2 of the sachet
More or equal than 15 kg, but less than 30 kg	3/4 of the sachet
More or equal than 30 kg	1/1 of the sachet

4. Interpret and Classify

Acute Malnutrition in infants and Children > 6 to 59 months is defined as:

A weight-for-height or weight-for-length z-score more than 2 SD below the median of the WHO child growth standards (WHZ or WLZ < -2) or having nutritional edema and /or MUCA < 12.5 cm

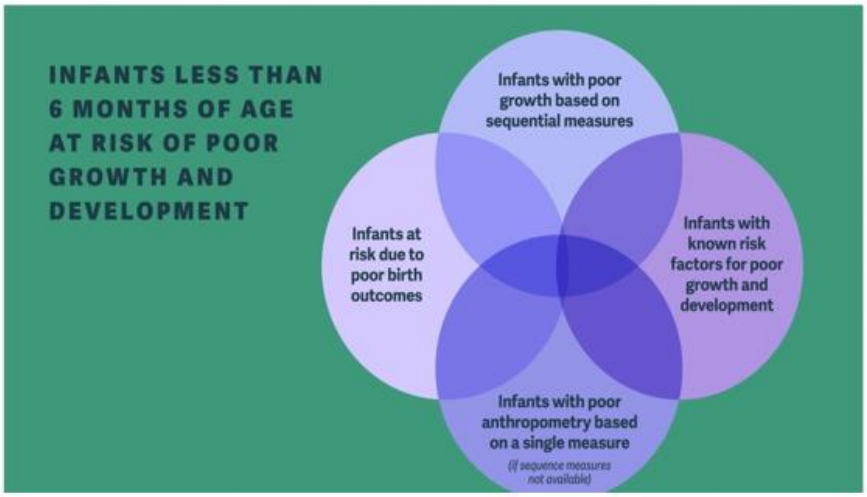
Moderate acute Malnutrition (MAM):
- WHZ or WLZ < -2 and/or
- MUAC ≥ 115 and <125mm, and
- No nutritional edema.

Severe acute Malnutrition (SAM):
- Nutritional edema and/or
- WHZ or WLZ < -3 and/or
- MUAC <115mm.

❖**Nutritional Edema is pathognomic of Severe Acute Malnutrition**

4. Interpret and Classify

Infants less than 6 months of age with risk of poor Growth and Development**, are categorized into *Four* main Categories:**



Identification Criteria for the *Four* main Categories of Infants less than 6 Months of age at Risk of Poor Growth and Development

1) Infants with poor growth based on sequential measures

- **No weight gain or weight loss from one measurement to the next, Or**
- **Downward crossing of weight-for-age centile lines, Or**
- **Insufficient weight gain (velocity < 2 SD) Or**
- **grams/per specific time period**

2)* Infants with poor anthropometry based on *a single measure

(If sequential measures not available)

- **Weight-for-age z-score (WAZ) < -2 SD; OR**
- **Weight-for-length z-score (WLZ) < -2 SD; OR**
- **Nutritional edema; OR**
- **MUAC < 11 cm**

For infants aged 6 weeks to < 6 ms. of age

3) Infants with known risk factors for poor growth and development

- Neurodevelopmental concerns; or
- Infant feeding concerns; or
- Maternal risk (physical or mental health problem(s) affecting caring practices); or
- History of hospitalization

4) Infants with poor birth outcomes

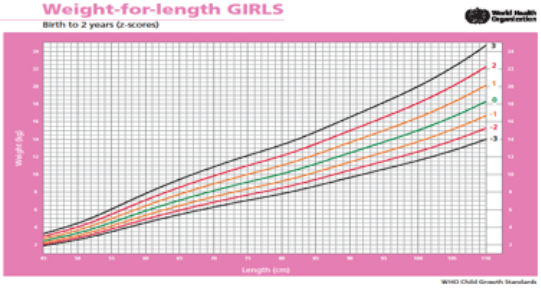
- Preterm birth; or
- Low birth weight; or
- Small for gestational age

1) Infants with Poor Growth Based on Sequential Measures:

Insufficient Weight Gain		
Approximately < 500 g/month	***Birth to 3 months:*** Approximately < 150-200 g/week ***3 to 6 months:*** approximately < 100-150 g / week	**Growth velocity is < 2 (SD) below the median** on the WHO growth velocity standards from one measurement to the next

2) Infants with poor anthropometry based on a single measure (if sequential measures not available):

For infant (6 wks to < 6 ms):
RED MUAC < 110 mm or Nutritional Edema



5. Decide on Management

A. Infant less than 6 months of age with Severe Acute Malnutrition (SAM) is identified as:

- Weight for Length (WHZ) < -3 SD z-score of the WHO Child Growth Standards median, *or*
- Bilateral Pitting Edema

Without Medical Complications → **Outpatient Care**

- **Serious Medical or Clinical Complications**
- **Recent weight loss or failure to gain weight**
- **Ineffective feeding**
- **Medical / Social needing assessment or support**

→ **Inpatient Care**

5. Decide on Management:
B. Infants < 6 Months of Age at Risk of Poor Growth and Development:

Exclude any Danger signs (a):
Not able to drink or breastfeed,
Vomits everything,
Convulsions (now/recent),
Lethargic or unconscious

IF No for All

Outpatient

Appropriate Health care & Follow up until 6 month of age

Reduced frequency of outpatient visits with effective feeding & proper gain weight

Review At 6 m

Appropriate Health and Nutrition Services > 6 m

Exclude any acute medical conditions (b):

Hypoglycemia,
hypothermia,
Dehydration,
Severe anemia,
Signs of serious bacterial infections,
Pneumonia with distress,
severe persistent diarrhea,
Very high fever,
Open or infected skin lesions
complicated measles

IF Yes for Any

Inpatient

Referee for a specialist if (c):

- **Medical issues that need further investigations as:** Bloody diarrhea or hypoglycemia
- **Medical problem that require long term care and affect nutritional status seriously** as CP, CHDs
- **Failure to gain weight** or **show no improvement in the outpatient care**
- **Previous episodes of severe wasting and/or nutritional edema**

5. Decide on Management

Infants and children > 6 mo. to 59 mo. of age with Severe Acute Malnutrition as identified by:

- **Nutritional edema (a pathognomonic sign for SAM) and/or**
- **Weight-for-Height (WHZ) or Weight-for-Length z-score (WLZ) <-3 SD and/or**
- **MUAC <11.5 cm**

Without Medical Complications

Outpatient Care

- **Serious Medical or Clinical Complications**
- **Recent weight loss or failure to gain weight**
- **Ineffective feeding**
- **Medical / Social needing assessment or support**

Inpatient Care

II. Stabilize
Treat medical complications and start careful nutrition with F75

Time-frame for the Management of Severe PEM

Activity	Initial TTT D 1-2 D 3-7	Rehabilitate 2-6 Wks.	Follow up 7-26 Wks.
3 H			
Na, K…			
Infection			
Minerals and vitamins	No Iron	With Iron	
F75 Feeding			
F100 Feeding			
Stimulation			
Prepare for discharge			

Initial Treatment;

1. **Hypoglycemia (defined as a blood glucose level < 3 mmol/L) (< 54mg/dl)**

Conscious

- Give a bolus of 50ml (10% glucose) orally or via nasogastric tube (unable to drink)
- Start feeding with F-75 immediately following the Feeding schedule (2-hourly feeds)

If 10% glucose not available give:
Glucose 50% (one part + 4 parts boiled water), or sugar solution (one tsp + 3 tbsp.), or F-75

❖ **For all children: Feed straight away and then every 2–3 hours, day and night and encourage mothers to watch for any deterioration, help feed child and keep child**

Unconscious

- Give glucose (IV) (5 ml/kg of sterile 10% glucose), followed by
- 50 ml of 10% glucose or sucrose by nasogastric tube
- If the IV dose cannot be given immediately, give the nasogastric dose first

Warning Signs:
- **hypothermia on routine check,**
- **Lethargy, limpness and loss of consciousness,**
- **drowsy & Major risk of death**

Hypoglycemia is often associated with hypothermia

2. Initial Treatment; Hypothermia (defined as a rectal temperature < 35.5ºC or an axillary temperature< 35ºC) Take Rectal Temperature on Admission

If thermometer is not available or Hg doesn't move then assume hypothermia

Hypothermia in malnourished child often indicates coexisting hypoglycemia and serious infection

- **Feed straight away and then every 2–3 hours, day and night**
- **Keep warm; use kangaroo technique, cover with a blanket**
- **Let mother sleep with child to keep child warm**
- **Keep room warm, Keep bedding and clothes dry**
- **Dry carefully after bathing**
- **Avoid exposure during examinations and bathing**
- **Use a heater or incandescent lamp with caution; do not use hot water bottle or fluorescent lamp**

Kangaroo Technique

Take temperature every 30 minutes until it becomes normal and stop rewarming when it rises above 36.5ºC (or 36ºC axillary)

3. a) Initial Treatment; Dehydration

Do not give IV fluids except in shock (Give ReSoMal if the child has dehydration)

Give **ORS** (ReSoMal if available) **5 ml/kg every 30 minutes for 2 hours** (orally or by nasogastric tube)
(omit this step if the child has already received IV fluids for shock and is switching to ORS or ReSoMal – continue with next step)
Then give ORS or ReSoMal **5–10 ml/kg for up to 10 hours** (in alternate hours with F-75 formula)

- Stop giving ReSoMal when there are 3 or more **hydration signs** (**less thirsty**, **less lethargic**, **slowing of respiratory and pulse rate**, **passing urine**, **not thirsty**) or if the child has reached any signs of **over hydration**
- In case of profuse watery diarrhea or cholera, ReSoMal should not be given; instead use low-osmolarity oral rehydration solution (ORS) in same amount and frequency

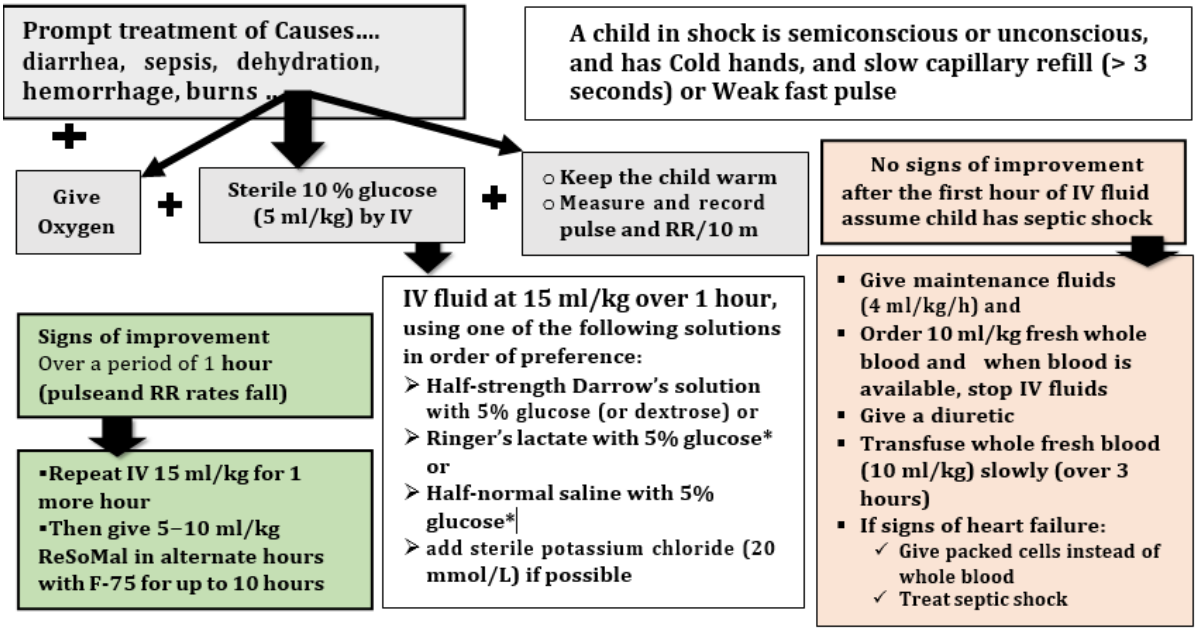
Monitor every 30 minutes for the first 2 hours for over hydration:

- Increasing pulse (25 beats/m) and respiratory rate (5 breaths/m)
- Increasing edema and puffy eyelids

Thereafter: - Check at least hourly

Content	amount
water	2 liters
WHO-ORS	1 L Packet
Sugar	50 gm
Minerals /vitamins	40 ml

3. b) Initial Treatment; Shock



4. Initial Treatment; Electrolyte Imbalance

❑ **For all children**

- Correct electrolyte imbalance (Too little potassium and magnesium, and too much sodium)
- Do not add *salt* to food introduced during the rehabilitation phase

Warning Signs Clinical Signs Edema develops or worsens

- **Follow feeding recommendation & recommendation for treatment of dehydration**
- **Extra potassium (4 mmol/kg body weight) and magnesium (0.6 mmol/kg) are important**
- **Potassium and magnesium are already added in F-75**

IF F-75 is not available:

- **For potassium**, add combined minerals and vitamins (CMV) or electrolyte/mineral solution or **10% potassium chloride solution** to feeds. If these are unavailable, give **crushed Slow-K half a tablet/kg body weight** daily
- **For magnesium**, add **CMV** or **Electrolyte/mineral solution** to feeds

5. Initial Treatment; Treat Infection

For all children

- **Keep malnutrition ward in a separate room**
- **Reduce overcrowding**
- **Wash hands before preparing feeds and before and after dealing with any child**
- **Give measles vaccine to unimmunized children aged over 6 months**
- **Provide good nursing care**

Warning Signs (Clinical Signs)

- **The usual signs of infection, such as fever, are often absent Assume all severely malnourished children have infection and treat with antibiotics**
- **Hypothermia and hypoglycemia are signs of severe infection**
- **Ensure all doses are taken as prescribed**

5. Initial Treatment; Treat Infection

From day 1 and for all children:
Gentamicin* **IV or IM**
7.5 mg/kg ONCE per dayfor 7 days
Ampicillin: **IM or IV**
50 mg/kg/6 hr for 2 days
Followed then by
Amoxicillin **orally 25–40 mg/kg /12 hr**
For 5 days

If serious complications (e.g. severe sepsis, shock) **or resistance** to amoxicillin and ampicillin, give:

- ***Cefotaxime*** **IV children & Infants older than 1 month 50 mg/kg/8–12 hr**
- ***Ciprofloxacin*** **orally 10–20 mg/kg/day for 5 days**

For staphylococcal infection ADD

Cloxacillin

25–50 mg/kg/6 hr per day for 14 to 21 days

For parasitic worms (helminthiasis, whipworm), treatment will be given in outpatient

6. Correct micronutrient deficiencies

Treatment	When
Vitamin A	❖**A high dose of vitamin A (50 000 IU, 100 000 IU or 200 000 IU, depending on age) Should be given on day 1, day 2 and at the end of rehabilitation IF** ○ ***The child has visible signs of vitamin A deficiency, signs of eye infection, or has measles now or has had measles in the past 3 months*** ❖**A high dose of vitamin A (50 000 IU, 100 000 IU or 200 000 IU, depending on age) should be given on admission, only if:** ○ ***the child is given therapeutic foods that are not fortified as recommended in WHO specifications and vitamin A is not part of other daily supplements*** ❖***The child with SAM +/- edema should be provided with about* 5000 IU (1500 µg REq) vitamin A daily, either as an integral part of therapeutic foods or as part of a multi-micronutrient formulation**

Give the following daily if F-75 and F-100 not given and if micronutrients not included in the feeds:

- **Folic acid: 5 mg on day 1; then 1 mg daily till end of rehabilitation,**
- **Multivitamin syrup 5 ml**
- **Zinc (2 mg/kg body weight) and copper (0.3 mg/kg body weight)**
- **Start iron (3 mg/kg/day) after 2 days on F-100 catch-up formula (do not give iron in the stabilization phase and do not give iron if child receiving RUTF)**

Note:

Vitamin A, folic acid, multivitamins, zinc and copper are already added in F-75 and F-100 packets; they are also in CMV

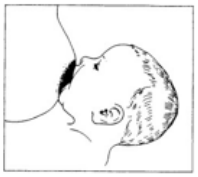
7. Begin Cautious Feeding; Stabilization phase:

Box 1. SIMPLE ROUTINE ASSESSMENT AND HELP WITH BREASTFEEDING
[adapted abstract from Integrated Management of Childhood Illness (87)]

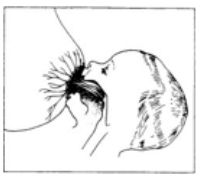
1. **Ask the mother:**
   - Is there any difficulty feeding?
   - Is the infant breastfed? If yes, how many times in 24 hours
   - Does the infant usually receive any other foods or drinks? If yes, how often?
   - What do you use to feed the infant?
2. **Weigh the infant, and determine weight for age.**
3. **If an infant:**
   - Has any difficulty feeding
   - Is breastfeeding less than 8 times in 24 hours
   - Is taking any other foods or drinks or
   - Is low weight for age

   Assess a breastfeed for 4 minutes (if necessary, wait until the infant is ready to feed).
   Look for signs of good attachment and effective suckling.
4. **Signs of good attachment:**
   - Chin touching breast
   - Mouth wide open
   - Lower lip turned out
   - More areola visible above than below mouth
5. **Signs of effective suckling:**
   Slow deep sucks, sometimes pausing
6. **If any signs of good attachment are not present, teach correct positioning and attachment**
   - Show the mother how to hold her infant:
     - With the infant's head and body straight
     - Facing her breast, with the infant's nose opposite her nipple
     - With the infant's body close to her body
     - Supporting infant's whole body, not just head and neck
   - Show her how to help the infant to attach. She should:
     - touch her infant's lips with her nipple
     - wait until her infant's mouth is wide open
     - move her infant quickly onto her breast, aiming the infant's lower lip well below the nipple.
   - Look for signs of good attachment and effective suckling.
   - If the attachment is not good, try again.
7. **When the attachment is good:**
   advise the mother to breastfeed as often and for as long as the infant wants, day and night, at least 8 times a day.
8. **If an infant less than about 6 months old is receiving other foods or drinks:**
   counsel the mother about breastfeeding more, reducing other foods or drinks, and using a cup for the other food and drinks until they can be stopped.
9. **If the infant is not breastfeeding at all, refer for breastfeeding counselling and possible relactation.**

The mothers or female caregivers should be supported to breastfeed the infants where possible



Proper positioning



7. Begin Cautious Feeding; Stabilization phase:

- Relactation means re-establishing (restarting) breastfeeding. It is the best way of providing milk feeds for infants who are not breastfeeding, especially in emergency settings when artificial feeding is dangerous.
- If possible it should be done by the infant's mother, but, if she is not available, by a caregiver who is willing to be a wet nurse and undergo the appropriate health checks
- With Supportive Care, a woman with mild or moderate malnutrition can be assisted to start the process of relactation immediately. She does not need to wait until she is better to start breastfeeding

The drop and drip technique This is one way to give milk supplements during relactation. It encourages an infant to take an interest in the breast and to start suckling. Drip milk from a dropper or a container directly onto the breast while the mother is attaching the infant to the breast.

Advise the mother how to :

- Hold the infant close to her, sleep with him or her, and give skin-to-skin contact as often as possible **Kangaroo Care** may be helpful
- Make sure that the infant is well attached to the breast
- Cup feed measured milk supplements, six times in 24 hours to begin with
- Always put the infant to the breast to suckle before giving a cup feed

7. Begin Cautious Feeding; Stabilization phase:

F-75 reference card

Volume of F-75 to give for children without oedema or with mild or moderate oedema (O + ++)

See reverse for adjusted amounts for children with severe oedema (+++)

Child weight (kg)	Volume of F-75 per feed (ml)[a]			Daily total (130 ml/kg)	80% of daily total[a] minimum)
	Every 2 hours[b] (12 feeds)	Every 3 hours[c] (8 feeds)	Every 4 hours (6 feeds)		
2.0	20	30	45	260	210
2.2	25	35	50	286	230
2.4	25	40	55	312	250
2.6	30	45	55	338	265
2.8	30	45	60	364	290
3.0	35	50	65	390	310
3.2	35	55	70	416	335
3.4	35	55	75	442	355
3.6	40	60	80	468	375
3.8	40	60	85	494	395
4.0	45	65	90	520	415
4.2	45	70	90	546	435
4.4	50	70	95	572	460
4.6	50	75	100	598	480
4.8	55	80	105	624	500
5.0	55	80	110	650	520
5.2	55	85	115	676	540
5.4	60	90	120	702	560
5.6	60	90	125	728	580
5.8	65	95	130	754	605
6.0	65	100	130	780	625
6.2	70	100	135	806	645
6.4	70	105	140	832	665
6.6	75	110	145	858	685
6.8	75	110	150	884	705
7.0	75	115	155	910	730
7.2	80	120	160	936	750
7.4	80	120	160	962	770

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Give F-75 formula

- **These provide 130 ml/kg/day**
- **Give 8–12 feeds over 24 hours (day and night)**
- **If the child has edema +++, reduce the volume to 100 ml/kg/day**
- **Always use starting weight to determine feed amounts**
- **If eating 80% or less of the amount offered for 2 consecutive feeds, use a nasogastric tube.**
- ***If the child is breastfed, encourage continued breastfeeding but also give F-75***

Child weight (kg)	Volume of F-75 per feed (ml)[a]			Daily total (130 ml/kg)	80% of daily total[a] minimum)
	Every 2 hours[b] (12 feeds)	Every 3 hours[c] (8 feeds)	Every 4 hours (6 feeds)		
7.6	85	125	165	988	790
7.8	85	130	170	1014	810
8.0	90	130	175	1040	830
8.2	90	135	180	1066	855
8.4	90	140	185	1092	875
8.6	95	140	190	1118	895
8.8	95	145	195	1144	915
9.0	100	145	200	1170	935
9.2	100	150	200	1196	960
9.4	105	155	205	1222	980
9.6	105	155	210	1248	1000
9.8	110	160	215	1274	1020
10.0	110	160	220	1300	1040

[a] Volumes in these columns are rounded to the nearest 5 ml.
[b] Feed 2-hourly for at least the first day. Then, when little or no vomiting, modest diarrhoea (< 5 watery stools per day), and finishing most feeds, change to 3-hourly feeds.
[c] After a day on 3-hourly feeds: if no vomiting, less diarrhoea, and finishing most feeds, change to 4-hourly feeds.

7. Begin Cautious Feeding; Stabilization phase:

- **Keep a 24-hour intake chart. Measure feeds carefully. Record leftovers**
- ***Weigh daily and plot weight;***

Good Gain is >= 10 g/kg/d and Poor Gain is < 5 g/kg/d

Weight with +++ oedema (kg)	Volume of F-75 per feed (ml)[a]			Daily total (100 ml/kg)	80% of daily total[a] (minimum)
	Every 2 hours[b] (12 feeds)	Every 3 hours[c] (8 feeds)	Every 4 hours (6 feeds)		
3.0	25	40	50	300	240
3.2	25	40	55	320	255
3.4	30	45	60	340	270
3.6	30	45	60	360	290
3.8	30	50	65	380	305
4.0	35	50	65	400	320
4.2	35	55	70	420	335
4.4	35	55	75	440	350
4.6	40	60	75	460	370
4.8	40	60	80	480	385
5.0	40	65	85	500	400
5.2	45	65	85	520	415
5.4	45	70	90	540	430
5.6	45	70	95	560	450
5.8	50	75	95	580	465
6.0	50	75	100	600	480
6.2	50	80	105	620	495
6.4	55	80	105	640	510

Weight with +++ oedema (kg)	Volume of F-75 per feed (ml)[a]			Daily total (100 ml/kg)	80% of daily total[a] (minimum)
	Every 2 hours[b] (12 feeds)	Every 3 hours[c] (8 feeds)	Every 4 hours (6 feeds)		
6.6	55	85	110	660	530
6.8	55	85	115	680	545
7.0	60	90	115	700	560
7.2	60	90	120	720	575
7.4	60	95	125	740	590
7.6	65	95	125	760	610
7.8	65	100	130	780	625
8.0	65	100	135	800	640
8.2	70	105	135	820	655
8.4	70	105	140	840	670
8.6	70	110	145	860	690
8.8	75	110	145	880	705
9.0	75	115	150	900	720
9.2	75	115	155	920	735
9.4	80	120	155	940	750
9.6	80	120	160	960	770
9.8	80	125	165	980	785
10.0	85	125	165	1000	800
10.2	85	130	170	1020	815
10.4	85	130	175	1040	830
10.6	90	135	175	1060	850
10.8	90	135	180	1080	865
11.0	90	140	185	1100	880
11.2	95	140	185	1120	895
11.4	95	145	190	1140	910
11.6	95	145	195	1160	930
11.8	100	150	195	1180	945
12.0	100	150	200	1200	960

[a] Volumes in these columns are rounded to the nearest 5 ml.
[b] Feed 2-hourly for at least the first day. Then, when little or no vomiting, modest diarrhoea (< 5 watery stools per day), and finishing most feeds, change to 3-hourly feeds.
[c] After a day on 3-hourly feeds: if no vomiting, less diarrhoea, and finishing most feeds, change to 4-hourly feeds.

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Preparation of F75 & F100

F75	F100
Dried skimmed milk: 25 g	80g
Sugar: 70g	50g
Cereal flour: 35g	35g
Vegetable oil: 27g	60g
Mineral mix: 20ml	20ml
Vitamin mix:: 140mg	140m
Water to make : 1000ml	Water to make :1000ml

III. Rehabilitate

The child is given RUTFs gradually in addition to nutrition using F100 or F75 for weight gain

8. Switch to RUTF or F-100 as soon as appetite has returned and edema is resolving Weigh daily and plot weight; (150-185 kcal/ kg) > 75% daily ration)

Ready-to-use therapeutic food reference table (RUTF) (For Health Providers to instruct mothers about RUTF):

- RTUF is a food and medicine for severely malnourished individuals and It should not be shared
- Sick children often don't like to eat. Give small amounts of RUTF regularly and encourage the child to eat often until the day's ration is finished
- **RUTF should never be added to or mixed with porridge or any other food**
- For young children, continue breastfeeding on demand. **Always breastfeed fully before giving the child RUTF**
- **Always give the child RUTF after breastfeeding** but before other food, including corn-soy blend
- Always give the child plenty of breast milk or safe water to drink while eating RUTF. Children will need to drink more than normal
- Use soap to wash the child's hands and ensure that the child is clean before feeding. Keep food clean and covered

Ready-to-use therapeutic food reference table (RUTF) (For Health Providers to instruct mothers about RUTF):

- Children who are malnourished get cold quickly. **Always keep the child covered and warm**
- Do not stop feeding when the child has diarrhea. Refer children with diarrhea for clinical assessment. Increase the frequency of breastfeeding. After feeding the child RUTF, give him/her extra clean water

Reference Table for Amounts of RUTF to Give Children per Day or Week, based on 92 g Packets Containing 500 kcal		
Weight of Child (kg)	Packets per Day	Packets per Week
3.5–3.9	1.5	10
4.0–4.4	1.5	11
4.5–4.9	1.75	12
5.0–5.9	2	14
6.0–6.9	2.5	17
7.0–7.9	3	20
8.0–8.9	3.25	23
9.0–9.9	3.75	26
10.0–11.9	4	28
≥12.0	5	35

8. Transition phase:

Reference Table for Amounts of RUTF to Give Children per Day or Week, based on 92 g Packets Containing 500 kcal		
Weight of Child (kg)	Packets per Day	Packets per Week
3.5–3.9	1.5	10
4.0–4.4	1.5	11
4.5–4.9	1.75	12
5.0–5.9	2	14
6.0–6.9	2.5	17
7.0–7.9	3	20
8.0–8.9	3.25	23
9.0–9.9	3.75	26
10.0–11.9	4	28
≥12.0	5	35

Child weight (kg)	Range of volumes per 4-hourly feed of F-100 (6 feeds daily)		Range of daily volumes of F-100	
	Minimum (ml)	Maximum (ml)*	Minimum (150 ml/kg/day)	Maximum (220 ml/kg/day)
7.8	195	285	1170	1716
8.0	200	295	1200	1760
8.2	205	300	1230	1804
8.4	210	310	1260	1848
8.6	215	315	1290	1892
8.8	220	325	1320	1936
9.0	225	330	1350	1980
9.2	230	335	1380	2024
9.4	235	345	1410	2068
9.6	240	350	1440	2112
9.8	245	360	1470	2156
10.0	250	365	1500	2200

* Volumes per feed are rounded to the nearest 5 ml.

F-100 reference card

Range of volumes for free-feeding with F-100

Child weight (kg)	Range of volumes per 4-hourly feed of F-100 (6 feeds daily)		Range of daily volumes of F-100	
	Minimum (ml)	Maximum (ml)*	Minimum (150 ml/kg/day)	Maximum (220 ml/kg/day)
2.0	50	75	300	440
2.2	55	80	330	484
2.4	60	90	360	528
2.6	65	95	390	572
2.8	70	105	420	616
3.0	75	110	450	660
3.2	80	115	480	704
3.4	85	125	510	748
3.6	90	130	540	792
3.8	95	140	570	836
4.0	100	145	600	880
4.2	105	155	630	924
4.4	110	160	660	968
4.6	115	170	690	1012
4.8	120	175	720	1056
5.0	125	185	750	1100
5.2	130	190	780	1144
5.4	135	200	810	1188
5.6	140	205	840	1232
5.8	145	215	870	1276
6.0	150	220	900	1320
6.2	155	230	930	1364
6.4	160	235	960	1408
6.6	165	240	990	1452
6.8	170	250	1020	1496
7.0	175	255	1050	1540
7.2	180	265	1080	1588
7.4	185	270	1110	1628
7.6	190	280	1140	1672

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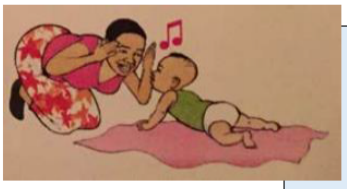
9. Stimulate emotional and sensorial development; (Use loving care, play and stimulation)

Provide tender loving care
- Help and encourage mothers to comfort, feed, and play with their children
- Give structured play when the child is well enough



ازاى تساعديه يتنبه وفهمه يتحسن:
- استخدمى أطباق للأكل بلاستكية ملونة لجذب انتباهه
- يفضل الأكل واللعب مع الأطفال الآخرين
- احضرى لعب على شكل علب الكارتون المقوى أو زجاجات بلاستيك ملونة ممكن تنضيفها وغسلها
- الأنشطة يجب أن تشجع على الحركة والكلام فالرضع الذين لم يبدأوا المشى تقوم الأم بتحريك الأرجل والأيدى خاصة أثناء حمام الماء الدافيء وبالنسبة للأطفال فالتدحرج على مرتبة، أوالمشي، أو رمي ومطاردة الكرة من الأنشطة المفيدة

IV. Prepare for Discharge

10. Prepare for discharge and follow-up

Transferred to outpatient care when

i. They do not have any danger signs for at least 24-48 hours prior to transfer time; and
ii. The medical problems that prompted their admission have resolved to the extent there is no longer requirement for inpatient care; and
iii. They do not have ongoing weight loss (among infants & children admitted with wasting only, who did not have nutritional edema at any time); and
iv. Their nutritional edema is no longer grade +++ and is resolving; and
v. ***They have a good appetite***
vi. All attempts have been made to refer children with medical problems needing mid or long-term follow-up care and with a significant association with nutritional status to appropriate care/support services and/or the limits of inpatient care have been reached.

The decision of transfer to outpatient care should not be made on the basis of anthropometric criteria such as a specific weight-for-height/length or mid-upper arm circumference.

10. Prepare for discharge and follow-up

Obtain information on family background and socioeconomic status
- Instruct mothers how to modify family foods, how often to feed and how much to give
- Establish a link with community health workers for home follow-up
- Write full clinical summary in patient-held card
- Send a referral letter to the outpatient clinic
- If outpatient management of severe malnutrition exists, inform the mother of the closest outpatient care referral point to her home and give the mother a weekly ration of RUTF for home-based rehabilitation

MANAGEMENT of Infants and Children 6-59 Months with Moderate Wasting

Infants and Children aged 6–59 Months of age with Moderate Wasting defined as:
- **Weight-for-height between 2 and 3 z-scores below the WHO child growth standards median and/or**
- **Mid-Upper Arm Circumference (MUAC) 115 mm or more and less than 125 mm,**
- **Without oedema**

Outpatient Care

Dietary Management of Infants and Children with Moderate Wasting

Comprehensive assessment andsolving medical and psychosocial problems that lead to or exacerbating this episode of wasting.

They should have access to *a nutrient-dense diet* to fully meet their extra needs for recovery of weight and height and for improved survival, health, and development, alone or combined with Supplementary feeding and routine medications & individual care

Psychosocial Stimulation **can be defined as the sensory information received from interactions with people and environment. examples include talking, smiling, pointing, enabling, and demonstrating, with or without objects.**
This also includes responsive feeding

Nutrient-Dense Foods

are those high in nutrients relative to their caloric content, that is they have a relatively high content of vitamins, minerals, essential amino acids and healthy fats. Examples of nutrient-dense foods include animal source foods, beans, nuts, and many fruits and vegetables. enable children to consume and maximize the absorption of nutrients in order to fulfill their requirements for energy and all essential nutrients.

Animal Sources are more likely to meet the amino acid and other nutrient needs of recovering children, such as **Milk and its products, egg, meat, poultry, fish**

Plant Sources
in particular legumes or a combination of cereals and legumes also have high-quality proteins, although they also contain some anti-nutrients such as phytates, tannins or inhibitors of digestive enzymes, which may limit the absorption of some micronutrients, particularly minerals.

Dietary Management of Infants and Children with Moderate Wasting

Prioritizing Specially Formulated Food (SFF)

Prioritizing specially formulated food (SFF) for:
Individual child factors

- **Mid-upper arm circumference (MUAC) 115-119 mm**
- **Weight-for-age z-score (WAZ) <-3 SD**
- **Age <24 months**
- **Failing to recover from moderate wasting after receiving other interventions (e.g. counseling alone)**
- **Having relapsed to moderate wasting**
- **History of severe wasting**
- **Co-morbidity (serious or chronic), TB, or a physical or mental disability**

Social factors:

- **Severe personal circumstances, such as mother died or poor maternal health and well-being.**

These factors can be used in all contexts, including humanitarian crises if further

the combination of a recent or ongoing humanitarian crisis and a high-risk context, for **ALL children,** SFF should be considered **along with counseling and the provision of home foods for them and their families**

High-risk contexts are defined as:

- **High rates of food insecurity; and/or**
- **Poor water quality and sanitation (or poor WASH indicators); and/or**
- **Low-income status / low socio-economic status; and/or**
- **High incidence/prevalence of wasting and/or nutritional oedema, which could be seasonal**

A hierarchy of Specially Formulated Food (SFF) Type is recommended

may be adapted for different contexts taking into account feasibility, acceptability and equity considerations

(1) • Lipid-based nutrient supplements (LNS) either RUSF or RUTF are the preferred type.

(2) •When LNS are not available, Fortified Blended Foods (FBF) with added sugar, oil, and/or milk (improved FBFs)

(3) •FBF with no added sugar, oil, and/or milk.

Dietary Management of Infants and Children with Moderate Wasting

Dietary Management of Infants and Children with Moderate Wasting

Dietary Management of Infants and Children with Moderate Wasting

- **Specially Formulated Foods (SFFs) should be given to provide 40-60% of the total daily energy requirements to achieve anthropometric recovery.**
- **Total daily energy requirements needed to achieve anthropometric recovery are estimated to be around 100-130 kcal/kg/day to recover from moderate wasting (non-malnourished children of the same age have total daily energy needs of ≈ 80 kcal/kg/d)**

Outpatient Management of Infant and Children 6-59 months with Moderate Wasting

Exit (from Outpatient) from Nutritional Treatment

The guideline development group (GDG) acknowledged that children who are clinically well with one measurement normalized and not the other (despite comprehensive treatment) **can be considered to be safe to exit care after full clinical evaluation by** *health professional* **and a follow up visit planned.**

A follow-up visit within a month of exit should be arranged to assess if the child is still clinically well and hasn't deteriorated in terms of their nutritional and clinical status.

When all of the following conditions are met:

a) *Their weight-for-height/length z-score is >= 2 standard deviations (SD) below the WHO child growth standards median (WHZ or WLZ) and / Their mid-upper arm circumference (MUAC) is equal to or greater than 12.5 cm observed for at least 2 consecutive visits / measurements; and / They have had no nutritional oedema for at least 2 consecutive visits/measurements.*

b) Percentage weight gain and absolute weight gain should not be used as exit criteria

c) Children with medical problems needing mid or long-term follow-up care and with a significant association with nutritional status (e.g. HIV, tuberculosis, congenital heart disease, cerebral palsy) and/or additional social factors (e.g. household food insecurity, vulnerable household) have also been referred to appropriate care/support services care and the limit of care has been reached for outpatient care for severe wasting and/or nutritional oedema.

IMPORTANT

Anthropometric Recovery in infants and children 6-59 months is defined as

- **weight-for-height -or -length z-score >= 2 SD below the WHO child growth standards median (WHZ or WLZ)**
- **and/or MUAC equal to or greater than 125mm (depending on whether the child was admitted on WHZ/WLZ or MUAC or both),**
- **and no nutritional oedema for at least two consecutive outpatient visits.**

Dietary Management of Infants and Children with Moderate Wasting

The comprehensive assessment and treatment could include interventions such as ***vaccination*** and **assessment and follow-up for medical problems needing mid or long-term follow-up care** and with a significant association with nutritional status and health & nutritional counseling (health and nutrition for preventing relapse, and psychosocial care (e.g. play therapy).

Initiative Nutritional Assessment Date of Visit: Date of Birth or age in months Name: Sex: **Weight:** gm **Height** cm **Weight/Height ZSMUAC** cm **Edema:** + ++ +++ **Interpretation:** **SAM MAM mild malnutrition**		
Clinical Assessment Yes/No	**Dietary Assessment**	**Laboratory Assessment**
• **Alertness:**	• **Appetite test:**	• **Blood Glucose:**

Conscious **Semi-conscious** **Apathetic** **Unconscious** **<u>Shock if Yes</u>** − **Give Oxygen** − **Sterile 10 % glucose (5 ml/kg) by IV** − **Keep the child warm** − **measure and record pulse and RR/10 m** − **If improved** over a period of 1 hour (pulse and RR rates fall) − **Repeat IV 15 ml/kg for 1 more hour Then give 5−10 ml/kg ORS in alternate hours with F-75 for up to 10 hours** • **<u>Attitude:</u>** **Irritable** **Response to others** **Toxic look** **else**	**use RUT formulae according to schedule:** **amount that should be eaten =** **pass/fail** **amount left over** • **<u>Last 24 hours Recall</u>**	mg/dl **(Hypoglycemia <54 mg/dl)** − Give a bolus of 50ml (10% glucose) orally Or via nasogastric tube (if unable to drink), Or − (if unconscious) first give glucose (IV) (5 ml/kg of sterile 10% glucose) then nasogastric bolus − Start feeding with F-75 immediately following the Feeding schedule (2-hourly feeds) − **For all children: Feed straight away and then every 2–3 hours, day and nigh**
Hypothermia Rectal/axillary Take temperature every 30 minutes until it becomes normal and stop rewarming when it rises above 36.5ºC (or 36ºC axillary) **Fever** • **<u>Breathing:</u>** **Distress** **<u>Respiratory Rate:</u>** **<2 months:** **< 60 breaths/minute**** **2–11 months:** **< 50 breaths/minute**** **12–59 months:** **< 40 breaths/minute**	**Dietary History:** • **Weaned/not** • **<u>Breast Feeds</u>** ***<u>(complete Evaluation Sheet when appropriate)</u>*** • **<u>Correct positioning</u>** • **ArtificialFormula** **No. /day** **Volume/Feed** **Scoops/30 ml** • **Supplementary** Food Amount/d	• **Hemoglobin** **Hb** g/dl **Anemia** **Septic Shock:** **Treat 1ry cause +** ▪ Give maintenance fluids (4 ml/kg/h) and ▪ Order **10 ml/kg fresh whole blood** and when blood is available, stop IV fluids ▪ Give a diuretic ▪ Transfuse whole fresh blood (10 ml/kg) **slowly (over 3 hours)** ▪ **If signs of heart failure:** ✓ Give packed cells instead of whole blood ✓ Treat septic shock
• **<u>Circulatory:</u>** Cold extremities Capillary refill **<u>Pulse Rate:</u>** **0 to 1 years:** **100– 160 beats per minute** **1 to 3 years:** **90– 150 beats per minute** **3 to 6 years:** **80– 140 beats per minute**	**Frequency Pattern** **(For Food Groups)** **(When applicable)**	

- **<u>Dehydration</u>:**

Recent sunken Eye
Skin integrity
Tongue/mouth
Tears Thirsty
Eczema
Skin infections/wounds
Diarrhea
watery
bloody
Vomiting
Passed Urine

<u>If Dehydrated:</u>

- Give 5 ml/kg every 30 minutes for 2 hours (orally or by nasogastric tube)
- (**if the child has already received IV fluids for shock** and is switching to ORS Then give ORS **5–10 ml/kg for up to 10 hours** (in alternate hours with F-75 formula)
- **Stop giving ORS** when there are 3 or more hydration signs (<u>less thirsty, less lethargic, slowing of respiratory and pulse rate, passing urine, not thirsty</u>) or
- if the child has reached any signs of **<u>Over hydration:</u>**
  - Increasing pulse (25 beats/m) and respiratory rate (5 breaths/m)
  - Increasing edema and puffy eyelids

Thereafter: -
Check at least hourly

- **<u>Handicapping:</u>**

Physical
Mental
Delayed Growth
Delayed Development

Plan for Feeding

Support Breast Feeding as possible:

- Mother/care giver
- Relactation
- Wet nursing

Supplementary Food:

<u>No Edema:</u>

- **Expressed Breast Milk**
- **Commercial Infant formula**
- **F-75 or**
- **<u>diluted</u> F-100**

<u>Edema:</u>

Commercial (generic) infant formula or F-75

(Full-strength F-100 should not be given if they are clinically unstable and/or have diarrhea or dehydration and/or nutritional edema (due to the renal solute load of this therapeutic milk and risk of hyponatremia dehydration)

- **Infection:**

<u>From day 1 and for all children:</u>
***<u>Gentamicin</u>** IV or IM**
7.5 mg/kg ONCE per day
For 7 days
***<u>Ampicillin:</u>*IM or IV**
50 mg/kg/6 hr for 2 days
<u>Followed then by</u>
***<u>Amoxicillin</u>*orally**
25–40 mg/kg /12 hr
For 5 days
<u>If serious complications</u>(e.g. severe sepsis, shock)
orresistance to amoxicillin and ampicillin, give:

- ***Cefotaxime*IV children & Infantsolder than 1 month**
  50 mg/kg/8–12 hr
- ***Ciprofloxacin*orally**
  10–20 mg/kg/day for 5 days

<u>For staphylococcal infection</u>
ADD
<u>Cloxacillin</u>
25–50 mg/kg/6 hr per day for14 to 21 days

Box 1. SIMPLE ROUTINE ASSESSMENT AND HELP WITH BREASTFEEDING

[adapted abstract from Integrated Management of Childhood Illness (87)]

1. **Ask the mother:**
   - Is there any difficulty feeding?
   - Is the infant breastfed? If yes, how many times in 24 hours
   - Does the infant usually receive any other foods or drinks? If yes, how often?
   - What do you use to feed the infant?

2. **Weigh the infant, and determine weight for age.**

3. **If an infant:**
   - Has any difficulty feeding
   - Is breastfeeding less than 8 times in 24 hours
   - Is taking any other foods or drinks or
   - Is low weight for age

   Assess a breastfeed for 4 minutes (if necessary, wait until the infant is ready to feed).
   Look for signs of good attachment and effective suckling.

4. **Signs of good attachment:**
   - Chin touching breast
   - Mouth wide open
   - Lower lip turned out
   - More areola visible above than below mouth

5. **Signs of effective suckling:**
   Slow deep sucks, sometimes pausing

6. **If any signs of good attachment are not present, teach correct positioning and attachment**

   - Show the mother how to hold her infant:
     - With the infant's head and body straight
     - Facing her breast, with the infant's nose opposite her nipple
     - With the infant's body close to her body
     - Supporting infant's whole body, not just head and neck

   - Show her how to help the infant to attach. She should:
     - touch her infant's lips with her nipple
     - wait until her infant's mouth is wide open
     - move her infant quickly onto her breast, aiming the infant's lower lip well below the nipple.

   - Look for signs of good attachment and effective suckling.
   - If the attachment is not good, try again.

7. **When the attachment is good:**
   advise the mother to breastfeed as often and for as long as the infant wants, day and night, at least 8 times a day.

8. **If an infant less than about 6 months old is receiving other foods or drinks:**
   counsel the mother about breastfeeding more, reducing other foods or drinks, and using a cup for the other food and drinks until they can be stopped.

9. **If the infant is not breastfeeding at all, refer for breastfeeding counselling and possible relactation.**

5, 14,15,16,17,18,19,20

Limitations and suggestions for further research needs

Future research recommendations for the management of Wasting in children in the Egyptian context could include:

- More epidemiological researches (determinants of acute malnutrition)
- Studies on alternative cheap, nutritious and local recipes
- Efficacy studies on the management protocols

These recommendations aim to address specific challenges and characteristics of the Egyptian context, potentially leading to more effective prevention and management strategies for **Wasting** in children.

Challenges

- Socially and economicallyunprivileged population
- Nutritional illiteracy
- Lack of enough trained healthcare workers to deal with these problems
- Limited resources

Strengthen the evidence base of the next update of this guideline by generating GRADE summary of finding tables, evidence profiles, and EtD frameworks.

Monitoring and evaluating the impact of the guideline.

The following are three performance measures or indicators for implementing this adapted CPG for Wasting in children:

1. **Adherence to Wasting Guidelines**
   - *Numerator:* Number of children with wasting who received treatment as per guideline recommendations.
   - *Denominator:* Total number of children diagnosed with wasting.
   - *Data Source:* Hospital or clinic patient records.
2. **Duration of Hospital Stay**
   - *Numerator:* Total number of hospital stay days for children with SAM
   - *Denominator:* Total number of children admitted with SAM
   - *Data Source:* Hospital admission and discharge records.
3. **Rate of Readmission**
   - *Numerator:* Number of children readmitted with symptoms of SAM within a certain period (e.g., 30 days) after discharge.
   - *Denominator:* Total number of children initially admitted with SAM.
   - *Data Source:* Hospital readmission records.

These key performance indicators are designed to measure the effectiveness and adherence to the guidelines, the efficiency of the treatment in terms of resource utilization (hospital stay), and the success of the treatment in preventing further complications (readmissions).

Updating of the guideline

The EPG WGAG has decided to conduct the next review of this adapted CPG for updates after three years. This should be carried out in 2027 after checking for updates in the source CPGs, consultation of expert opinion on the changes needed for updating according to the newest evidence and recommendations published in this area and the clinical audit and feedback from implementation efforts in the forementioned local healthcare settings except if any breakthrough evidence- based recommendations are published before that date. The updating will be guided by the Checklist for the Reporting of Updated Guidelines (CheckUp) that is one of the AGREE Tools

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21. يونيسيف، منظمة الصحة العالمية، منظمة الأغذية والزراعة: كتيب رسائل للأمهات عن تغذية وغذاء السرة للأولويات بمنطقة شرق البحر البيض المتوسط. المشروع الاقليمي للتدريب فى مجال الغذاء و التغذية

22. المعهد القومى للتغذية: وجبات مقترحة للأطفال. نصائح للوقاية من الاصابة بسوء التغذية

23. المعهد القومى للتغذية: أمثلة لوجبات غنية بالحديد

Annexes

Annex Table 1.
Conflict of Interest

Egyptian Pediatric Clinical Practice Guidelines Committee (EPG) *Guideline Adaptation Group (Clinical subgroup)*			
Name	**Affiliation, Area of expertise / Role, Country / Primary location [work]**	**Declaration of interests**	
		Interest identified	**Management plan & decision**
Prof. Sahar Khairy	Professor of Pediatrics Dean of National Nutrition Institute, Egypt	Non	Not Applicable
Prof. Sanaa Yousef	Professor of Pediatrics Ain Shams University, Egypt	Non	Not Applicable
Prof. Dina Shehab	Professor of Pediatrics, Clinical Nutrition Consultant, and previous Head of Clinical Nutrition Department, National Nutrition Institute, Egypt	Non	Not Applicable
Prof. Hoda Ahmed Atwa	professor and Head of Pediatrics Department, Suez Canal University	Non	Not Applicable
Prof. Yasmin Gamal El Gendy	Associate professor of pediatrics, Ain Shams university	Non	Not Applicable

Prof. Eman Habib	Assistant Professor of Pediatrics, Clinical Nutrition Consultant, Head of Clinical Nutrition Department, National Nutrition Institute, Egypt	Non	Not Applicable
Dr. Enas Sayed Abbas	Lecturer of Pediatrics & Clinical Nutrition Consultant, IBCLC National Nutrition Institute, Egypt	Non	Not Applicable
Dr. Enas Mohamed Fawzy Mowafy	MD Pediatrics, Nutritionist, Head of Statistics Unit, National Nutrition Institute, Egypt	Non	Not Applicable
Guideline Adaptation Group (Methodology Subgroup)			
Prof.Ashraf AbdelBaky	Professor of Pediatrics, MTI, AFCM/ Ain Shams University, Egypt Chair of EPG	Non	Not Applicable
Dr. Nanis Sulieman	Associate Professor of Pediatrics Ain Shams University, Egypt	Non	Not Applicable
Dr Lamis Mohsen	Lecturer of Pediatrics, Faculty of Medicine, Modern University for Technology and Information (MTI), Egypt	Non	Not Applicable
Dr Ahmad Yousef	Lecturer of Pediatrics,Faculty of Medicine, Modern University for Technology and Information (MTI), Egypt	Non	Not Applicable
Dr Nahla Gamaleldin	Lecturer of pediatrics, Faculty of Medicine, Modern University for Technology and Information (MTI), Egypt	Non	Not Applicable
Dr Mona Saber	Lecturer of Pediatrics, Faculty of Medicine, Modern University for Technology and Information (MTI), Egypt	Non	Not Applicable
External Review Group			
Prof. Mostafa El Hodhod	Professor of Pediatrics, Ain Shams University, Egypt	Non	Not Applicable
Prof. Osama Al Eshery	Professor of Pediatrics, Assuit University, Egypt	Non	Not Applicable
Prof. Sahar Ali	Professor of Pediatrics, National Nutrition Institute, Egypt	Non	Not Applicable
External Reviewer for methodology			
Prof. Yasser Samy	Chair, Adaptation working Group, Guidelines International Network, Scotland. Pediatrics Department and Clinical Practice Guidelines Unit, King Saud University, Saudi Arabia.	Non	Not Applicable

International Peer Reviewers			
WHO			
UNICEF			

Web annexes

The following annexes can be added as a package of standalone supplementarydocuments.

Keywords: The MeSH terms for "Guideline for the prevention and management of wasting and nutritional edema (acute malnutrition) in infants and children under 5 years " on PubMed are: acute malnutrition, wasting,nutritional edema /under five children, infant, wasting, acute malnutrition / prevention, wasting, Acute malnutrition/ management, wasting, acute malnutrition / RUTF, wasting, acute malnutrition / dehydration, wasting, acute malnutrition / F75, F100, wasting, acute malnutrition / post exit, , wasting, acute malnutrition / referral, wasting, acute malnutrition / inpatient, wasting, acute malnutrition / outpatient, wasting, acute malnutrition

Annex Table 3. Results of the AGREE II assessment of the three source guidelines for CAP.

AGREE II/ CPGs	**WHO**
Domain 1 (Scope)	94%
Domain 2 (Stakeholder)	78%
Domain 3 (Rigour)	86%
Domain 4 (Clarity)	94%
Domain 5 (Applicability)	75%
Domain 6 (Independence)	86%
Overall assessment 1	86%
Recommend for use (Overall assessment 2)	YES 4,Yes with modifications 2

Annex Nurses and ParentsEducational Guide in Arabic

تعليمات عند الخروج من الحجز:

- احضري للمتابعة كل أسبوعين حتى في غياب أي شكوى
- الالتزام بالتطعيمات حسب الجدول
- استمرار الرضاعة الطبيعية بالإضافة الي الأكل الأكل
- سيتم صرف وجبات جاهزة تساعدك في تغذيته
- كل ٦ شهور له دواء مطهر للبطن و جرعة من فيتامين أ بالفم حسب المكتوب بكارت المتابعة

لزيادة تركيز والانتباه عند الطفل :

استخدمى أطباق للأكل بلاستكية ملونة لجذب انتباهه

- اصنعي لطفلك لعب من علب الكرتون او الزجاجات البلاستيك او الأقمشة وغيره
- يفضل الأكل واللعب مع الأطفال الآخرين
- لعب الأم مع الطفل يساعد على سرعة الشفاء
- الأنشطة يجب أن تشجيع الطفل على الحركة والكلام فالرضع الذين لم يبدأوا المشى تقوم الأم بتحريك الأرجل والأيدى خاصة أثناء حمام الماء الدافيء وبالنسبة للأطفال فالتدحرج على مرتبة، أوالمشي، أو ري ومطاردة الكرة من الأنشطة المفيدة

استمرى في الرضاعة الطبيعية

الالتزام بالتطعيمات

اللعب مع الطفل يساعد علي الشفاء

متي يجب الذهاب لأقرب مركز بدون تأخير:

- عندما يرفض الرضاعة
- عند فقدان الشهية للأكل او الشراب
- القيء بدون سبب
- كسلان او همدان
- تورم بالقدمين أو الرجلين أو الايدين أو الذراعين
- سخونه عاليه
- سرعة التنفس ويتنفس بصعوبة
- اسهال لأكثر من يوم أو دم فى البراز
- عدم زيادة الوزن أو فقدان الوزن

يجب عقد جلسات تثقيفية للأمهات عن طرق التغذية الصحيحة والمناسبة لم هو متاح وممكن تنفيذه بما يتناسب ووضع الأسرة الاقتصادى(اعتمادا على بيانات التاريخ الغذائى ومعدلات الاستهلاك للأصناف الغذائية)

اختيار الأطعمة للوجبات

أنواع الأطعمة التي يمكن أن تتكون منها الوجبات:

الحبوب:

القمح والأرز والذره - دقيق القمح ودقيق الذرة ودقيق الأرز – المكرونة والشعرية والبليلة والبرغل – الخبز البلدى والشامى والشمسي وخبز الذرة.

الحبوب وجبة غير كاملة لأنها لا تمد الجسم بكل احتياجاته لذلك يجب تناولها في كل وجبة مع أنواع أخرى من الأطعمة مثل البقول.

البقول:

الفول والعدس – الفاصوليا واللوبيا الجافة –البسلة والحمص والترمس – الفول السودانى وفول الصويا – الطحينة والسمسم

ويمكن استعمال **البطاطس والبطاطا** بدلا عن الحبوب

البقول يجب طهيها جيدا مع نزع القشرة

الخضروات الخضراء والفواكة الصفراء والبرتقالى:

من الأطعمة المفيدة جدا وأفضل استعمال لها أن تكون جزءا من وجبة تحتوى على أطعمة من نوعين أو تلاتة وكلما كانت الخضرة داكنة كانت الخضروات مغذية أكتر ... أمثلة

الملوخية والسبانخ والخبيزة – السلق والسريس والشيكوريا – الجرجير والكرات وأوراق الفجل

أمثلة للفواكة الصفراء والبرتقالى: جزر أصفر وقرع عسلى والكنتالوب والشمام والمشمش

والطماطم والخيار من الفاكهة وتحتوى على عناصر غذائية مفيدة

يجب عقد جلسات تثقيفية للأمهات عن طرق التغذية الصحيحة والمناسبة لم هو متاح وممكن تنفيذه بما يتناسب ووضع الأسرة الاقتصادى(اعتمادا على بيانات التاريخ الغذائى ومعدلات الاستهلاك للأصناف الغذائية)

الحبوب	البقول
خبز	فول نابت أو مدمس أو بصارة
خبز	عدس
خبز	لوبيا أو فاصوليا
أرز	عدس (كشرى)
أرز + مكرونة	عدس + حمص (كشرى)
خبز	طحينة أو حلاوة طحينية

الحبوب	البقول	الخضروات والفاكهة
خبز	فول مدمس أو طعمية	جرجير
أرز	فاصوليا أو لوبيا جافة	شمام
خبز	عدس أو بصارة	فجل
أرز	عدس (كشرى)	سلطة (طماطم و جزر وجرجير)

يجب عقد جلسات تثقيفية للأمهات عن طرق التغذية الصحيحة والمناسبة لم هو متاح وممكن تنفيذه بما يتناسب ووضع الأسرة الاقتصادى(اعتمادا على بيانات التاريخ الغذائى ومعدلات الاستهلاك للأصناف الغذائية)

أمثلة لوجبات من الحبوب والبقول والأطعمة الحيوانية:

الحبوب	البقول	الأطعمة الحيوانية
خبز	فول مدمس أو طعمية	بيض
خبز	طحينة	سمك
أرز	عدس (كشرى)	بيض

الحبوب	الأطعمة الحيوانية
بليلة قمح	لبن
خبز	جبن أبيض
خبز	بيض
أرز	سردين
مكرونة	كبده فراخ أو لحم مفروم
خبز	لبن زبادى

الأطعمة الحيوانية: مغذية جدا لكنها غالية الثمن واذا أتيحت مثلا قطعة من الجبن فيجب أن توزع على وجبتين أو ثلاثة

أمثلة لوجبات من الحبوب والأطعمة الحيوانية:

ويعتبر اللبن والجبن الأبيض والبيض من أفضل الأطعمة للأطفال في مراحل النمو والحرص على تناولها ولو ثلاث مرات فى الأسبوع مفيد جدا

المعهد القومي للتغذية

وجبات مقترحة للأطفال

٤-٦ سنوات

النظام الأول

إفطار ثلاث أرباع رغيف بلدى –
٢ ملعقة كبيرة عسل أسود –
ملعقة كبيرة فول مدمس بالزيت–
ثمرة صغيرة طماطم.

غداء ثلاث أرباع رغيف بلدى –
طبق فاصوليا بيضاء صغير –
طبق سلطة صغير.

عشاء ثلاث أرباع رغيف بلدى –
قطعة حلاوة طحينية
فى حجم البيضة –
عدد ٢ طعمية –
ثمرة صغيرة طماطم.

قبل النوم كوب لبن صغير.

المعهد القومي للتغذية

وجبات مقترحة للأطفال

٤-٦ سنوات

النظام الثاني

إفطار نصف رغيف بلدى – قطعة
حلاوة طحينية فى حجم البيضة –
بيضة مقلية –كوب لبن صغير.

بين الوجبات كوب متوسط من عصير الفاكهة.

غداء نصف رغيف بلدى – طبق أرز
صغير – قطعة لحم متوسطة–
طبق خضار صغير – طبق
صغير سلطة خضراء.

عشاء ربع رغيف بلدى –
٢ ملعقة كبيرة عسل أسود –
كوب زبادى – ثمرة طماطم.

قبل النوم كوب لبن متوسط.

المعهد القومي للتغذية

وجبات مقترحة للأطفال

٤-٦ سنوات

النظام الثالث

إفطار نصف رغيف بلدى –
٢ ملعقة كبيرة عسل أبيض –
بيضة مقلية – كوب لبن صغير–
ثمرة صغيرة طماطم.

بين الوجبات كوب متوسط من عصير الفاكهة.

غداء نصف رغيف بلدى – طبق أرز صغير–
قطعة متوسطة لحم محمر–
طبق خضار صغير –
طبق صغير سلطة خضراء –
ثمرة من فاكهة الموسم.

عشاء نصف رغيف بلدى –
زبدة بالمربى
(نصف ملعقة كبيرة زبدة +
٢ملعقة كبيرة مربى) –
جبنة بيضاء فى حجم قطعة النستو–
ثمرة طماطم.

المعهد القومى للتغذية

أمثلة لوجبات غنية بالحديد

إفطـــار	غـــذاء	عشـــاء
• طبق متوسط من الفول المدمس باللیمون والزیت والتوابل. (٥ ملاعق كبيرة فول + ملعقة صغيرة زيت + ملعقة صغيرة ليمون) • ٢ ملعقة عسل أسود. • جرجير وطماطم. • رغيف خبز أبيض.	• كشري بالصلصة (طبق كبير). (عدس بجبة + أرز + بصل + زيت + حمص شام). • سلطة خضراء بالليمون. (طماطم + خس + جزر +بنجر + بصل + ليمون). • ثمرة برتقال أو فاكهة الموسم. • بيضة مسلوقة.	• قطعتين جبن قريش بحجم مثلث الجبن. • قطعتين حلاوة طحينية بحجم مثلث الجبن. • جرجير + طماطم . • رغيف خبز فينو أو أبيض
• طبق متوسط فول بالبيض + زيتون أسود (خمس حبات). • طبق متوسط سلطة خضراء. • رغيف خبز. • كوب عصير ليمون أو برتقال.	• ٢ قطعة متوسطة أو قطعة كبيرة كبده مشوية أو محمرة. • قطعة مكرونة بالبشاميل أو مكرونة بالصلصة أو عدد ١٠ أصابع محشو كرنب بالأرز والخضرة والطماطم وقليل من اللحم المفروم. • سلطة خضراء. (تحتوي على الأوراق الخضراء مثل الخس ، البقدونس ، الجرجير. بالإضافة إلى الطماطم والجزر والليمون). • فاكهة الموسم . (برتقال / جوافة)	• عدد ٢ قطعة كبيرة بيتزا بالزعتر والفلفل الأخضر واللحم المفروم أو الفراخ. • عصير برتقال أو واحدة من الجوافة أو الخوخ.
• عدد ٣ طعمية متوسطة. • عدد ٢ شريحة باذنجان مشوي ومهروس بالخل والثوم والبقدونس. • رغيف خبز.	• طبق كبير عدس اصفر (يضاف عند الطهي جزر + طماطم + بصل + ثوم). • سلطة خضراء بالليمون والبصل (تحتوي على خضروات خضراء وصفراء وحمراء). • رغيف خبز مقدد. • فاكهة الموسم (ثمرة).	• كوب كبير بليلة باللبن. (ويمكن تحليتها بالعسل الأسود). • ثمرة جوافة


المعهد القومى للتغذية
أمثلة لوجبات غنية بالحديد
إفطار
• عدد ٢ بيضة مسلوقة أو محمرة في السمن.
• رغيف خبز.
• قطعة جبن قريش.
(بحجم البيضة)
• جرجير.
• عصير برتقال أو ليمون
أو كمبوت خوخ أو مشمش.
غداء
• طبق كبير خضار سوتيه.
(كوسة ، خرشوف ، بطاطس ، فاصوليا ، جزر،
فلفل رومي ، بصل).
• قطعة متوسطة لحم مشفى .
• طبق متوسط من الأرز.
• طبق سلطة.
• فاكهة الموسم .
(برتقال أوجوافة
أو خوخ أو تفاح أو مشمش).
عشاء
• عدد ٢ قطعة متوسطة كبده مشوي.
• رغيف خبز.
• طبق سلطة متوسط
(مجموعة خضروات خضراء وصفراء وحمراء +
ليمون)
• فاكهة الموسم.
• فول بالزيد والبيض.
(٤ ملاعق فول + بيضة + ملعقة كبيرة زبده).
• رغيف خبز.
• سلطة خضراء بالليمون
أو جرجير.
• عصير فاكهة
أو فاكهة الموسم.
• طبق أرز متوسط بالكبد والقوانص.
• طبق متوسط خضار الموسم.
• طبق صغير سلطة خضراء.
(يحتوي على مجموعة خضروات خضراء
وصفراء وحمراء + ليمون).
• فاكهة الموسم
مثل البرتقال أو الجوافة.
• فاصوليا جافة مسلوقة.
بالزيت والليمون.
• عسل أسود.
• رغيف خبز أبيض.
بين الوجبات: • من الممكن تناول كوب حلبة محلي بالعسل الأسود.
أو حمص الشام أو بسكويت بالعجوة.
أو ٣ حبات تمر
قبل النوم: • كوب لبن أو زبادي (متوسط)
MILK
MILK
• يجب مراعاة تقليل السكريات والدهون في حالات زيادة الوزن
• لابد من مراجعة طبيبك كل فترة لعمل التحاليل اللازمة وعلاج أسباب الأنيميا إن وجدت.

21,22,23