Practice Guidelines

For Family Physicians

Volume 1

Preface

Primary Health Care, PHC (through the Family Medicine) is the cornerstone to achieve the Universal Health Coverage which is considered as the safety net for implementing the Social Health Insurance.

The Ministry of Health and Population aims at improving the quality of health care service provided for all population groups in Egypt especially at Primary Health Care level. These goals couldn't be achieved without the development and capacity building of human resources for of health focusing on PHC Doctors (Family Physicians).

Family Practice is the core business in providing PHC services, so, developing and updating the Practice Guideline and Treatment Protocol is the foundation of offering quality care.

Through applying these Guideline the Family Physicians are capable and committed to the milestones and benchmarks of providing the basic benefits package of PHC services with the agreed and standard level of quality.

It's also mandatory to monitor and supervise the performance of providers and satisfaction of clients through parallel and comprehensive tools.

We are sure that Egyptian PHC Doctors can perfectly maximize the befits of utilizing these Guidelines for improving health of our population and subsequently the quality of life that leads the sustainable development for our Nation.

H.E. Prof. Dr.

Ahmed Emad El Din Rady

Minister of Health and Population

Egypt

This new edition of "Practice Guidelines For Family Physician " was updated, reprinted and issued on April , 2016 by the Ministry of Health and Population, Egypt

Message from His Excellency

Prof. Dr. Hatem El Gabaly

Comprehensive development and modernization is one of Egypt's priorities and pursued objectives. Out of this rule, we are committed towards improving the quality of health care services available for all Egyptians; adults, children, the poor and the well-off.

The Ministry of Health and Population has adopted, as a top priority, developing current systems to provide and finance health services in guidance and vision of the political leadership to ensure high quality in service provision and meet needs and expectations of the population as well as keeping up with top-notch developments at all levels - primary, preventive, curative, diagnostic and rehabilitation.

This vision has been translated into a promising and ambitious Five Years Plan to institutionalize the Health Sector Reform Program on the national level. The plan is focusing on implementing the Family Health Model at all primary health care facilities in the 27 Governorates.

Our dream has been realized into a competent program of Health Sector Reform aiming to provide every person with high quality health services. These include physical, psychological and social welfare, which translate into high production and progress for our cherished Country, Egypt.

I am delighted to introduce to one of the important publications for the Sector of Technical Support and Projects, representing a great team effort "**Practice Guidelines for Family Physicians**" for the family physician at all Family Health Unites of MOHP Distributed all over the Country .

Prof. Dr. Hatem El Gabaly

Minister of Health and Population

Preface

The Ministry of Health and population is working diligently to achieve equal and available quality health services for all citizens of Egypt. Our objective is to shape national policies for the goal of advancing health care delivery in all parts of the country.

Six years ago, the Ministry has adopted new policies and strategies in order to provide basic health services of high quality for all citizens in the framework of the Family Health Model. This has led to introducing new financing mechanisms that ensure the sustainability of finance and resources, and availability of affordable services along with effectiveness and efficiency of these services.

Having made situational analysis in details, highlighting points of weaknesses and strengths and defining actual needs, strategic plans were subsequently developed putting into practice the reforming infrastructure and human resources as well as partnerships between governmental, private and national sectors.

It gives me great pleasure to present this document. This system is in continuous reform, progressing incrementally, refining the knowledge base, and modifying concepts. This document is not the end product, but rather the first step of many others.

However, I hope it will help us towards our ultimate goal of a quality, effective, efficient, evidence based service to all Egyptians irrespective of geographical or social economic barriers.

The document is a collaborative work of the Ministry of Health and Population staff, and the Sector for Technical Support and Projects on both central and peripheral levels. Work in this document is subjected to continuous assessment, operation research, many of the issues presented in this document will be updated in further version.

Dr. Emam Mossa
Undersecretary of the Sector for Technical Support and Projects

Table of Contents

5- Integrated Management Of Childhood Illness

List of Figures

List of Tables

Abbreviations and Acronyms

BBP	: Basic Benefits Package
BPM	: Beat Per Minute
CDAs	: Community Development Agencies
CDAs	: Community Development Associations
CHC	: Community Health Committee
CPI	: Client-Provider Interaction
CQI	: Continuous Quality Improvement
DOTS	: Directly Observed Treatment Short Course
DPO	: District Provider Organization
EDL	: Essential Drug List
FHC	: Family Health Center
FHF	: Family Health Fund
FHT	: Family Health Team
FHU	: Family Health Unit
FP	: Family Physician
G6PD	: Glucose-6-Phosphate Dehydrogenate
H/MIS	: Health/Management Information System
HMHC Project	: Healthy Mother/Healthy Child Project
HR	: Heart Rate
HSRP	: Health Sector Reform Program
IMCI	: Integrated Management of Childhood Illness
IU	: International Unit
MCH	: Maternal and Child Health
MMR	: Measles-Mumps-Rubella Vaccine
MOHP	: Ministry of Health and Population
NGOs	: Non-governmental Organizations
NHI	: National Health Insurance System
NICU	: Neonatal Intensive Care Unit
OPV	: Oral Polio Vaccine
PDA	: Patant Ductus Arteriosus.
PHC	: Primary Health Care
PPV	: Positive Pressure ventilation
RH/FP	: Reproductive Health/Family Planning
SD	: Standard Deviation
STSP	: Sector for Technical Support and Projects
UNICEF	: United Nation International Education Children's Emergency Fund
USAID	: United State Aid International Development
WHO	: World Health Organization

Introduction

1

Introduction

These guidelines are intended to support the Family Health Team (FHT) in providing quality health care to individuals, families, and communities in the catchments areas of the Family Health Unit (FHU). It provides the technical and managerial details required for efficient implementation of effective health services that fulfill the requirements of the Health Sector Reform Program (HSRP). The guidelines cover all aspects of the Basic Benefits Package (BBP). In addition it deals with other primary Health Care (PHC) activities that should be performed by the Health Team.

The information included here is based on an extensive list of existing excellent material including guidelines, standards and protocols prepared by all vertical programmes, and by the different MOHP Sectors, Departments and Units. These efforts are greatly acknowledged. We hope that the present guidelines would bring all these previous efforts into focus, and maximize their benefits.

The Sector for Technical Support and Projects (STSP) is developing these guidelines to adapt the available material to the needs of the Family Physicians and to provide health care providers with a user-friendly resource to support them in the provision of evidence-based best practices, and to contribute to improved quality of services provided through the FHU. The document presents information in a format that would allow for quick retrieval and act as a useful job-aid. Each partition contain a separate section dealing with a specific topic as referred to in the table of contents. This design allows for updating of specific sections as deemed necessary.

Definition:

- Clinical guidelines are recommendations on the appropriate treatment & care of people with specific diseases & conditions within Family Medicine Programs in Egypt. They are based on the best available evidence.
- Guidelines help healthcare professionals in their work, but they do not replace their knowledge and skills.

Aim:

Good clinical guidelines can change the process of healthcare and improve outcomes. For example, well constructed and up-to-date clinical guidelines:

- Provide recommendations for the treatment and care of people by health professionals
- Can be used to develop standards to assess the clinical practice of health professionals
- Can be used in education and training of health professionals
- Can help patients to make informed decisions, and improve communication between the patient and health professionals.

Health Sector Reform Program (HSRP)

The goal of the HSRP: is to achieve universal coverage for the entire population with a basic package of primary promotive, preventive, and curative care and public health services.

The basic principles are: to improve the quality of public and private services; promote equity in the financing and delivery of care; enhance the allocative and technical efficiency; provide universal insurance coverage and access to care; and assure long-term financial sustainability of the health system.

The HSRP strategy: aims at separating service delivery from financing the health services.

The services are provided by the Family health team (FHT) working in the family health unit (FHU), referrals are made to the family health center (FHC) and district hospital as appropriate.

Financing the health services is done through the family health fund (FHF) which will gradually merge in a unified National Health Insurance (NHI) system.

The Family Health Unit / Center

The FHU is the first level of the family health model. It provides comprehensive bio-psychosocial care at the level of the individual, the family, and the community. The FHU provides the basic Benefits Package (BBP), and implement the HSRP policies (see the BBP). All primary health

care functions are still delivered by the FHU. The present guide is an attempt to help health service providers to do their job as efficiently and effectively as possible.

Family Health Unit Vision and Mission

The health team should define the vision and mission of the FHU. This will be a driving force to provide quality health care and to implement performance improvement approaches. The following are suggested vision and mission that can be used to build on / modify / update as time goes on. Each FHU is expected to develop further their own vision and mission

Vision

Vision is idealistic aspirations. It describes what the organization (FHU) hopes to be, and spells out the highest ideals and wishes. It is a drive for continuous improvement. You are expected to develop the vision with your staff.

Example for FHU vision:

Our unit is a distinguished and accredited health facility, recognized by providing comprehensive quality health care. The unit meets clients and community expectations and fulfills their satisfaction. This is reflected as high utilization rates for health promotion, preventive, and curative services. The high utilization rate, and the quality of service are evidenced by better quality of life, improved health status, decrease in morbidity and mortality rates in the catchments area.

Note *"If you can dream it, you can make it happen"*

Mission

Mission is a statement of purpose. It defines the reason / why this organization (FHU) exists and it's role, what are the main services, who are our customers, how do we offer the service. The mission is flexible, dynamic and responds to changing roles as they occur.

Example of a FHU mission:

The FHU provides comprehensive health care for individuals, families and communities. This care covers physical, social and psychological aspects throughout the human life cycle. All vertical programmes are delivered in an integrated pattern that fulfills the principles of quality, efficiency, and effectiveness. The FHU implements Best Practices, and the staff provides evidence-based medical care.

The Family Health Team

In addition to the FP, the FHT includes: Dentists, Nurses, Pharmacists, Pharmacy Clerk, Lab Technicians, Lab Assistant, Social Worker, Sanitarian, Adm/Finance, Assistant Adm/Finance, Medical Records, Births and Deaths Officer, Front Office, Storage Room, Janitors and Guards.

The FP directs the team and supports team building. FHT is responsible for implementing all Primary Health Care (PHC) activities, and provides the Basic Benefits Package (BBP) at the Family Health Unit/Center.

In relation to family practice activities, the FHT is responsible for a roster of families (600 - 700, sometimes more) in the catchments area.

The Team Provides The Following Main Services:

- Creating family folders
- Conducting initial examination for all family members
- Providing appropriate bio-psycho-social care at all stages of the human life cycle
- Early detection of health problems among family members, and the community through periodic examination and screening tests
- Providing curative care and referral when needed
- Follow-up of chronic conditions, especially hypertension, diabetes and tuberculous cases receiving DOTS
- Implementing specific programmes as MCH, RH/FP, School Health, etc.

Family Physician:

The FP is a medical doctor working in the front line of health care, and is responsible for providing comprehensive (physical, social and psychological) and continuous care for the individual in the context of the family, and the

family in the context of the community.

Expectations from the Family Physician

- Responds to the total health needs of individuals.
- Promotes healthy life styles.
- Reconciles individual and community health requirements.
- Assesses and improves the quality of care.
- Makes optimal use of new technologies.
- Works efficiently in a health team.

FP/Director of FHU Duties and Responsibilities

- Issues orders based on instructions received from the Health District / District Provider Organization (DPO).
- Distributes work to the staff according to guidelines and protocols.
- Monitors staff performance.
- Provides health care to individuals, families and communities.
- Maintains self development.
- Participate in relevant training activities.

FHT duties and responsibilities can be categorized under the following areas:

- Technical.
- Management (including planning, implementation, monitoring & evaluation)
- Administrative.
- Personnel.
- Finance.

To fulfill their duties, team members require clinical / technical skills, management / leadership skills, and communication skills. These guidelines are expected to provide the health team with the needed information to help self learning and support them in delivering quality care.

Accreditation of the FHU

Accreditation is a process for evaluating the facility according to a set of standards that define activities and structures that directly contribute to improved patient outcome. Accordingly the unit is eligible to contract with the (FHF). If the primary assessment denies accreditation the process will be repeated in 6 months. Partial fulfillment of criteria, to a stated extent would result in provisional accreditation. The process would be repeated in one year. If the unit is fully accredited the process has still to be repeated after two years to assure conforming with criteria over time. Fulfilling the accreditation criteria is a joint responsibility of the FHU and The DPO staff.

The steps to be taken to fulfill the accreditation criteria include the following:

- Improved infra structure
- Equipments in place according to standards
- Enumeration of all the houses in the catchments area
- Creation of the family folders
- Comprehensive initial medical examination to all members of the families
- Implement the BBP
- Availability of the Essential Drug List (EDL)
- Implementing quality improvement programmes
- Medical guidelines and protocols used
- Staffing pattern according to standards
- Implement staff training
- Referral system

Note *Accredited units should implement Continuous Quality Improvement (CQI) approaches to conform to standards, and still be legible for re-accreditation after two years.*

Family Practice

Family practice is the core for providing comprehensive health care. It refers to bio-psycho-social care at the level of the individual and the family, within the context of community. Family practice covers individuals throughout the human life cycle. It thus include all services provided by the PHC programmes and maximize their efficiency and effectiveness through a human life cycle and family life cycle approaches, considering the health needs of all members of the family at the different stages of the human life cycle within the context of a changing family environment.

The Family Life Cycle

Differs between the nuclear and the extended families, The extended families may have more

than one stage of nuclear families within the larger family setting. The family life cycle passes through the following stages:

- Pre and early marital.
- The expectant couple.
- The first child.
- The Family with an adolescent.
- Middle age.
- Old age and widowhood.

The FP should be aware of the bio-psycho-social changes associated with each stage and deal with the family as a unit.

The Human Life Cycle

is characterized by several stages merging through each other through transitional events. Each stage has it's own characteristics, health risks and problems, and health needs. The transitional events may have a hazardous effect, and has to be properly handled. The FP has the responsibility for providing promotive, preventive and curative care needed by family members at different stages of the human life cycle.

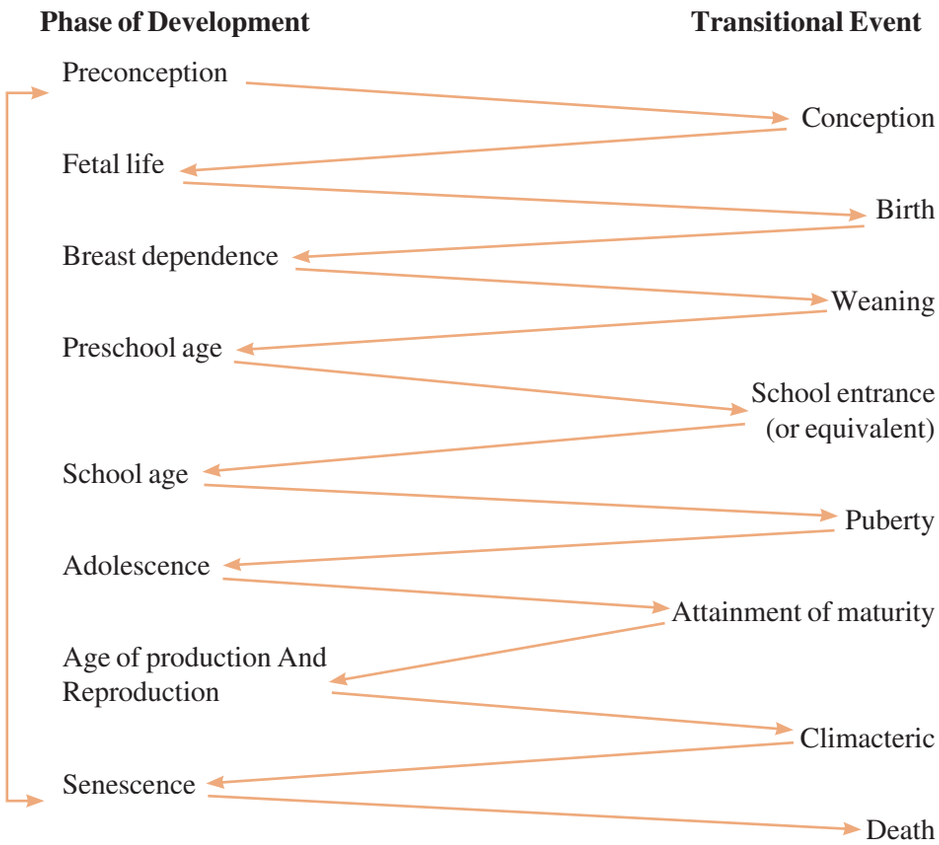


Figure "1": Human Life Cycle

Source of the figure: WHO (1972). Human Development and Public Health. Technical Report Series No. 485

Proactive measures in Family Practice:

Family practice is characterized by being proactive to meet the health needs of the served population, in addition to reactive interventions to respond to their demands.. Proactive measures include:

- Bio-psycho-social promotion and preventive services to individuals, families and communities
- The initial comprehensive examination and the follow-up according to the results
- The periodic examination for the healthy according to age and physiologic state, e.g. pregnant and lactating mothers, growing children, etc., and the periodic examination

for at-risk cases and patients suffering from chronic diseases (example hypertension and diabetes). The medical records provide the information needed for the periodic examination of different subjects / conditions.

- Application of the at-risk approach to members of families having identified risk factors. In such cases, the periodic examination need to be more frequent and directed to relevant screening tests.
- Control measures to family members who are contacts to an infectious disease according to protocols.
- Health education services at the clinic, the household (home visits), and the community at-large (See the section on "Working with the Community")
- Customized and incidental health education geared to the needs of individual families or family members; e.g. a teenager who starts smoking or drugs need to be specifically directed and followed.
- Out-reach activities.

Non-clinical activities that are dealt with by the Family Health Team:

- Management issues including planning, monitoring, supportive supervision, perfo-rmance improvement, continuous quality improvement, evaluation, etc.
- The record system
- The Health / Management Information System (H/MIS)
- Infection Control
- Clinic waste management

  This will be dealt with in aseparate guidelines.


WORKING
WITH THE
COMMUNITY
2

WORKING WITH THE COMMUNITY

The FHU provides comprehensive health care to improve the health status of the people in the catchments area and address their health problems. This is best achieved when there is active community involvement and partnership.

To achieve this partnership the health team, specially the FHP should play an active role in understanding the community, mobilizing all potential community resources, and actively involving the community in participatory planning for FHU activities, in supporting the health service to effectively implement relevant interventions e.g. arrangements for on-the-clock transportation in cases of emergency, and to watch for community behavior in relation to several health issues e.g. environmental sanitation.

How to Know and Work with the Community:

To be able to work effectively with the community and get them involved into actions for improving the health status, you must define the boundaries of your community, geographic and administrative. This is done through:

- Drawing sketch maps for the catchments area including the mother village and the satellites
- Enumeration of the houses, which is the first step for creation of the family folders
- The family folders will identify every member in the community, the socio-economic and the housing conditions; thus providing baseline information for the community served.
- The initial comprehensive medical check will define the health profile and identify main health problems in the community.

Within the identiffed community you should know the following:

- Demographic features and population characteristics (the family folders will provide this information).
- Economic activities.
- Social stratification and power relations (the leading families, and community leaders).
- Organizations and their functions and activities (including governmental organizations, schools, social services, agriculture services, NGOs, community development associations CDAs, youth clubs, etc).
- Community committees and community development organizations.
- Existing health or community development projects and activities and the involved organizations.
- Leadership pattern (formal and informal) and its influence.
- Culture and traditions.
- Education levels.
- Environmental sanitation situation and problems.
- Critical issues and problems.

Note Schools can provide a very important opportunity for implementing health, environmental, and developmental activities for families of the school children and communities at large

Mechanism for working with the community

There are several mechanisms through which the FHU could work with the community. The FHU should build partnership with the community, conduct needs assessment and participatory planning to address specific health issues through concerted efforts that could be mainstreamed in the District/FHU plans. The existing mechanism is the community representation in the Board of FHU. A potential mechanism is the Community Health Committee. In addition to specially arranged public meetings to discuss specific issues.

The FHU **Board** include two members from the community. Criteria for selection of these members should be:

1. They should be genuine members from the community, living in the community for at least 10 years.
2. Have good relations and communication with different groups in the community.
3. Enthusiastic, dedicated and willing to actively participate in board activities.
4. Have an acceptable standard of education to be able to contribute.

A community health committee (CHC) may be existing, or needs to be created. The creation of an CHC will help to:

- Add authority to community work which often lacks a constituency;
- Serve as alink between the community and the

health facility, and between the community and the district
- Capture the synergism possible through concerted government and community group action
- Build broad commitment and support for the overall health issues in the community
- Ensures continuity of work
- Provide amechanism to facilitate development of new and innovative solutions to identified needs and problems, as well as create partnerships within the community

Suggested structure of the CHC
- The chief executive of the local village council
- The chairman of the local elected council
- Two representatives from active NGOs (rotated every year to secure wide representation)
- Two natural community leaders (rotated every year to secure wide representation)
- FHU director, physicians, head nurse, and a representative for Raedat (rotated every year to secure wide representation)
- The social worker
- A representative for women (rotated every year to secure wide representation)
- A representative from the youth club (rotated every year to secure wide representation)

Initiation of Rosters and creation of Family Folders

This is an initial step in implementing the Family Health Model and bringing the community and the FHU in close contact.

In rural areas, enumerate the houses in the mother village and satellites. A folder is then created for each family. The comprehensive initial examination for all family members will bring all individuals in the community in close contact with the FHU team.

In urban areas creation of family folders can follow almost the same lines in small towns with clear catchments areas, and in new housing compounds having a clear design, and the houses are well identified.

In big cities and over crowded areas it will be practically impossible to cover all houses/families in the surrounding, Self selection may be the appropriate approach. This can be done through community mobilization efforts, working with other organizations who could provide family health care as NGOs, or who would market the services of the FHU. A practical approach would be that every client, from the catchments area, entering the unit for any reason (almost all would come for child vaccination) is identified as a candidate for the roster. S/he is asked to consult with the family head and bring all family members to be registered and subjected to the initial clinical examination.

The District Provider Organization (DPO) would identify other organizations in the community as NGOs or later private sector to complement the work of the FHU in order to achieve universal coverage.

Completing the Family Roster forms

As mentioned above, in rural this is done through home visiting. Home visiting brings the FHU team in close contact with community members. It has to be tactfully done to build good relations and avoid any antagonism from the community.

Steps for entering a household

The nurse, Raeda Rifeya, or any other health care service representative entering the household is directed to the following basic principles:

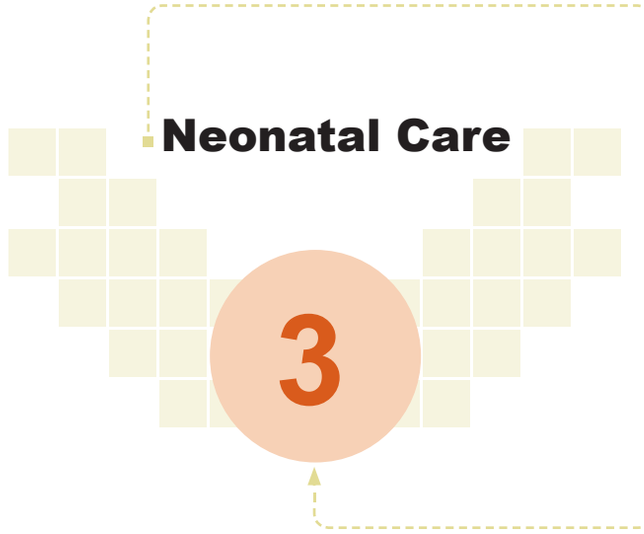
1. Greet the first person to see and every one else you meet in the household
2. Introduce yourself by name and affiliation
3. Take sometime to be acquainted with the people in the room, notice how they relate to each other, who seems to be the leader?
4. always be friendly and polite, and establish rapport
5. Explain the purpose of your visit
6. Assure them that any information they give will be kept confidential
7. Apply good communication skills, specially if the purpose of the visit is health education

MOHP Reference(s)

MOHP, Directorate of MCH, HM/HC project, JSI, USAID; "Community Needs Identification and Decision Making Tool"
Ibid; Promoting Healthy Behavior in Households and Communities: A Manual for Outreach Workers".

جمهورية مصر العربية، وزارة الصحة والسكان، منظمة الصحة العالمية ٩٩/٢٠٠٠: "دليل العمل بالرعاية الصحية الأساسية"

Neonatal Care



Neonatal Care

The neonatal period extends from delivery to 28 days after birth. It represents the most critical period of life associated with high morbidity and mortality. It is responsible for more than 50% of deaths in the first year of life.

The role of the Family Physician in neonatal care:

1. Neonatal resuscitation
2. Neonatal examination
3. Identify, assess, manage and refer neonatal health problems including:
   - Neonatal jaundice
   - Congenital abnormalities
   - Hypothyroidism

Note

Neonatal care is ashared responsibility between the family physician and the pediatrician.

Timely reference is very important.

Follow-up by the family physician is essential to ensure continuity of care.

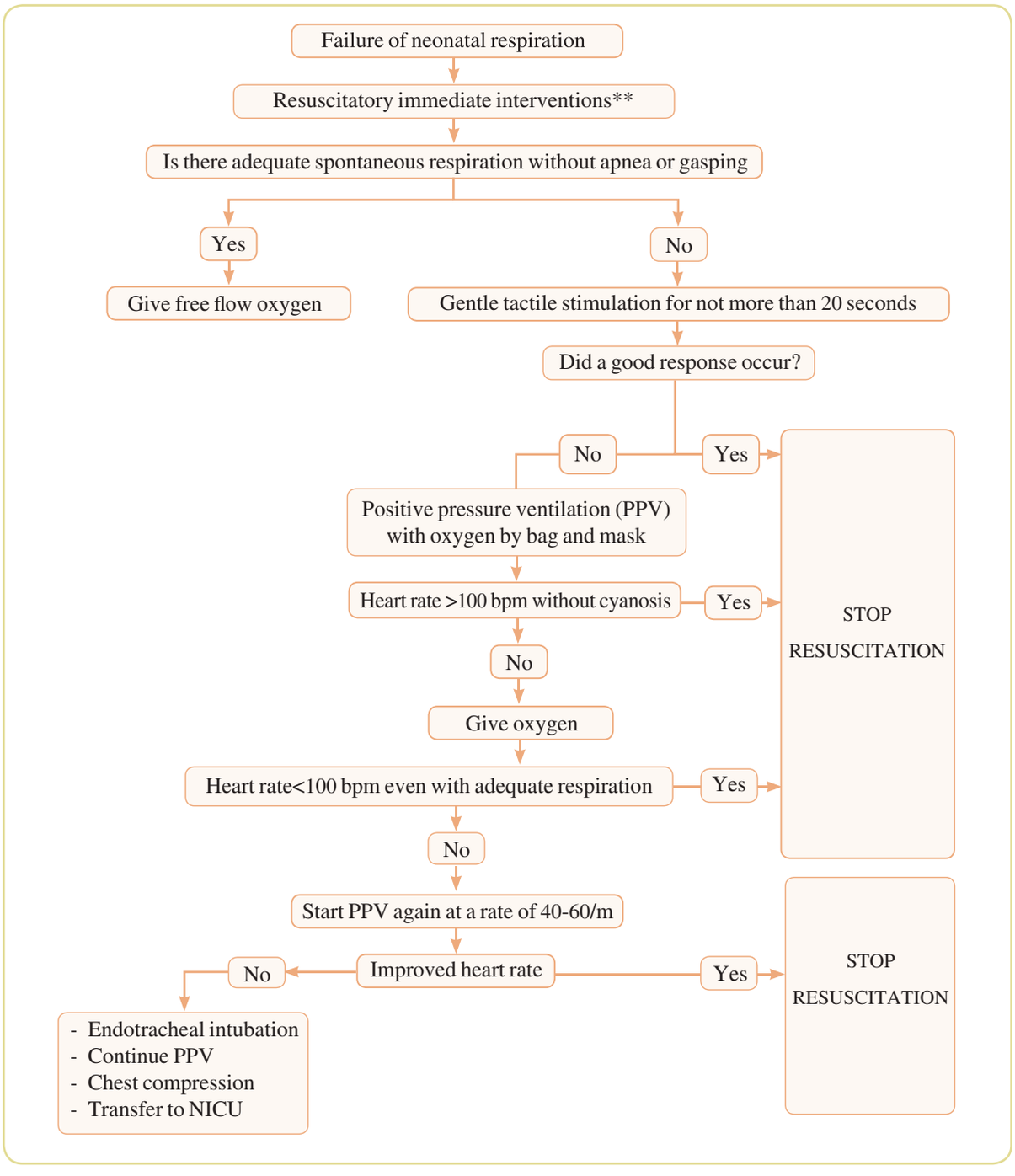


Figure "2": Neonatal Resuscitation

Resuscitatory Immediate Interventions

- Place the neonate under a radiant warmer.
- Dry the neonate to prevent heat loss and position him to open the airway.
- Place him supine with his neck in a neutral position. A towel neck roll under the shoulders may help prevent neck flexion and airway occlusion.
- Clear the upper airway by suctioning the mouth first and then the nose, using a bulb syringe. The mouth should be suctioned first to prevent aspiration in case the neonate takes a deep gasp when the nose is suctioned. Suctioning should be limited to five seconds at a time. Vigorous suctioning should be done only if moderate- to- thick meconium is present in the airway (the condition may lead to bradycardia).

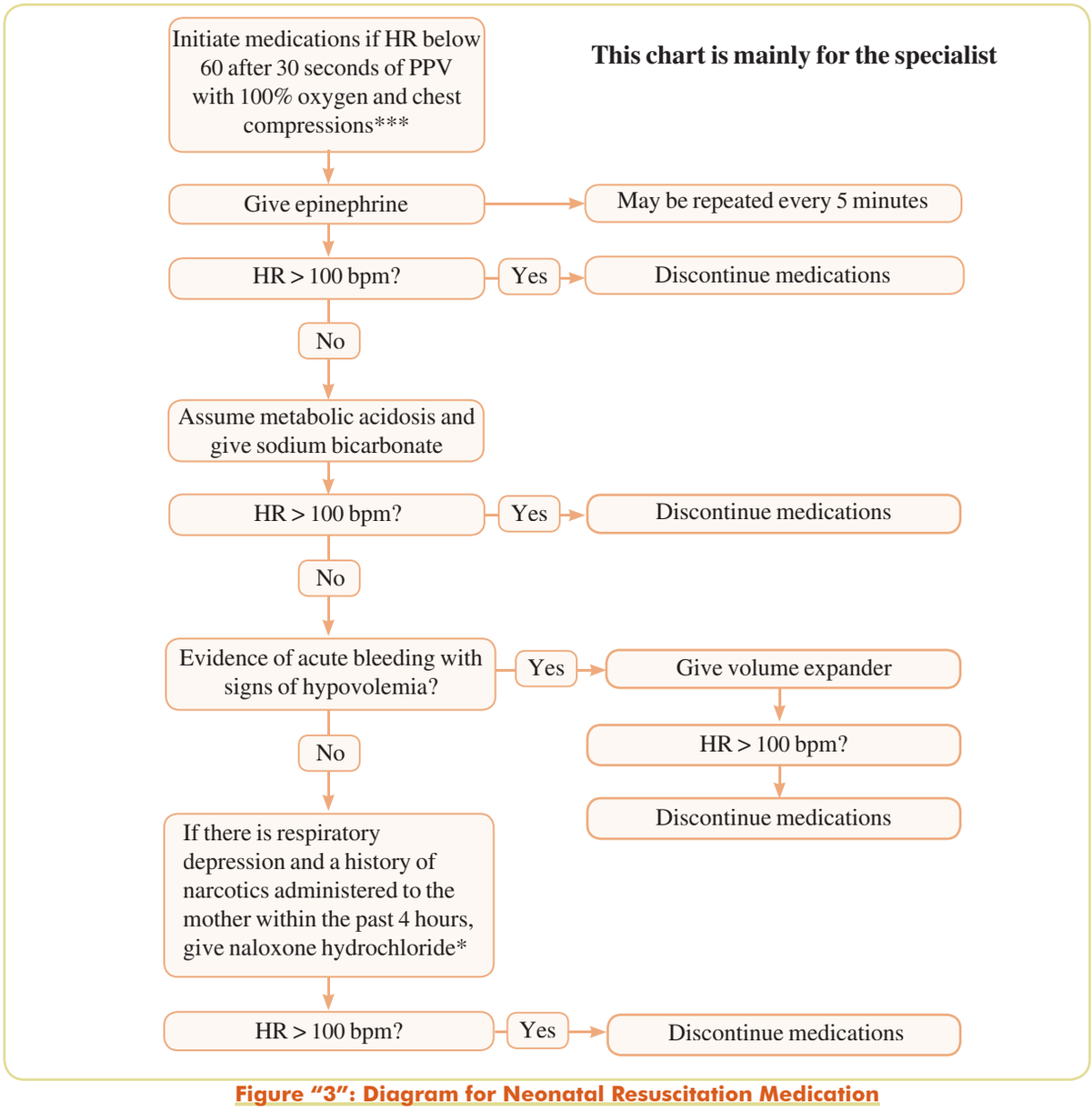


Figure "3": Diagram for Neonatal Resuscitation Medication

Do not forget

- Dry the neonate to prevent heat loss and position him to open the airway.
- Suctioning should be limited to five seconds at a time.

Chest compression:

- If the heart rate is still < 60 beats / min. after 15-30 seconds of adequate ventilation, chest compression should be started.
- Compression is applied to the lower sternum just below the nipple line, but above the xiphoid. The resuscitator's thumbs are used

to compress the sternum while the fingers surround the chest or the middle and Index fingers of one hand may be used to compress while the other hand supports the neonate's back. The sternum is compressed to 2 cm.

- Chest compressions are alternated with ventilation at a ratio of 3:1. The combined rate should be 120/min. (i.e., 90 compressions and 30 ventilations). After 30 seconds evaluate the response. If the Pulse is > 60 beats / min., chest compressions can be stopped and PPV continued until the heart rate is 100 beats / min. and effective breathing is maintained.

Table. 1: Neonatal Resuscitation Medications – Doses And Routes

Medication	Concentration	Preparation	Dosage and Routes	Rate precautions
Epinephrine	1:10.000	1 cc ampoules	0.1-0.3 ml/kg IV or ET. May dilute 1:1 with normal saline if given via ET.	Give rapidly. May repeat in 3-5 minutes if HR< 60 bpm
Sodium bicarbonate	8.4 % 10 m Eq/10 ml OR 4.2 % 5 ml Eq/10 ml	10 ml ampoules 500 ml bottles	2 ml / kg IV 4 ml / Kg IV	Administer IV slowly
Volume expanders	Whole blood, Albumin 5% Normal saline, Ringer's lactate	Variable, 50 ml 500ml 500 ml	10 ml /kg IV	Give over 5-10 min by syringe or IV drip
Naloxone	0.4 mg/ml	1 ml	0.1mg /kg (0.25 ml/kg) IV, ET, IM, SQ	For IV only

* Naloxone hydrochloride: In neonates 0.01mg/kg–can be administered I.V,S.C,or I.M to reverse the effects of analgesics given to mothers prior to delivery -0.2mg given I.M to infants whose mothers had received meperidine in labor.

Table. 2: Neonatal Examination

1. General appearance				
• Weight: small for gestation or large for gestation • Pallor, jaundice or cyanosis • Syndromes (clusters of features): ▪ Lanugo or evidence of postmaturity ▪ Downs syndrome or Turner's syndrome			• Skin: birth marks, meconium staining, traumatic cyanosis or purpura	
2. Head and facial features				
• Head circumference • Cephalohaematoma • Fontanelles size and tension • Cataract	• Accessory auricles • Ptosis • Subconjunctival haemorrhage • Pierre Robin jaw (receding jaw with cleft palate)	• Hare lip • Potter's facies	• Red reflex	• Sternomastoid swelling
3. Arms and hand				
• Proportion of arms/fingers • Webbing of fingers • Palmar creases	• Number of fingers • Extra digits • Missing digits	• Normal movements • Oedema • Erb's palsy		
4. Chest				
• Distortion • Breast enlargement	• Respiratory rate • Added breath sounds	• Air entry • Recession		
5. Cardiovascular examination				
• Pulses (femoral and brachial)	• Heart sounds	• Murmers		
6. Abdomen				
• Umbilical infection	• Umbilical hernia	• Masses		
7. Genitalia				
• Male: Penis size and shape; position of urethral orifice; testes (normal, un-descended or mal-descended), hernia or hydrocele • Female: Clitoromegaly; vaginal bleeding; posterior vaginal skin tag (common)				
8. Legs and feet				
• Femoral pulses	• Proportion	• Club foot		
9. CNS				
• Is the baby behaving normally? • Are all 4 limbs moving equally?	• Is the cry normal? • Is the Moro reflex symmetrical?			
10. Back				
• Sacral pit	• Spina bifida	• Scoliosis		
11. Mouth				
• Cleft palate?	• Profuse saliva	• Epstiens pearls		

Neonatal Jaundice

When a mother visits you carrying a 1*jaundiced infant, history, examination and laboratory investigations are your tools to suspect the 2*type of hyperbilirubinemia you have and whether to reassure the mother and send her home or refer her to a higher level, being mandatory.

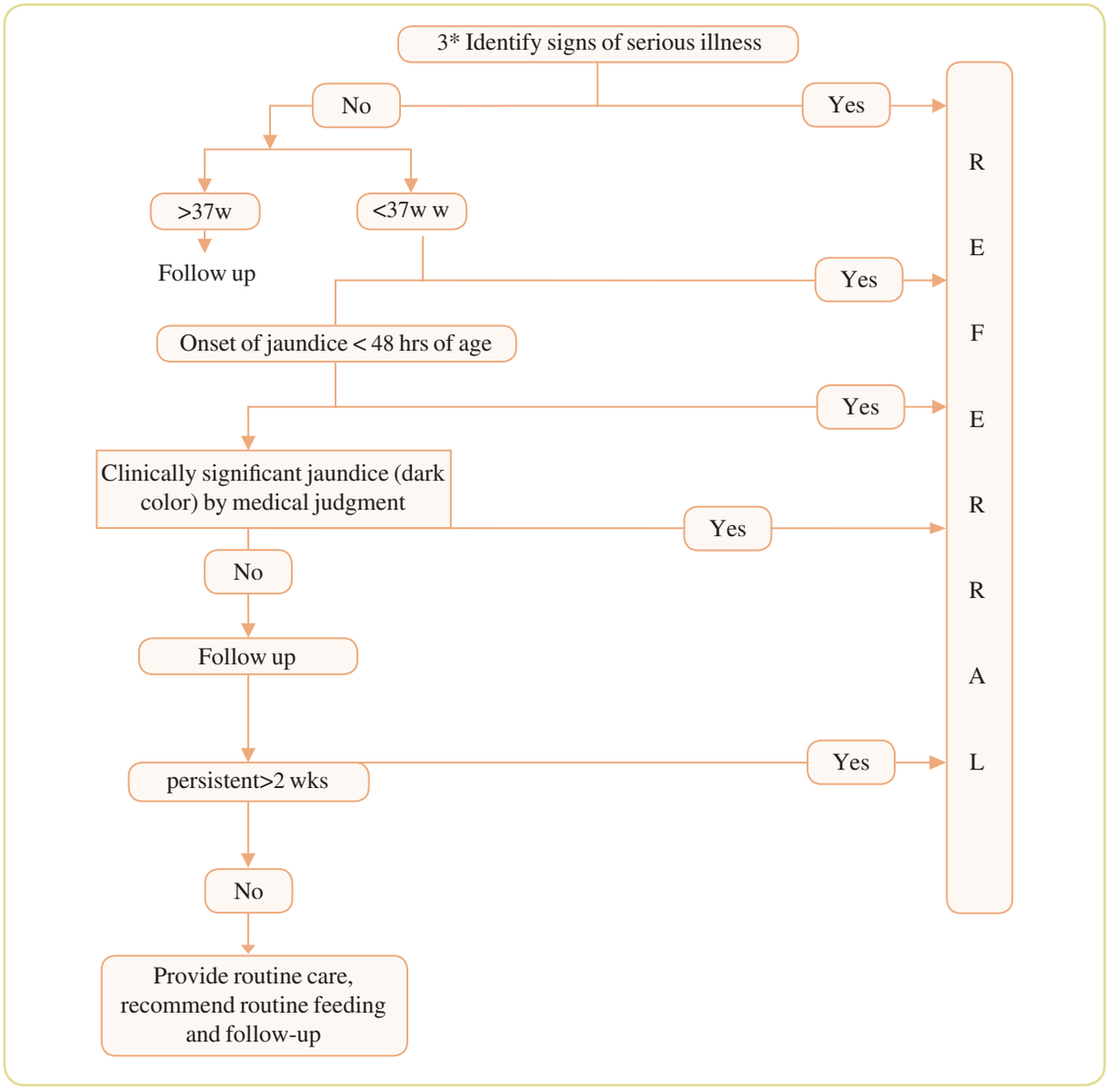


Figure "4": Diagram for Management of Neonatal Jundice

1. Most of infants become visibly jaundiced when:

serum bilirubin exceeds 7 mg/dl.

2. Types of neonatal hyperbilirubinemia:

Physiologic Indirect (or Unconjugated) Hyperbilirubinemia

Physiological jaundice occurs in 60 % of healthy full term babies and 80% of preterm babies. It is by far the most common cause of neonatal jaundice.

In full term the healthy babies jaundice appears at day 2-3 and usually disappear by 6-8 days sometimes lasts for 14 days, with a maximum bilirubin level < 12 mg/dl.

Pathologic Indirect (Unconjugated) Hyperbilirubinemia

- This is the most common cause of jaundice in the first 24 hours of life.

- This occurs in cases of Rhesus incompatibility, ABO incompatibility, G6PD deficiency and Spherocytosis. Other causes include congenital infection, septicemia, cephalohematoma, metabolic disorders (as galactosemia), hypothyroidism and pyloric stenosis.
- Breast milk jaundice is a form of mild neonatal jaundice occurring in breast fed infants as a result of maternal hormones present in breast milk and competing with bilirubin for enzyme activity.

Pathologic direct (conjugated) hyperbilirubinemia (Neonatal cholestasis)

It is caused by obstruction to the bile flow. It is characterized by clinical triad of persistent jaundice, hepatomegaly and clay colored stool.

Do not forget

Signs of serious illness:

- Lethargy, apnea, tachypnea
- Temperature instability
- Hepatosplenomegaly
- Persistent vomiting
- Persistent feeding difficulty

Neonatal Conjunctivitis

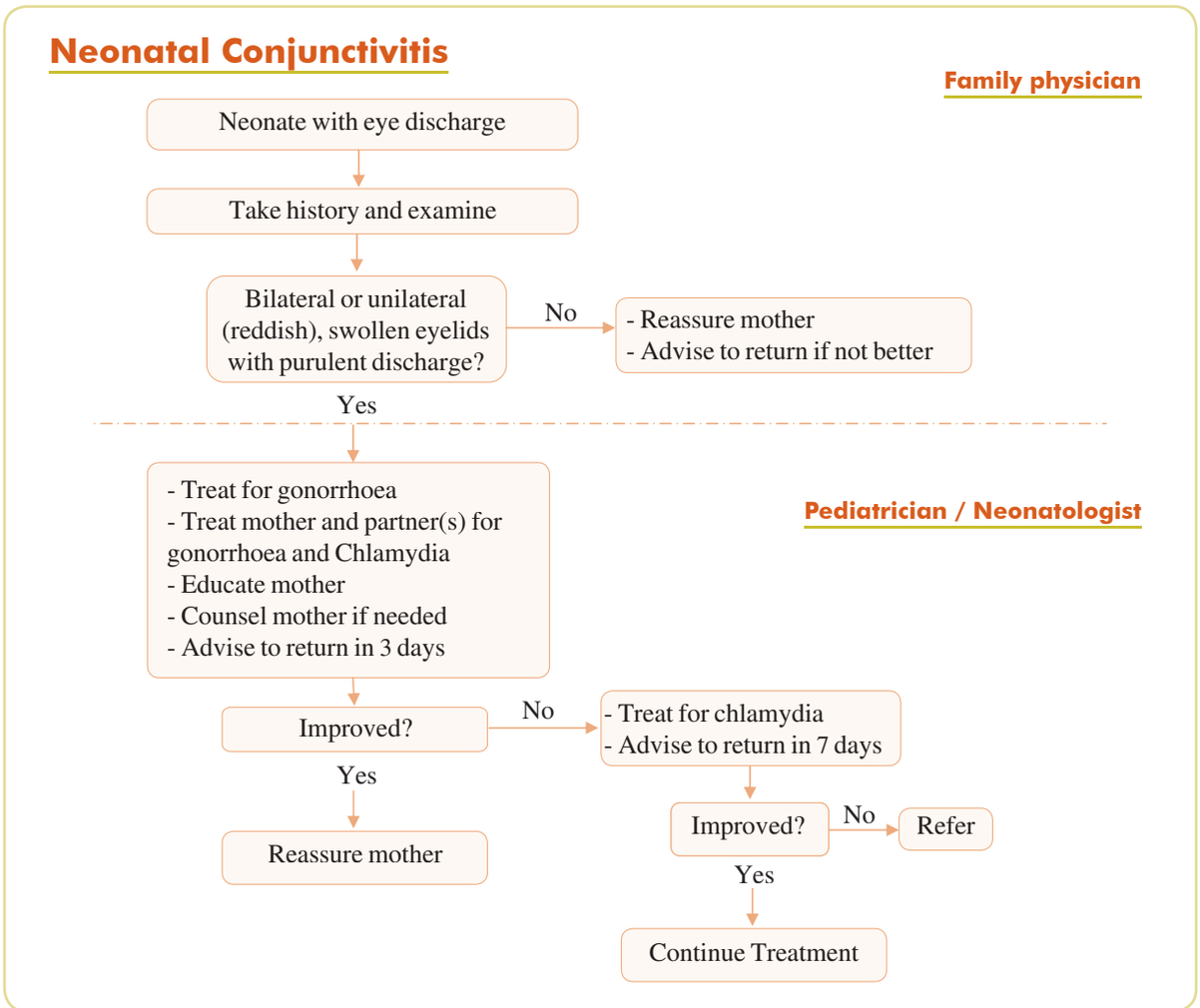


Figure "5": Diagram for Management of Neonatal Conjunctivitis

Treatment of Neonatal Conjunctivitis

1. Crystalline penicillin 50.000 units/Kg/day I.V. in 3 divided doses X7 days.
2. Saline irrigations 4-5 times a day followed by Tetracycline 1% OR Erthromycin 0.5% eye drops 4-5 times a day X 2 weeks.

If not improved treat for Chlamydia

1. Erythromycin 10 mgm/kg orally Q.I.D X 14 days
2. Saline irrigation 4-5 times a day followed by Tetracycline 1% OR Erythromycin 0.5% eye drops 4-5 times a day X 2 weeks.

Congenital Anomalies

Congenital anomalies can be detected by routine

and thorough examination during immediate neonatal care. Look for the orifices and introduce a nasogastric tube, a ryle or a thermometer into the anus to diagnose atresia. Then look for other anomalies allover every part of the body. Congenital anomalies can be associated with each other.

Table: 3 Common Neonatal Life Threatening anomalies

Anomaly	Detection	Immediate intervention	Referral (see referral guidelines)
Many serious and cardiovascular anomalies	- Different degrees of respiratory distress; tachypnea, retraction, grunting & cyanosis	See neonatal resuscitation	IMMEDIATE
Cleft Lip and Cleft Palate	General neonatal examination	- Encourage breast ¯feeding (special teats) - Semi-upright position during feeding to avoid aspiration	-Surgical consultation
Choanal Atresia (closed posterior nares)	Pass a nasogastric tube in both nasal openings	-Insert an oral airway if bilateral - cyanosis	IMMEDIATE
Tracheoesophageal Fistula (TEF)	-Chocking and frothy secretion during breast feeding - Confirmed by failure to pass a nasogastric tube beyond proximal esophagus	- Suction of secretion - Stop feeding - Ready oxygen during referral	IMMEDIATE
Diaphragmatic Hernia	-Scaphoid abdomen -diminished air entry on one chest side - Respiratory Distress	- DON′T use ambu bag - Give oxygen -Insert NGT for decompression	IMMEDIATE
Omphalocele (herniated loop of intestine inside umbilical cord)	A mass in umbilical cord	If not covered by skin cover it by a piece of gauze soaked in warm saline	IMMEDIATE
Gastroschisis (herniated loop of intestine through a defect in abdominal wall)	A mass in abdominal wall	If not covered by skin cover it by a piece of gauze soaked in saline	IMMEDIATE
Imperforate Anus	Pass a thermometer through anal orifice		IMMEDIATE
Hypospadias	Curved penis with abnormal meatal opening	DON′T circumcise the boy	Surgical consultation
Meningomyelocele	Meningeal cyst with spina bifida in lower back	- If not covered by skin cover by a piece of gauze soaked in warm saline - Side or Prone Sleeping	Surgical consultation
Spina Bifida Occulta (a variant of meningomyelocele)	Hair tuft, lipoma or a dimple overlying spinal cord (dimples in coccygeal region are not significant)		Surgical consultation
Congenital Hip Dislocation	- Barlow's test - Ortolani test - Abduction test	Keep lower limbs in abduction position by double pampers	Orthopedic consultation

Do not forget

Look for the orifices to diagnose atresia.

Referral Guidelines for the Neonate Transport Personnel

Transport personnel should be fully skilled in the care of the high-risk neonate and trained in neonatal resuscitation. The personnel may include a physician, neonatal nurse and specially trained transport technician.

Transport Vehicle and Equipment

An ambulance should be prepared with the following:

- Transport incubator

- Monitors
  - Heart rate
  - Respiratory rate
  - Temperature
  - Blood pressure
  - Inspired oxygen concentration
  - Oxygen saturation
- Oxygen delivery system (cylinder, regulator and tubing)
- Intravascular infusion equipment
  - Cannulae (sizes 22, 24)
  - Syringes (sizes 2.5, 3, 5, 10, 20 and 50 cc)
  - IV infusion sets
  - Adhesive tape
  - Alcohol swabs
  - Gauze
- Suction equipment
  - Bulb syringe
  - Mechanical suction
  - Suction catheters (size 6, 8 and 10)
- Medications for resuscitation
  - Epinephrine
  - Sodium bicarbonate 8.4% ampules
  - Volume expanders (Ringer's or saline)
  - Sterile water
- Equipment for intubation
  - Laryngoscope (straight blades size 0 and 1)
  - Extra bulbs and batteries for laryngoscope
  - Endotracheal tubes (size 2.5, 3 and 3.5 mm internal diameter)
  - Ambu bag with cushioned rim mask
- Other equipment
  - Stethoscope
  - Oral airways (size 0 and 00)
- Assisted ventilation equipment if available
- Records of each transport should include the complete prenatal history, delivery record and Apgar scores from the hospital of origin and the transport form.

Achieving Successful Resuscitation and Transport

- All personnel in the transport team should be trained in neonatal resuscitation.
- All necessary equipment should be available and working.
- Do not wait for the one (1) minute Apgar score to start resuscitation; the later you begin, the more difficult resuscitation will be.
- The neonate should be dried to prevent heat loss and properly positioned to maintain an open airway.
- The upper airway should be cleared by using a bulb syringe; suctioning the mouth first and then the nose.
- Place the neonate in the incubator to minimize heat loss.

Do not forget

Do not wait for the one (1) minute Apgar score to start resuscitation; Communication with the referral hospital should be done prior transport to ensure a place for the mother and neonate

Early Detection of Congenital Hypothyroidism (CH)

Early detection of Congenital hypothyroidism is very important to avoid mental and physical retardation resulted from the untreated CH.

Routine neonatal screening is done between the 3rd and 7th day of birth.

Do not forget

Early detection of Congenital hypothyroidism is very important to avoid mental and physical retardation

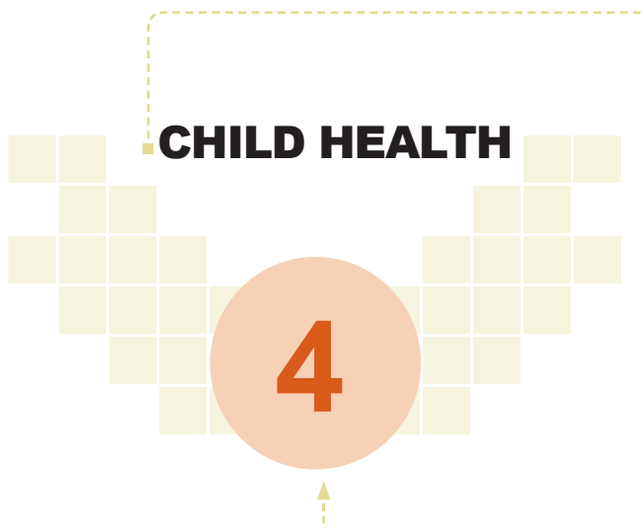
The nurse is responsible to take a blood sample from the newborn on a filter paper by a heel prick.

- Samples are collected on Saturday and Tuesday of each week
- They are sent to the Health Directorate on the same day of collection
- Samples are sent to the Central Lab next day
- Positive cases are referred to Health insurance to confirm diagnosis and provide treatment and follow up.

Refer *The FHU will ensure continuity of treatment through counseling and regular checking during child health care*

References
MOHP; Central Adm. for PHC, HMHC project/JSI/USAID; (June, 2004),"Neonatal Care Protocols for Physicians"
Ibid; "Comprehensive Essential Obstetric Care: Protocol for Physicians"
Ibid; "Basic Essential Obstetric Care: Flow Charts for Physicians"
Ibid; "Basic Essential Obstetric Care: Protocol for Physicians"
MOHP, Sector for Technical Support and Projects, Human Resource General Department (March, 2005); "Introduction to Family Medicine Training Program for Family Physicians"
Cloherty et al, 2004: Manual of Neonatal Care

Additional reference: "وزارة الصحة والسكان، الإدارة العامة لذوي الاحتياجات الخاصة؛ "دليل الممرضة لبرنامج الكشف البكر لمرض نقص هرمون الغدة الدرقية في حديثي الولادة


CHILD HEALTH
4

CHILD HEALTH

(Under 5 Child, Monitoring of Growth and Development)

> **Note** *Optimum Health is a right for all Egyptian children*

The Goal of Child Health is to have a healthy future generation

The aim of child health is "to ensure that every child, whenever possible, lives and grows in a family unit, with love and security, in healthy surroundings, receives adequate nourishment, health supervision, and efficient medical care, and taught the elements of healthy living" (WHO &UNICEF, 1993)

> **Note** *The FHU actively participate in fulfilling the rights of children (and youth)*

To optimize the health of our young and to develop our human resources, every infant / child must be granted

- The right to be wanted
- The right to be healthy
- The right to live in a healthy environment
- The right to satisfaction of basic needs
- The right to continuous loving care
- The right to acquire the intellectual and emotional skills necessary to achieve individual aspirations and to cope effectively in our society

> **Note** *To achieve optimum health for our children the FHU should implement comprehensive bio-psycho-social care at the level of the individual, the family, and the community*

Components of Child Health Programme in the FHU:

- Registration and record keeping
- Periodic examination, including growth and development monitoring
- Health education
- Nutrition care
- Immunization
- Management of sick children / IMCI
- Referral as needed
- Out-reach programme
- Social care

Registration

Every newborn is issued a Health Card (Blue for the boys and Pink for the girls). This card is kept by the mother. S/he is added to the family folder:

- In the family composition table and
- An under 5 periodic checkup form (attached)

Periodic Examination:

Examination of the child starts by the neonatal check It is then followed by periodic examination at the FHU. According to the form in the family health folder the child is examined at 2, 4, 6, 9, 12, 18, 24, 36, 48 & 60 months. At risk children are examined earlier if pre-term or subjected to hazards during delivery, or more frequently ¯as needed- if they belong to an at-risk group.

At-risk approach: there is standard care for all individuals, and more care to those in need according to the need

At-risk children:

Family factors as low socio-economic standard and illiterate parents; bad housing conditions, large family size; repeated infant and child death in the family; one parent child; other.

Maternal factors as age(teen age and the elderly); maternal health; complications during pregnancy; difficult labor; other.

Child factors as unwanted child; preterm (<37 weeks of gestation); low birth weight (<2.5 kg); twin or multiple births; congenital anomalies; birth trauma; repeated infections; defective breast feeding or feeding problems; other.

At-risk detection can be elicited from the Family Health Records: the Family composition and characteristics record, the Antenatal Care record and card for the mother health, in addition to the child follow-up record and child health card.

> **Note** *At-risk children could be managed at the FHU or referred according to condition*

Periodic examination includes two main components

- **Growth and development monitoring:** These are basic screening tools to detect early deviation from good nutrition or good health.
- **Full clinical and laboratory examination** to identify the nature of the problem.

Children do not all grow or develop at the same pace; however, there is a normal range to vary within. Some babies may be taller or heavier than others and they are both normal. Again a mother may get worried because the older daughter started to talk much earlier than the present brother, but usually both are normal.

Clinical examination should include systematic examination of the child from head to toe, detection of any congenital abnormalities, examine for hearing and vision to detect any abnormalities early in life.

Growth Monitoring

Growth monitoring means follow-up of growth by repeated measurements to assess whether the RATE of growth is within normal limits or not, in order to detect early deviations from normal.

Steps for growth monitoring:

1. Anthropometrical measurements
2. Plotting the growth chart
3. Interpretation of the growth curve to detect falters
4. If there is deviation from normal, investigate the cause
5. Management to treat or correct the cause
6. More frequent monitoring until the child is back to normal rate of growth.

Anthropometrical measurements include weight, length/height, and head circumference.

Suggested frequency for anthropometrical measurements

Table.4: Anthropometrics Measurements

	Weight	Length/height	Head circumference
First year	Monthly	Every 2 m	Monthly
Second year	Every 2 m	Every 4 m	Every 2 m till 18 m
Third year	Every 3 m	Every 6 m	
3 - 6 years	Every 6 m	Yearly	

For simplicity the child is checked when he is coming for vaccination and during the month of his/her birthday (This will conform with the dates presented in the follow-up form)

Sample of Growth curves for height and head circumference can be kept in the unit as a guide, not for every child

The growth chart: now present in the family folder, child health record is a standard deviation chart showing the range between two lines presenting -2 SD and +2 SD. Weight is plotted against age.

Weighting the child: Adjust the balance and weigh the child with no clothes (if with minimum clothes, subtract the estimated weight of the clothes from the measured weight)

Age calculation: For easy calculation of the age complete the growth chart to be used as a personal calendar for child. On the first visit, the first box at the age axis is filled by the name of the month of birth e.g. September 2004, the agenda for the child is then completed by filling the boxes sequentially (Oct., November,...). When you reach January mark 2005, and continue. When the child comes for monitoring, the weight is plotted against the date of examination; the age of the child could be immediately read from the growth chart.

Interpretation of the growth chart: The weight curve for the child is expected to go parallel to the curve to indicate acceptable growth. Any deviations should be detected. If the monitoring is done according to the recommended schedule, the MCH should be able to detect early falters before they reach the level of malnutrition. Deviations can be due to inadequate nutrition, an acute disease, a chronic disease, emotional upset, etc. Clinical examination and investigation to find and correct the cause and correct it, is very important.

Note Remember: Growth falters should be monitored more frequently until they are back to normal rate of growth

Developmental Screening

Normal development is simply checked by developmental milestones. Rapid assessment is done with every visit. Suspected deviation should be referred to the pediatrician for more comprehensive evaluation.

Specific developmental achievements to be

looked for at the different ages are presented in the child follow-up form in the family folder. More details are present in the attached charts.

Note *Stimulate development of the child through mother (care giver) /child interaction, age-appropriate toys, stimulating family environment, and community activities*

Table.5: Development of the Teeth

	Eruption		Shedding	
	Lower	Upper	Lower	Upper
	Age (months)		Age (years)	
Central incisor	6	7.5	6	7.5
Lateral incisor	7	9	7	8
Cusped	16	18	9.5	11.5
First molar	12	14	10	10.5
Second molar	20	24	11	10.5
	Incisors: Range± 2m **Molars:** Range ± 4m		Range ± 6 m	

Health education

Health education is a key component in all family health care.

Communication skills, counseling skills and proper client-provider interaction (CPI) are key issues in health care.

Note Remember the Golden Rules Welcome, look & smile, greet, ask, listen, tell & explain, and discuss

Health education messages are directed to:

Improving health care by the mother/care giver

- Health promotion
- Promotion of growth
- Promotion of development
- Prevention of diseases
- Dealing with acute diseases

The messages include:

- The importance of well baby care and timing for visits
- Promotion and techniques of breast feeding
- Feeding of the lactating mother
- Birth spacing
- Immunization schedule
- Essentials of baby care
- Stimulating activities for development of the child and toys
- Weaning
- Home management of sick children, and importance of early seeking of care
- Accident prevention

Counseling is specifically geared to the needs of every child. It does not replace health education.

Nutrition Care:

Direct interventions for nutrition care for the preschool child include:

- Growth monitoring (mentioned earlier)
- Nutrition education
- Promotion of breast feeding
- Proper weaning practices
- Feeding the sick child during and after illness (see IMCI page 17-19)
- Feeding problems (see IMCI page 24)
- Nutrient supplementation which could include, vitamin A, vitamin D, and iron.

  Vitamin A is now being given routinely at the age of 9 months (100,000 IU) and at 18 months (200,000 IU) orally. Vitamin A is recommended to be given to mothers in the first four weeks after delivery at the dose of 200,000 IU to increase Vitamin A content of the breast milk.

  Vitamin D could be given at the age of 2 months, once only, at a dose of 200,000 IU, Intramuscular. it can be given in the form of Calcium + Vit. D suspension in a dose equivalent to 400 IU daily.

  Iron supplement could be given orally 6 mgm/kg body weight/day for a period of 2 months at the age of 7 months and then at the age of 15 (or 18) months.

- Early detection and correction of malnutrition.
- Referral of the malnourished when needed.

Promotion of breast feeding

Note *When breast feeding is the social norm in a community, most mothers will succeed in breast feeding.*

- Support for breast feeding practically starts during antenatal care.
- Preparation of the breast and nipples is done during the last trimester, specially in case of retracted nipple. (See breast care in the antenatal care section)
- Inform the mother about:
  - the importance and benefits of lactation for herself and the baby,
  - the importance of initiating lactation very early after delivery as soon as the condition of the mother and the baby allows and not later than one hour,
  - the importance of feeding on demand, day and night.
- Teach the mother the correct posture for holding the baby, and how to achieve mother/child bonding.
- After birth the child is kept with the mother in the same room.
- Exclusive breast feeding should be practiced for the first 4-6 months, guided by growth monitoring of the child. It can be continued for two years; however, care should be given to provide the infant with appropriate diet to maintain growth.

Weaning

Weaning is a gradual process. It starts by introducing new foods and ends by stopping breast feeding.

Principles for weaning

See also IMCI page 18&19

- Introduce new foods one at a time.
- Start with a small quantity and increase gradually.
- Give the new food when the baby is hungry before the breast feed; when s/he gets used to the food give it after the breast feed to take advantage of suckling of a hungry baby which stimulated lactation.
- In the first 6 months all food has to be in a semi-liquid form to be directly swallowed. From 6-9 months food has to be finely mashed gradually changing to coarsely mashed by 9-11 months. At the age of one year the child can eat solid food from the family table, provided it is not spicy.
- Foods can start with fruit juices, pureed vegetables, egg yolk after 6 months, whole egg by one year, beans & rice by 6 months, meat by 9 months. Yogurt can be given early if needed. With decrease in breast feeding and after cessation of lactation the baby needs to have an external source of milk or milk products as cheese, yogurt, mehalabeya/pudding, etc. equivalent to ½ liter of milk.
- Care should be given to have good sources of protein.
- By the age of three years the child can eat the normal family diet provided that the whole family is having an adequate diet and is considering the needs of the different family members.

Immunization:

A corner stone in child health care. Be sure to have a 100% coverage by all the basic vaccines (see table)

Note *Remember: Check for immunization whenever the child is visiting the FHU*

Make use of the immunization day to

- Promote/provide well baby care and health education

- Provide inter-conception care for the mother

- Check the mothers for use of contraceptives for spacing

Conditions which are NOT contraindications to immunization

1. Prematurity (Immunize at usual chronological age)
2. Recent infection such as otitis media
3. Penicillin allergy
4. Local reaction to previous vaccine

5. Pregnant mother (e.g., of child getting MMR)
6. Breast ¯feeding mother (e.g., of child getting OPV)

Child Late for Vaccination

- Start an accelerated scheme immediately. Follow the same sequence for polio and DPT with 4 weeks apart (minimum time interval).
- Measles can be given with polio and DPT on the same sitting, if the child is 9 months or older.
- Hepatitis B follows the recommended schedule: First dose, one month later second dose, 2 - 6 months later third dose.
- If the child has starte vaccination but is late for the second or third dose (up to 12 months), continue vaccination according of the minimum time interval of 4 weeks.

Do not forget

True Contraindication to Immunization

1. Anaphylactic reaction to a vaccine
2. Seizure or fever > 40.5 C within 48 hr of pertussis vaccine
3. True Egg Allergy (MMR)
4. Neomycin allergy (MMR)
5. Immunocompromized patient (OPV)
6. Untreated moderate to severe illness + fever

Table. 6: National Compulsory Vaccination Schedule for Communicable Diseases Targeting Infancy & Pre-School Children

Age of Infant/Child	Type of Vaccine
At birth Zero Dose	Immunization against polio by (OPV) oral polio vaccine 2 drops on tongue
1st contact of child with health authority	Immunization against tuberculosis by BCG (0.1 ml intra dermal injection left shoulder)
2nd Month of age	1. Immunization against poliomyelitis (1st dose) 2 drops on tongue (OPV) 2. Immunization against diphtheria, whooping cough and tetanus DPT (1st dose) left thigh 3. Immunization against Hepatitis B 0.5ml intra-muscular injection into the right thigh.
4th Month of age	1. Immunization against poliomyelitis (2nd dose) 2 drops on tongue (OPV) 2. Immunization against diphtheria, whooping cough and tetanus DPT (2nd dose) left thigh 3. Immunization against Hepatitis B 0.5ml intra-muscular injection into the right thigh
6th Month of age	1. Immunization against poliomyelitis (3rd dose) 2 drops on tongue (OPV) 2. Immunization against diphtheria, whooping cough and tetanus DPT (3rd dose) left thigh 3. Immunization against Hepatitis B 0.5ml intra-muscular injection into the right thigh
9th Month of age	1. Immunization against measles 0.5 ml subcutaneous injection in right upper arm 2. Vitamin A Capsule 100.000 I U 3. Immunization against poliomyelitis (4th dose) 2 drops on tongue (OPV)
18 ¯ 24 Months of age	1. Booster dose of OPV vaccine against poliomyelitis 2 drops on tongue 2. Booster dose of DPT (Diphtheria, Pertussis and Tetanus) 0.5 ml intra-muscular injection into the left thigh 3. MMR 0.5 ml subcutaneous injection in the right upper arm and (vitamin A capsule) 200.000 I U

Remember

Children < 2 years should not have IM injections in the gluteal region.

Table. 7: Vaccine Reactions

Vaccine reaction	Action	Counseling
BCG		
A small red papule develops after 2-3 weeks, ulcerates in another three weeks, heals leaving a permanent scar	Normal reaction	Tell the mother that this is the normal reaction
Rapid reaction: A small red papule develops within few days indicates previous disease or previous immunization	Refer	Seek early medical advice
Local severe reaction with no lymph nodes	If general condition is good, no treatment is needed except dry dressing of the lesion	- Seek early medical advice
Axillary Lymph nodes	Refer for treatment	- Seek early medical advice
No reaction	Repeat vaccination	- Check with the center in three weeks Do not put any dressing.
Oral polio No reactions	If the child has diarrhea vaccinate as usual, and give an extra dose one month after the last	Mild disease or diarrhea is no contraindication to immunization
DPT		
Fever, tenderness, and induration on the same day	Give paracetamol	Reduce fever Bath with water just cooler than the body temperature to reduce temperature
Very high fever or Convulsions	Do not give the pertussis portion any more, give DT	Seek early medical advice
Swelling, induration and fever one week or later indicates abscess formation	Refer	
Hepatitis B	No reaction	
Measles Almost none with the present vaccines. If fever and /or measles like rash after one week	Give paracetamol	Reassure the mother Bath with water just cooler than the body temperature to reduce temperature

Cold Chain:

Vaccines should be kept at the appropriate temperature from the manufacturer until it is used.

The FHU need to be careful with:

- Proper packing of the refrigerator.
- Proper transfer of vaccines from place to place.
- Vaccine carrying for house hold vaccination.

Packing of the Refrigerator:

To pack the refrigerator:

Note Do not put vaccine in the refrigerator until the temperature inside it reach + 80 C or less.

1. Place polio and measles vaccine on the first shelf under the freezer and the rest of the vaccines on the second shelf.
2. Vaccines and diluents are stacked in rows.
3. Clearly separate the different types of vaccines.
4. Leave 1 - 2 cm between rows of vaccine to permit air circulation.
5. The newest vaccine should be placed on the right, so that when vaccine is removed you can always take the oldest first by going from left to right.
6. DPT, DT and TT should not touch the evaporator plate at the back of the top shell of the refrigerator. They may freeze.
7. Vaccine should not be kept in the door

compartment. the door is too warm.

8. Keep ice packs in the freezer.
9. Place containers of water in the bottom of the refrigerator.
10. Put a thermometer inside the refrigerator
11. Check the temperature of the refrigerator twice every day (when start work in the morning and when you leave in the afternoon) and record it on the refrigerator temperature chart.

Vaccine Cold Box

Is used to:

Transfer large quantities of vaccines from place to place

Carry a vaccines for several days.

To pack:

- Place fully frozen ice packs around the inside walls of the carrier.
- Stack vaccine and diluents in the carrier.
- Put plastic foam or packing material between the DPT vaccine and ice to prevent them from touching.
- Place ice packs over the top of the vaccine and diluents.
- Secure the lid tightly.

To pack vaccine carrier follow the same steps as the cold box vaccine

Name of child ----------

DoB ----------

Child Health Screening Guide

Screening Test	2m	4m	6m	9m	12m	18m	24m	36m	48m	60m
History update										
Physical exam										
Weight										
Length/height										
Head circumference										
Developmental Ass										
Nutrition review										
Breast feeding										
Weaning & Diet										
Eye & vision										
Hearing screening										
Blood pressure										
Dental care										
Hemoglobin										
Stool (as needed)										
Urine (as needed)										
BCG (before 3 m)										
OPV										
DPT										
HBV										
Measles										
MMR										
Family Assessment										
Social Assessment										
Progressive Health guidance										

Figure "6": Form of Child Health Screening Guide

Table. 8 Developmental Examination

Completion of	Motor Development			Language			Cognitive			Social, Psychological		
6 Weeks	Fixes sight on mother's face	Y	N	Normal crying	Y	N	Sucking, & grasping reflexes	Y	N	Smile	Y	N
3 months	Holding head Raises chin above table	Y Y	N N	Coos and squeals	Y	N	Putting finger in mouth	Y	N	Smiles to mother more	Y	N
6 months	Sitting with or without support	Y	N	Produces vowel sound, babbling	Y	N	Forgets rattle if hidden	Y	N	Recognizes the mother	Y	N
15 months	Walks alone	Y	N	Says mama, papa, vocabulary of 3-20	Y	N	Hidden object traced by child	Y	N	Assists and cooperates in dressing	Y	N
years	Runs, rides tricycle, up & down stairs, tip-toe	Y	N	3 words sentences Gives name and sexes	Y Y	N N	Can identify & name objects Copies + & 0	Y Y	N N	Feeds self well Puts on sandals	Y Y	N N

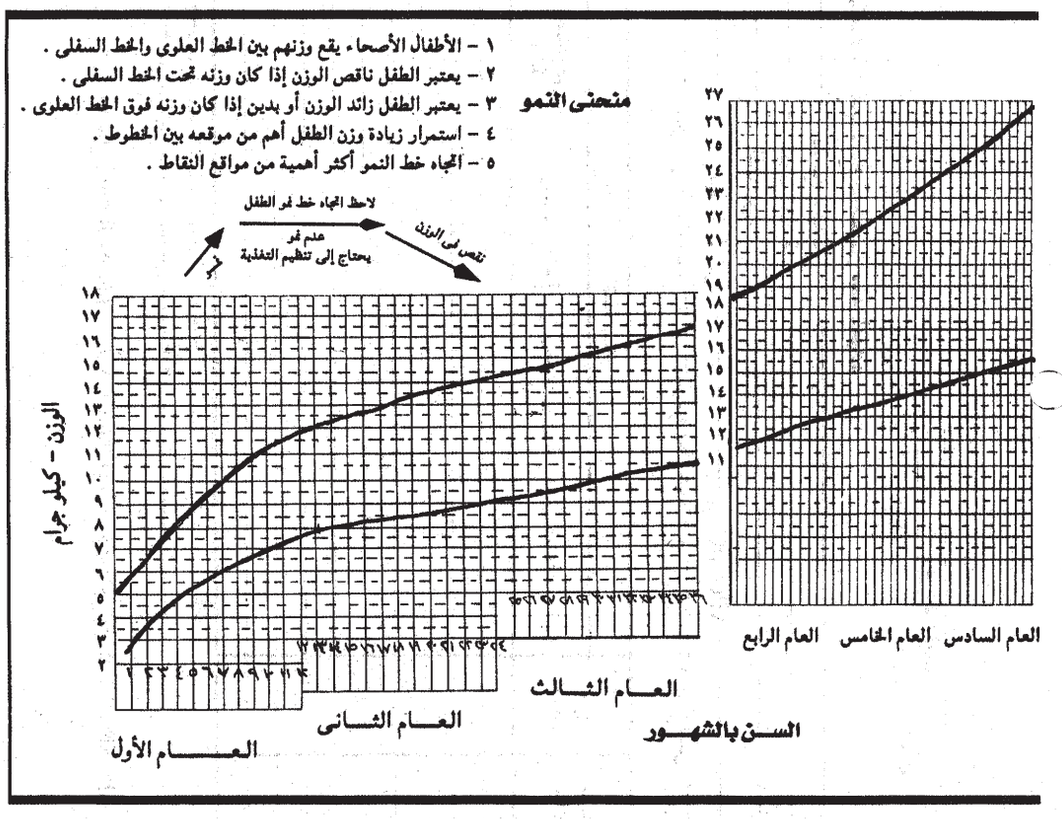


Figure "7": Form of Growth Curve (Arabic version)

وزارة الصحة والسكان
مديرية الشئون الصحية والسكان بمحافظة:.....
إدارة صحية/منطقة طبية : -------
وحدة / مركز صحة الأسرة : ----------

ف-٧-٢٠٠٣

رقم الملف العائلي		
رقم المنزل	رقم الأسرة	رقم الفرد

استمارة متابعة الطفل منذ الميلاد

الاسم: ---------- تاريخ الميلاد: ----------
نوع المولود: ---------- فصيلة الدم: ---------- عيوب خلقية: ----------
بيانات الولادة/ مكانها:---------- نوعها: ---------- القائم بها: ----------
الوزن: ---------- الطول: ---------- محيط الرأس: ---------- APGAR* : ----------
بدء الرضاعة الطبيعية:خلال ساعة: ------ ٦ ساعات: ----- أكثر من ٦ ساعات: ------تاريخ أخذ عينة الدم:-------نوع الفحص:-----

متابعة دورية منذ الولادة حتى عمر أقل من ٥ سنوات

التاريخ	العمر (شهر)	الوزن (كجم)	الطول (سم)	محيط الرأس (سم)	التغذية				نوع التطعيم	تاريخ التطعيم
					رضاعة طبيعية مطلقة	رضاعة صناعية	رضاعة مزدوجة	فطام(رضاعة+مكملات)		
	٢									
	٤									
	٦									
	٩									
	١٢									
	١٨									
	٢٤									
	٣٦									
	٤٨									
	٦٠									

حالات خاصة:عيوب حواس:.....إبصار.....سمع.....كلام.....
حساسية .....أدوية .....أغذية.....
تأخر في النمو العقلي:.....
أمراض وراثية:.....

*APGAR (A activity - P pulse - G grimace - A appearance - R respiration)

Figure "8": Form for Neonatal and child follow up since birth (Arabic Version)

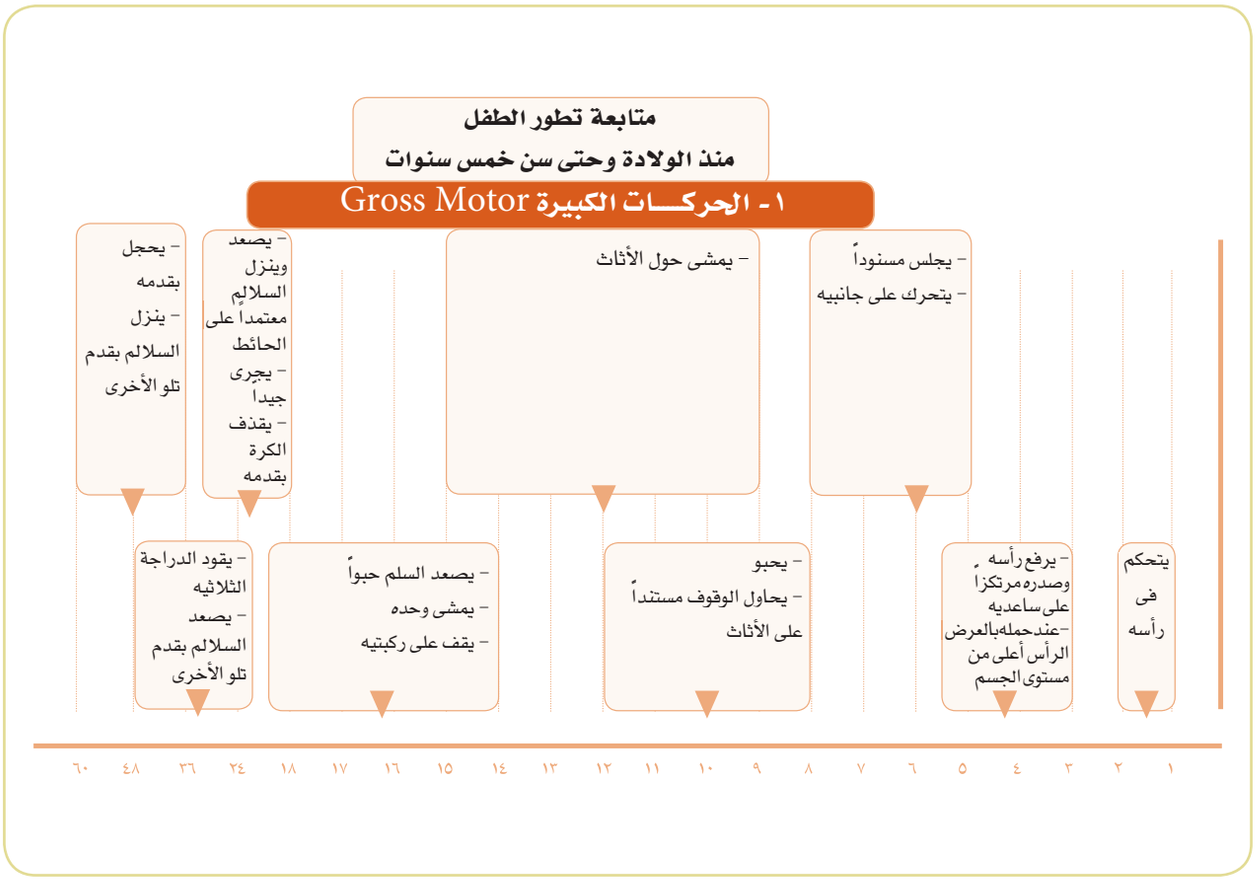
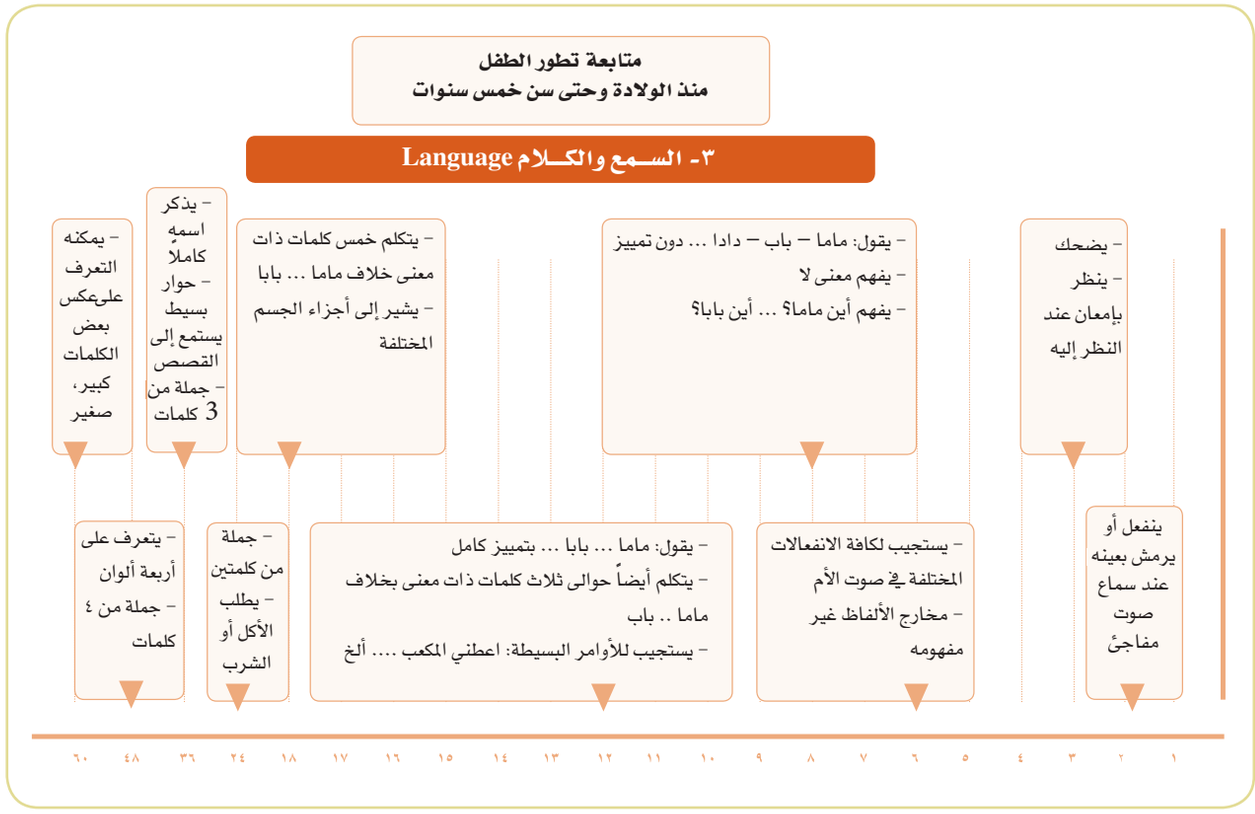


Figure "9": Diagram for developmental Milestones since birth till under 5 years old – Gross Motor (Arabic version)

Figure"10": Diagram for Developmental Milestones since birth till under 5 years old – Fine Motor and Vision (Arabic version)



Figure"11": Diagram for Developmental Milestones since birth till under 5 years old – Hearing & Language (Arabic version)

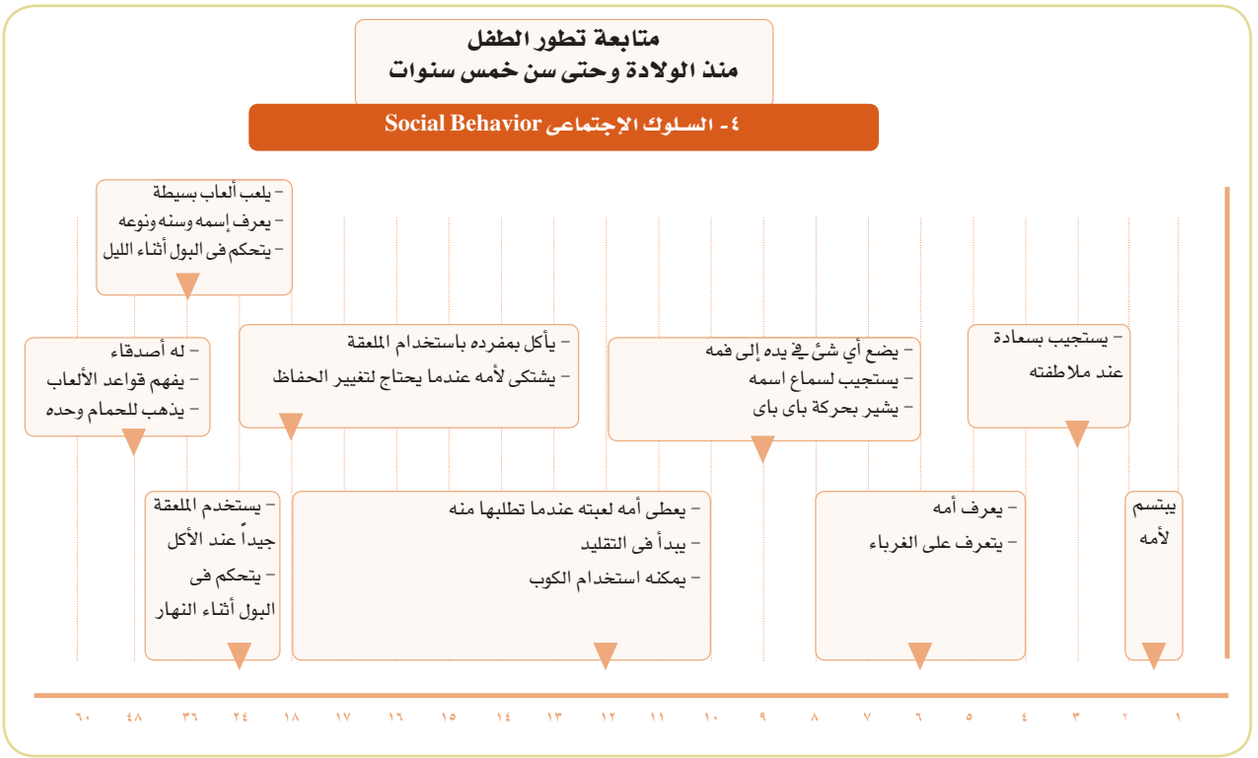


Figure "12": Diagram for Developmental Milestones since birth till under 5 years old - Social Behavior (Arabic version)

PRINCIPLES OF PRESCRIBING IN PEDIATRICS

- According to British Pediatric Association Childhood is classified into:

  1-Neonate: first THIRTY days of life.

  2-Infant: from 1 month to TWO years.

  3- Child: from 2 years to TWELVE years.

  4- Adolescent:from 12 to 18 years.

- Changes in response to drug therapy in this age group depends upon the following factors:
  1. Changes in drugs pharmacokinetics.
  2. Changes in drugs pharmacodynamics
  3. Patient and guardian compliance.

Pharmacokinetic Aspects

Absorption:

****From GIT:**

1.Gastric acidity:

- Established few hours after birth normally,in preterm after four days.It reaches adult value after TWO years.

So, Acid sensitive Penicillins e.g.(Ampicillin,Amoxicillin) are absorbed more at this age.Penicillin G can be used effectively and economically in preterms and neonates.

2.GIT enzymes and Bile acids:

They are low up to FOUR months, so fat sol. Vitamins and drugs are poorly absorbed.

3.Gastric emptying:

It is delayed for 6:8 hours in first day, it reaches adult value after SIX months.

4.Peristalsis:

It is irregular and slow, but increased in diarrhoeal conditions,with short transit time for drugs in intestine.

•• From SKIN:

Being delicate and thin, Good absorption of drugs takes place,e.g.Corticosteroids,which may lead to Cushing disease.Topical Sulpha creams may cause Methemoglbinemia.

•• From Muscles&Subcutaneous routes:

It is affected by the state of peripheral circulation, which is affected in cases of shock, dehydration, etc..leading to decreased response early,with toxic effects later.

This is commonly seen with Cardiac glycosides, Aminoglycosides, and Anti-epileptic drugs.

Muscle bulk is small in premature.It is a Painful route of admin., with hazards of introduction of infection to site of injections.

Distribution:

Water is distributed in different compartments of the body as follows:

Table. 9: Water Distribution in Different Body Compartments

	Preterm	Full term	Adult
Total B.water	85%	70:75%	50:60%
ECF	50%	40%	20%
ICF	30%	34%	41%
Fat	1-3%	12-15%	15%

Signiffcance:

- Water soluble drugs e.g. Aminoglycosides are given in larger doses / Kg for preterm > term > Adults.
- BBB is not well developed in pediatric age,so drugs can pass easily to CNS.

Protein Binding of Drugs:

- It is low in young age groups, So, FREE part is high,may lead to toxicity.

  e.g. with Diazepam,phenytoin, ampicillin,phenobarbitone.
- Drugs compete with Bilirubin for albumin binding, leading to Kernicterus,e.g. Sulphonamides.
- Bilirubin can displace drugs from their protein binding, e.g. Phenytoin, leading to toxicity.

Biotransformation:

- MFO(Mixed Function Oxidases) is only 50 - 70 % of adult activity.
- Glucuronidation reaches adult value at 3-4 years. Thus... Drug Clearance is reduced,and $T_{1/2}$ is prolonged,leading to toxicity e.g. Chloramph enicol (Grey Baby Syndrome).
- If mothers are receiving enzyme inducers e.g. phenobarbital the foetal enzymes develop earlier.
- This is useful in treatment of indirect hyperbilirubinemia in cases of Blood Groups incompetability(RH- incompatibility).

Excretion:

- GFR in neonates is 30-40% of adult value in 1st day, 50-60% of adult value after one month, 100% after 6-12 months.
- Thus, Renal clearance of drugs is Low in early life,and doses must be reduced both in dose and frequency. e.g.
- Ampicillin in < 7 days neonates=50-100 mg/Kg/d BID.

  In > 7 days neonate =100-200 mg/Kg/d TDS.

  Gentamycin in < 7 days neonates-= 5mg/Kg/d BID.

  in > 7 days neonates = 7.5 mg/Kg/d TDS.
- Digoxin doses for this age group is very difficult in absence of monitoring its plasma level(TDM).

  Approximate half-lives of some drugs in Neonates and adults:

Table. 10: Half- Lives of some Drugs in Neonate and Adults

Drug	Neon.T1/2	Adult T1/2
Acetaminophen	2.2-5 Hrs	0.9-2.2 Hrs
Diazepam	25-100	40-50
Digoxin	60-70	30-60
Salicylate	4.5-11	10-15
Theophylline	13-26	5-10
Phenobarb	200	64-140
Phenytoin	80	12-18

Pharmacodynamic Aspects

- As adults,except for special features e.g. in PDA
  - Indomethacin causes rapid closure of PDA, whether given to mother or neonate.
  - PGE1 infusion to keep it open in TGA & Fallot tetralogy.
  - PGE1 infusion causes antral hyperplasia, with gastric outlet obstruction in neonates.
- Target organ sensitivity and pattern of receptors is not well developed in young age, e.g. B2 agonists in asthmatic children, versus spasmolytics.

Pediatric Dosage forms: REMARKS to keep in mind with pediatric medications:

1. Sugar free forms are used for Diabetic children, and to prevent dental caries.
2. The sweetener ASPARTAME is avoided

in cases of Pkenylketonuria, due to its phenylalanine content.

3. Sorbitol and Glycerol -Sweeteners- may cause Diarrhoea.
4. Lactose-as excipient-causes Diarrhoea in lactase deficiency.
5. High osmolality infant feeding formulae cause Necrotizing Entero-colitis, and should be avoided.
6. Don't add drugs to MILK or Juices, or Food Formulae.
7. Remember that skin is thin and drugs can be absorbed from it, giving systemic effects and side effects.
8. MDIs as anti asthmatic drug therapy is difficult to apply for this age group.
9. Use of SPACERS, NEBULIZERS, and Breath activated devices e.g. Rotahalers, Diskhalers make it easier.

Pediatric Compliance in drug use

For better Compliance in drug use:

1. Palatable forms (Acceptable taste and odour).
2. Use of Calibrated Spoons,Bottle cap measures, or Syringes, for proper dose administration.
3. The lesser the frequency, of administration, zthe better the patient compliance.
4. Education of the parents especially the mothers, about the dose, the frequency, and the duration of treatment.

DOSE CALCULATION IN PEDIATRICS

Doses are Calculated by:

AGE,or WEIGHT,or SURFACE AREA.

The best Golden RULE is to follow the Manufacturer's Dosage Schedule in the leaflet insert of the drugs.

Young's Formula (age):

Child dose = Adult dose X age (years)/(age +12)

Clarke's Formula (Weight)

Child dose= Adult dose X Weight (Kg) /60

Weight (Lb) / 150

- In children less than ONE year age,they have Large surface area,and to avoid Overestimation of dosage,it is advisable to use weight in calculations,especially in oncology where surface area is widely used in calculations.
- In obese children, calculate dose according to Ideal Body weight,depending on age and height.

Using Surface area for calculation:

- Body surface area = Square root of (Height (cm)XWt (Kg) / 3600)
- Special Nomograms are available for correlating weight,age, height and surface area.

Child dose = Adult dose X Child's S.A. / 1.73

Table.11: Determination of Drug Dosage from Surface Area

Weight(Kg)	Age	SA(m2)	% of adult dose
3	Newborn	0.2	12
6	3 months	0.3	18
10	1 year	0.45	28
20	5.5 y	0.8	48
30	9	1	60
40	12	1.3	78
50	14	1.5	90
60	adult	1.7	100
70	adult	1.76	103

Frequent Adverse drug reactions in infants and children beyond the neonatal period:

GIT	Nausea, Vomiting	many drugs
	Diarrhoea	Ampicillin
	Moniliasis	Ampicillin
	Stained teeth	Tetracyclines
Blood	BM depression	Chloramphenicol & cytotoxics
	Megaloblastic anemia	Phenytoin, Septrin
Skin	Maculopap. rash	Ampicillin, Phenytoin
	Urticaria	Pen, Aspirin
CVS	Bradycardia	Digoxin
	HTN	Steroids (even Local)

CNS	Drowsiness	Phenobarb, Carbamazepine, Anti - hist (1st Gen.)
	Ataxia	Phenytoin, Carbamazepine
	Dyskinesia	Metoclopramide, Domperidone
Metabolic	Hypokalemia	Frusemide, Thiazides
	Hyperglycemia	Thiazides, Steroids
	Cushingoid Syndrome	Steroids
	Raised liver enzymes	NSAIDs, INH, Paracetamol
Jaundice	Hemolytic	Aspirin, Sulpha,Vit. K(W.sol)
	Cholestatic	Macrolides, CPZ, Amox.Clav.
Discolored Urine		Rifampicin

Perinatal drug hazards i.e.Drugs given to mothers affecting Neonates

Opiates	Neonatal depression, Seizures.
Ethanol	Foetal alcohol Syndrome
Barbiturates	Neonatal dep, Enzyme induction.
Phenothiazines	Neonatal dep, Extrapyramidal manifest.
Diazepam	Neonatal dep
Lorazepam	Hypothermia
Lithium	Goitre
Aminoglycosides	Ototoxicity, Nephrotoxicity
Tetracyclines	Teeth hypoplasia & discoloration, impaired foetal bone growth.
Sulphonamides	Kernicterus, Hemolytic anemia
Chloroquine	Retinopathy,Ototoxicity
Beta blockers	Bradycardia
Reserpine	Bradycardia, lethargy.
Androgens	Virilization & Ambigious genitalia
Progestogens	Virilization & Ambigious genitalia
Oestrogens	Feminization, Vaginal Adenocarcinoma in Teens
Iodides	Euthyroid Goitre
Carbimazole	Hypothyroid goitre.

Drugs in Breast Milk Affecting infants:

• **Phenobarb**	Drowsiness
• **CPZ**	Drowsiness,? Cholestasis.
• **Lithium**	Hypotonia, Hypothermia, Cyanosis
• **Chlorpheniramine, Ephedrine**	Irritability,insomnia.
• **Senna, Cascara**	Diarrhoea

COMMON MALPRACTICES OF DRUG USE IN PEDIATRICS

- Aspirin.
- Vitamin D injections (600,000 IU).
- Aminoglycosides as antibiotics.
- Aminoglycosides(Streptomycin/Neomycin) in anti-diarrhoeal mixtures.
- Halogenated Quinolines(Diiodo,or dichloro quinoline) in anti-diarrhoeal mixtures.
- Dipyrone (Novalgin) and related drugs.
- Chloramphenicol as a routine antibiotic.
- Diclofenac and related compounds as antipyretics.
- MDIs misuse in asthmatic children.
- Quinolones in Pediatrics and adolescents.
- Cold preparations containing PPA.
- Cold preparations containing antihistaminics (1st gen.) in Bronchitis.
- Cough suppressants (anti - tussives) in productive cough.

- Multivitamins misuse.
- Use of Ampicillin /Sulbactam vials after dissolution. {5-8 hours}
- Anti-amoebic mixtures dosing.
- Topical use of steroids.
- Use of steroids in Chicken pox (Topically or Systemically).
- Herbal products misuse without EB, e.g: Nigella sativa, Echinacea,Badly stored seeds of Anise, Carawy, etc.

Drugs avoided in G.6.P.D. deffciency

- Sulphonamides & their combinations.
- Chloramephnicol
- PAS (Anti-TB)
- Nitrofurantoin
- Pyrimethamine,proguanil,primaquine.
- Aspirin.
- Water soluble vitamin K.
- Novalgin

So how can you prevent your child

from being injured by medical errors?

- The most important thing is to find a Pediatrician that you know and trust.
- Learn about your child's illness, especially if it is a chronic condition, like asthma or diabetes.
- Ask questions about your child's prescriptions.
- Ask questions about medical treatments.
- Ask about potential side effects.
- Be sure to mention your child's allergies everytime your child is prescribed or administered a medication.
- Also mention your child's other medical problems.
- And mention other medications your child is taking, including herbal or over the counter medications,
- Ask about what symptoms to look for that can mean your child's illness is worsening.
- Seek a second opinion if you really think your child isn't being cared for correctly.

MOHP References:
MOHP, Section for Technical Support & Projects, Human resources Central Department (March 2005); Introduction to Family Medicine Training Program for Family Physicians: Section on Pediatrics.
MOHP; WHO/CHD; UNICEF; USAID; "Integrated Management of Childhood Illness"
MOHP, PHC Sector; "TREAT THE CHILD: IMCI Egyptian Adaptation"
وزارة الصحة والسكان، الإدارة المركزية للرعاية الصحية المتكاملة، الإدارة العامة لرعاية الأمومة والطفولة: "دليل خدمات رعاية الأمومة والطفولة"
جمهورية مصر العربية، وزارة الصحة والسكان، منظمة الصحة العالمية ٩٩/٢٠٠٠: "دليل العمل بالرعاية الصحية الأساسية"
وزارة الصحة والسكان: "كتيب الممرضة لخطوات الرعاية المتكاملة للطفل المريض"

كلية الطب
Faculty of Medicine

GIRLS

Egyptian Growth Charts 2002
(Birth - 36 months)

جامعة القاهرة
Cairo University

Source: Cairo University. Diabetic Endocrine and Metabolic Pediatric Unit and the National Research Centre - Cairo, in collaboration with Wright State University. School of Medicine. Department of Community Health Lifespan. Health Research Center. From a sample size of 33189 boys & girls (birth - 21 years):

- 2735 girls, for head circumference from birth - 36 months.
- 2770 girls, for recumbent length from birth - 36 months.
- 3016 girls, for weight from birth - 36 months.
- 2602 girls, for weight for recumbent length from birth - 36 months..

How to measure:

Weight: from birth - 2 years, a girl should always be weighed naked on an appropriate, self-calibrating or regularly calibrated scale. An older girl should be weighed with her underwears. Record to the nearest 0.1 kg.

Head circumference: head circumference measurement should be taken from midway between the eyebrows and the hairline at the front of the head and the occipital prominence at the back. Appropriate thin plastic tape should be used.

Supine length: from birth to 2-3 years, a girl should be measured on her back by 2 people with appropriate equipment featuring a headboard and moveable footboard. Whilst one person holds the head against the headboard, with the head facing upwards in the Frankfurt plane*, a second person measures the length by bringing the footboard up to the heels. Ensure that the legs are flat at the knee joints.

Standing height: from approximately 2-3 years onwards, standing height should be measured against an appropriate vertical measure. The heels should be together with the buttocks and shoulder blades touching the vertical and the head positioned in the Frankfurt plane*. To ensure that the true height is taken, apply gentle upward pressure to the mastoid processes.

Record head circumference, length and height to the nearest 0.1 cm.

* The Frankfurt plane is an imaginary line from the center of the ear hole to the lower border of the eye socket.

How to Calculate the Target Centile Range (TCR):

From age 2 years onwards, if every girl follows her genetic growth pattern, she should be growing within her Target Centile Range **(TCR)** parallel to one of the centile lines. If not, refer to specialist. To calculate her **TCR**, apply the following steps: measure father's and mother's heights (a & b), calculate the sum (c), their mean height (d), the corrected Mid-Parental Height **(MPH)** (e) and the Target Centile Range (f) as shown. Apply arrow (e) opposite the corrected MPH, and draw a vertical line above and below, opposite the **TCR**.

Date	Age	*	Measurement	Name
14/03/03	9/12	L	72.5 cm	
14/03/03	9/12	H/C	46.0 cm	
14/03/03	9/12	W	9.3 Kg	
14/03/03	9/12	W/L	75 th	

Severity of Malnutrition

Grade of malnutrition	Weight for age*	Weight for length**
0, normal	> 90	> 90
1, mild	75 - 90	81 - 90
2, moderate	60 - 74	70 - 80
3, severe	< 60	< 70

* Data from Gomez F, Galvan RR, Frank S, et al.: Mortality in second and third degree malnutrition. J trop Pediatr 2:77,1956
** Data from Waterlow JC: Classification and definition of protein-calorie malnutrition. Br Med J 3:566,1972.

Guidelines for recording , plotting and referral:

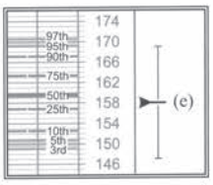
Record the measurements using the boxes included in this chart. Enter the date and the current age, specify the measurement in the box below the asterisk (i.e. H/C = Head circumference, H = Height, L = Length, W = Weight, W/L = Weight for length) and put your name. Plot each measurement on the curve with a well defined dot. Trace the growth curve with a line but leave the dots clearly visible. A normal growth curve is one that always runs roughly on, or parallel to one of the printed centile lines. If it doesn't, consider these guidelines:

Refer a girl whose height falls above the 97th or below the 3rd centile line or outside her Target Centile Range **(TCR)**. Refer her, also, if her growth curve deviates upwards or downwards, over a period of 12-18 months, by a width of one centile distance.

In short-term undernutrition, weight declines before length, so values of weight for age and weight for recumbent length centiles are low compared to length for age centile. In long-term undernutrition, stunting is eventual, so in addition to the low weight for age centile, the length for age centile starts to deviate, whereas the weight for recumbent length centile returns towards normal. When weight falls below the 3rd centile, it is of value to determine the degree of malnutrition (look to the opposite table), this by expressing the patient weight as a percentage of the mean value of her age.

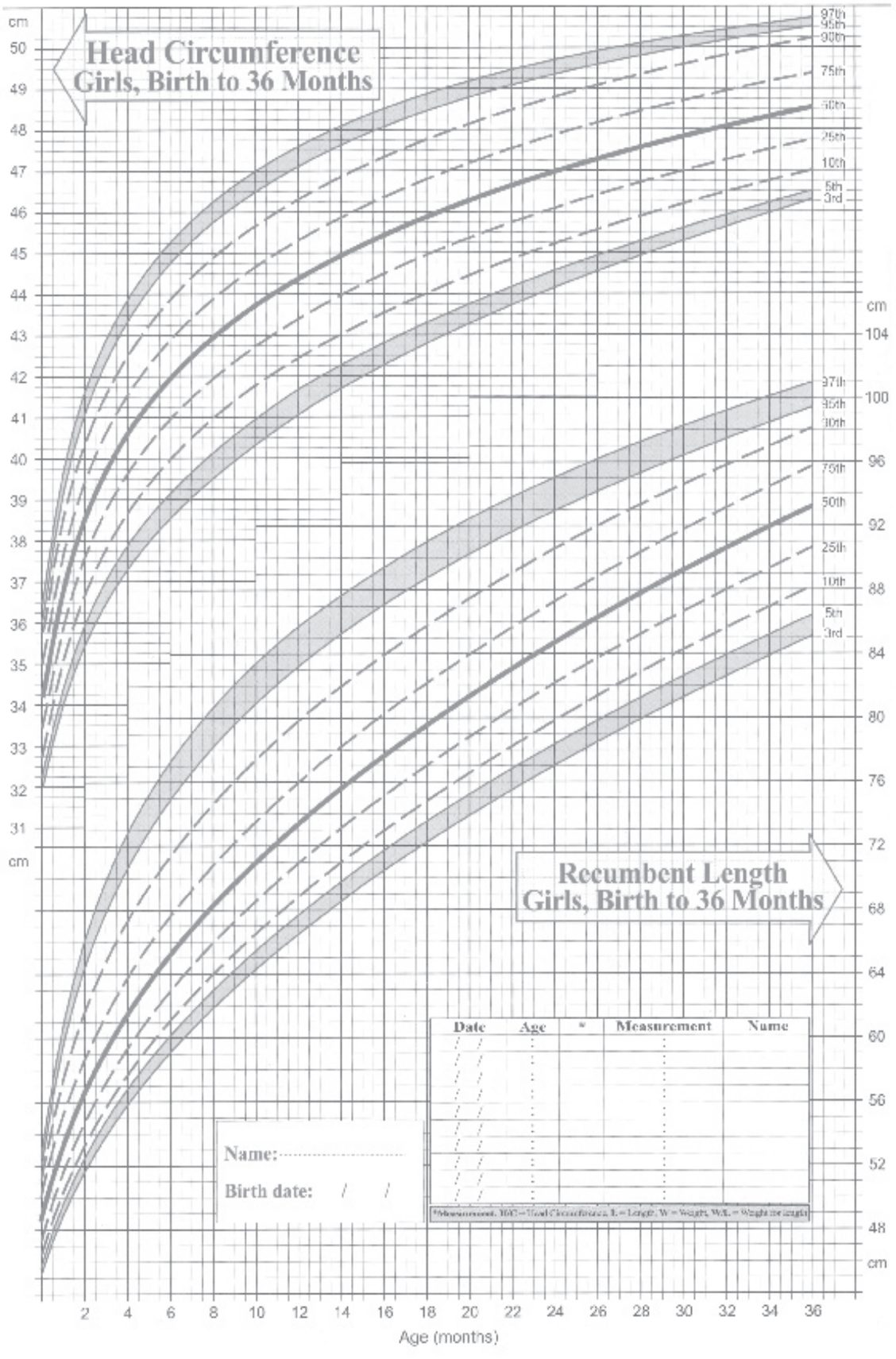
(a) = Father's height
(b) = Mother's height
(c) = Sum of (a) and (b)
(d) = (c) ÷ 2
(e) = (d) - 7 cm = (MPH)
(f) = MPH ± 11 cm

(a) = 174 cm
(b) = 156 cm
(c) = 330 cm
(d) = 165 cm
(e) = 165 - 7 = 158 cm
(f) = 158 ± 11 cm

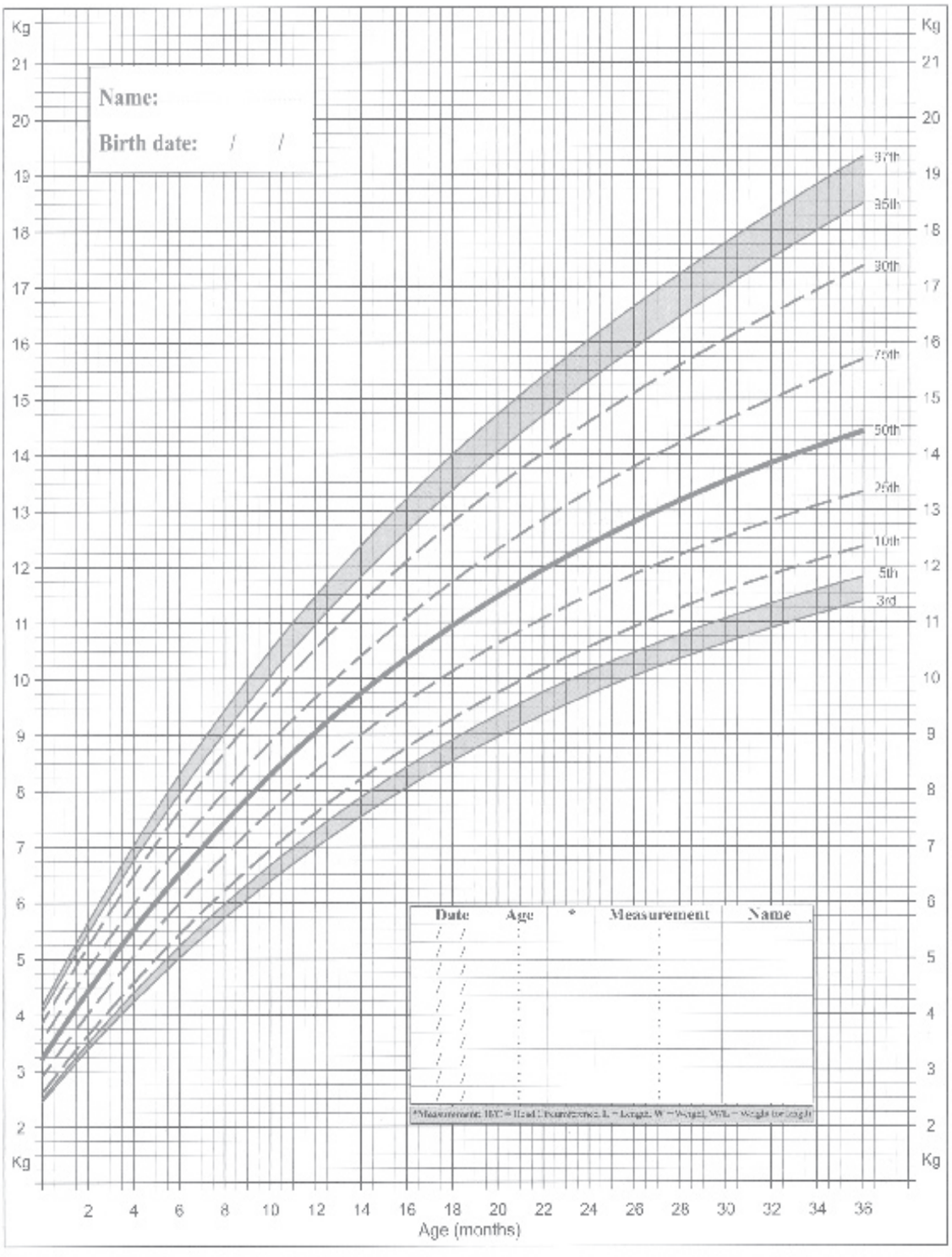


Acknowledgments:
The Egyptian Supreme Council of Universities, Foreign Relations Coordination Unit (FRCU) - Mendez England & Associates, Cairo - The Egyptian Ministry of Education - The Egyptian Participating Schools and Universities.

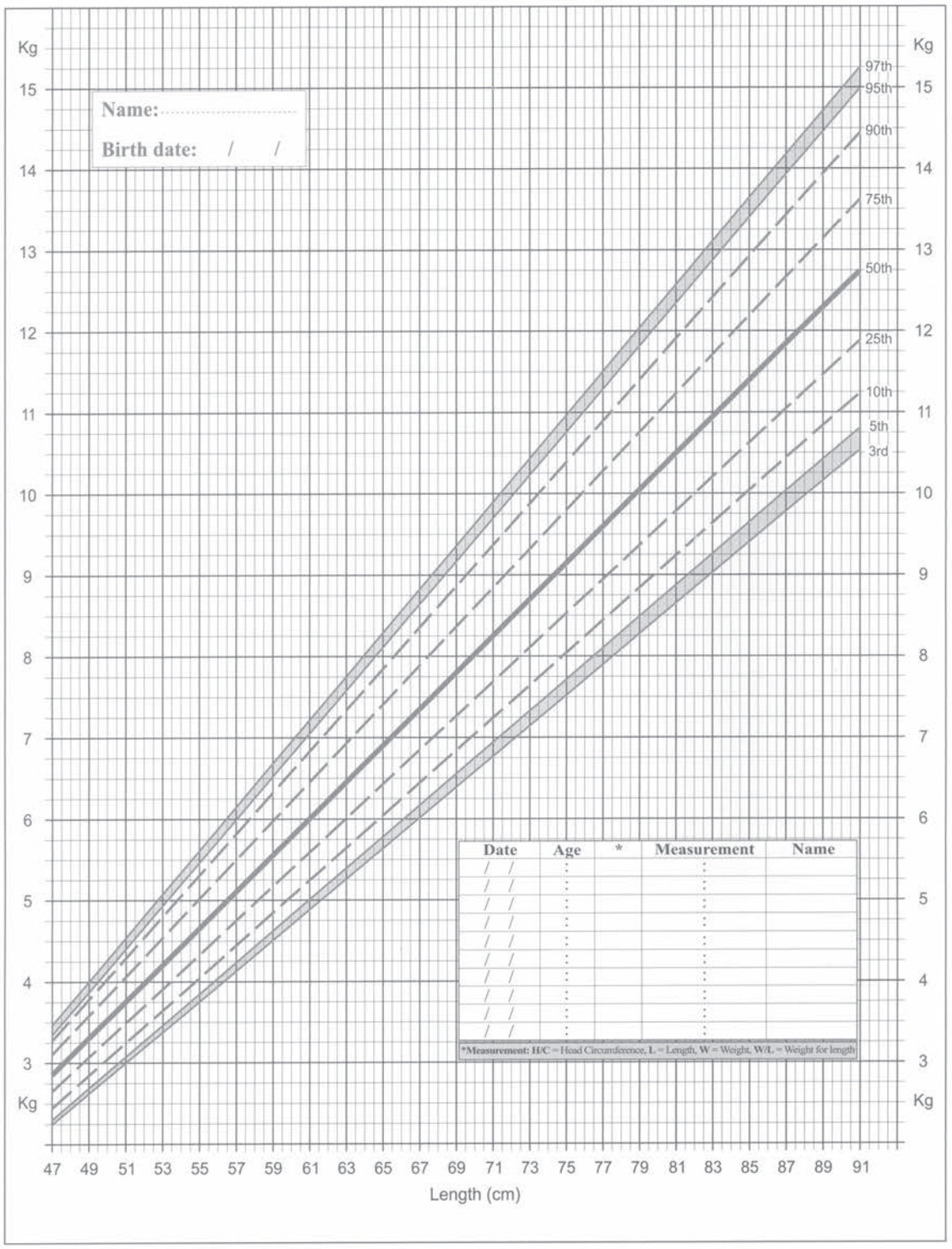
Printed and distributed by Aventis


Head Circumference
Girls, Birth to 36 Months
Recumbent Length
Girls, Birth to 36 Months
cm
97th
95th
90th
75th
50th
25th
10th
5th
3rd
Name:
Birth date: / /
Date
Age
Measurement
Name
Age (months)

Weight-for-Age Percentiles: Egyptian Girls, Birth to 36 Months



Weight-for-Recumbent Length Percentiles: Egyptian Girls, Birth to 36 Months



كلية الطب
Faculty of Medicine

GIRLS

Egyptian Growth Charts 2002
(2 - 21 years)

جامعة القاهرة
Cairo University

Source: Cairo University. Diabetic Endocrine and Metabolic Pediatric Unit and the National Research Centre - Cairo, in collaboration with Wright State University. School of Medicine. Department of Community Health Lifespan. Health Research Center. From a total sample size of 33189 girls & boys (birth - 21 years):

- 13809 girls, for stature from 2 - 21 years
- 13933 girls, for weight from 2 - 21 years.
- 13762 girls, for BMI from 2 - 21 years.

How to measure:

Weight: from birth - 2 years, a girl should always be weighed naked on an appropriate, self-calibrating or regularly calibrated scale. An older girl should be weighed with her underwears. Record to the nearest 0.1 kg.

Head circumference: head circumference measurement should be taken from midway between the eyebrows and the hairline at the front of the head and the occipital prominence at the back. Appropriate thin plastic tape should be used.

Supine length: from birth to 2-3 years, a girl should be measured on her back by 2 people with appropriate equipment featuring a headboard and moveable footboard. Whilst one person holds the head against the headboard, with the head facing upwards in the Frankfurt plane*, a second person measures the length by bringing the footboard up to the heels. Ensure that the legs are flat at the knee joints.

Standing height: from approximately 2-3 years onwards, standing height should be measured against an appropriate vertical measure. The heels should be together with the buttocks and shoulder blades touching the vertical and the head positioned in the Frankfurt plane*. To ensure that the true height is taken, apply gentle upward pressure to the mastoid processes.

Record head circumference, length and height to the nearest 0.1 cm.

* The Frankfurt plane is an imaginary line from the center of the ear hole to the lower border of the eye socket.

Body Mass Index (BMI):

To calculate the BMI, apply the following formula:

$$\text{BMI} = \frac{\text{weight in kg}}{(\text{length / height in m})^2}$$

Date	Age	*	Measurement	Name
14/03/03	9.5	H	136	
14/03/03	9.5	W	40	
14/03/03	9.5	BMI	21.6	

How to Calculate the Target Centile Range (TCR):

From age 2 years onwards, if every girl follows her genetic growth pattern, she should be growing within her Target Centile Range **(TCR)** parallel to one of the centile lines. If not, refer to specialist. To calculate her **TCR**, apply the following steps: measure father's and mother's heights (a & b), calculate the sum (c), their mean height (d), the corrected Mid-Parental Height **(MPH)** (e) and the Target Centile Range (f) as shown. Apply arrow (e) opposite the corrected **MPH**, and draw a vertical line above and below, opposite the **TCR**.

Guidelines for recording , plotting and referral:

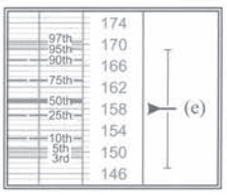
Record the measurements using the boxes included in this chart. Enter the date and the current age, specify the measurement in the box below the asterisk (i.e. H/C = Head circumference, L = Length, W = Weight, H = Height, BMI = Body mass index) and put your name. Plot each measurement on the curve with a well defined dot. Trace the growth curve with a line but leave the dots clearly visible. A normal growth curve is one that always runs roughly on, or parallel to one of the printed centile lines. If it doesn't, consider these guidelines:

Refer a girl whose height falls above the 97th or below the 3rd centile line or outside her Target Centile Range **(TCR)**. Refer her, also if, in the pre-school age, her growth curve deviates upwards, or downwards, over a period of 12-18 months, by a width of one centile distance or, in the school age, by 2/3 of a centile distance.

Refer a girl whose Body Mass Index **(BMI)** equal or above 95th centile as obese. Girls with BMI equal or above the 85th centile but less than the 95th centile should be considered as overweight. Also, refer a girl whose BMI, falls below the 3rd centile as significantly underweight.

(a) = Father's height
(b) = Mother's height
(c) = Sum of (a) and (b)
(d) = (c) ÷ 2
(e) = (d) - 7 cm = (MPH)
(f) = MPH ± 11 cm

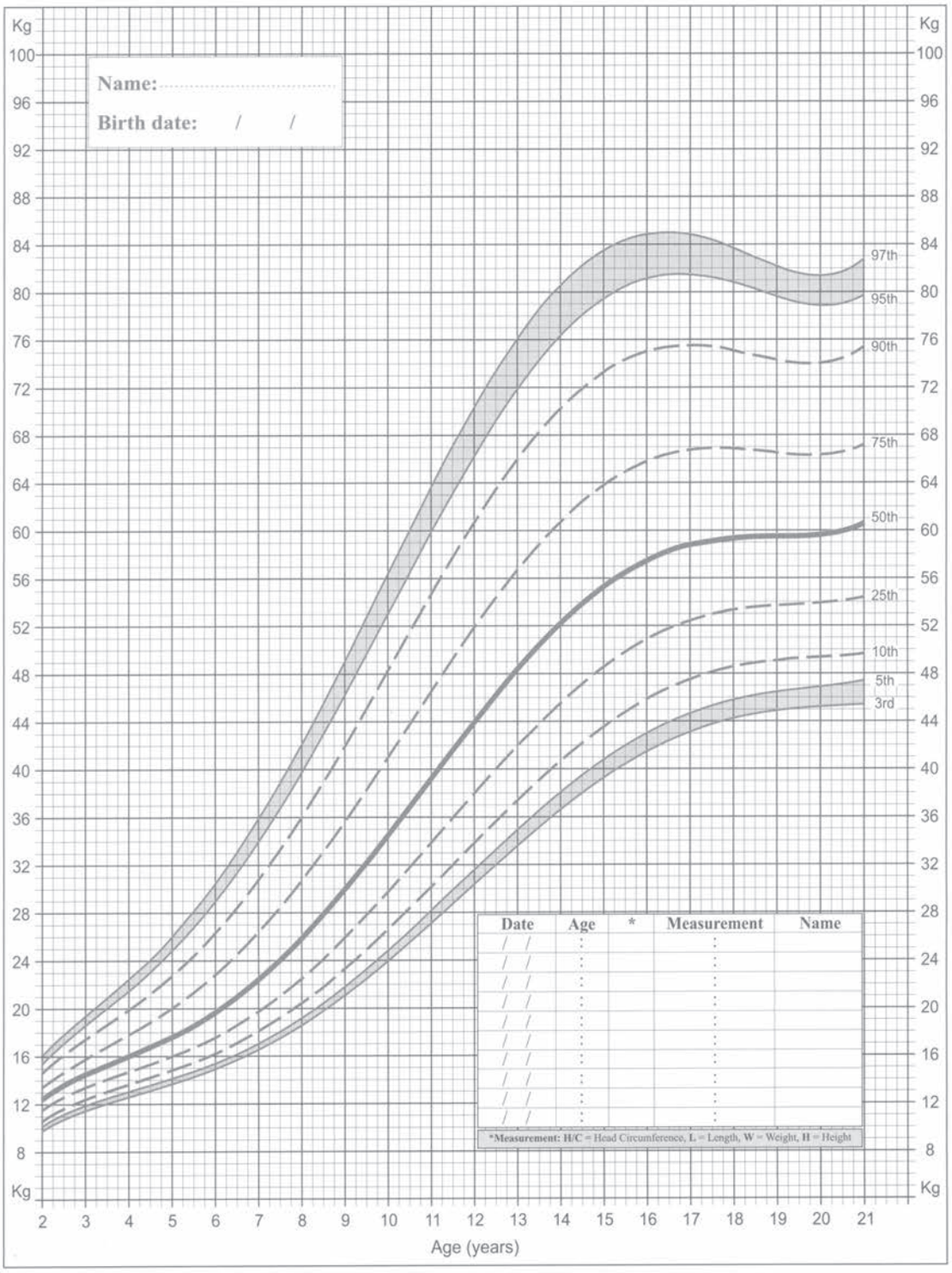
(a) = 174 cm
(b) = 156 cm
(c) = 330 cm
(d) = 165 cm
(e) = 165 - 7 = 158 cm
(f) = 158 ± 11 cm



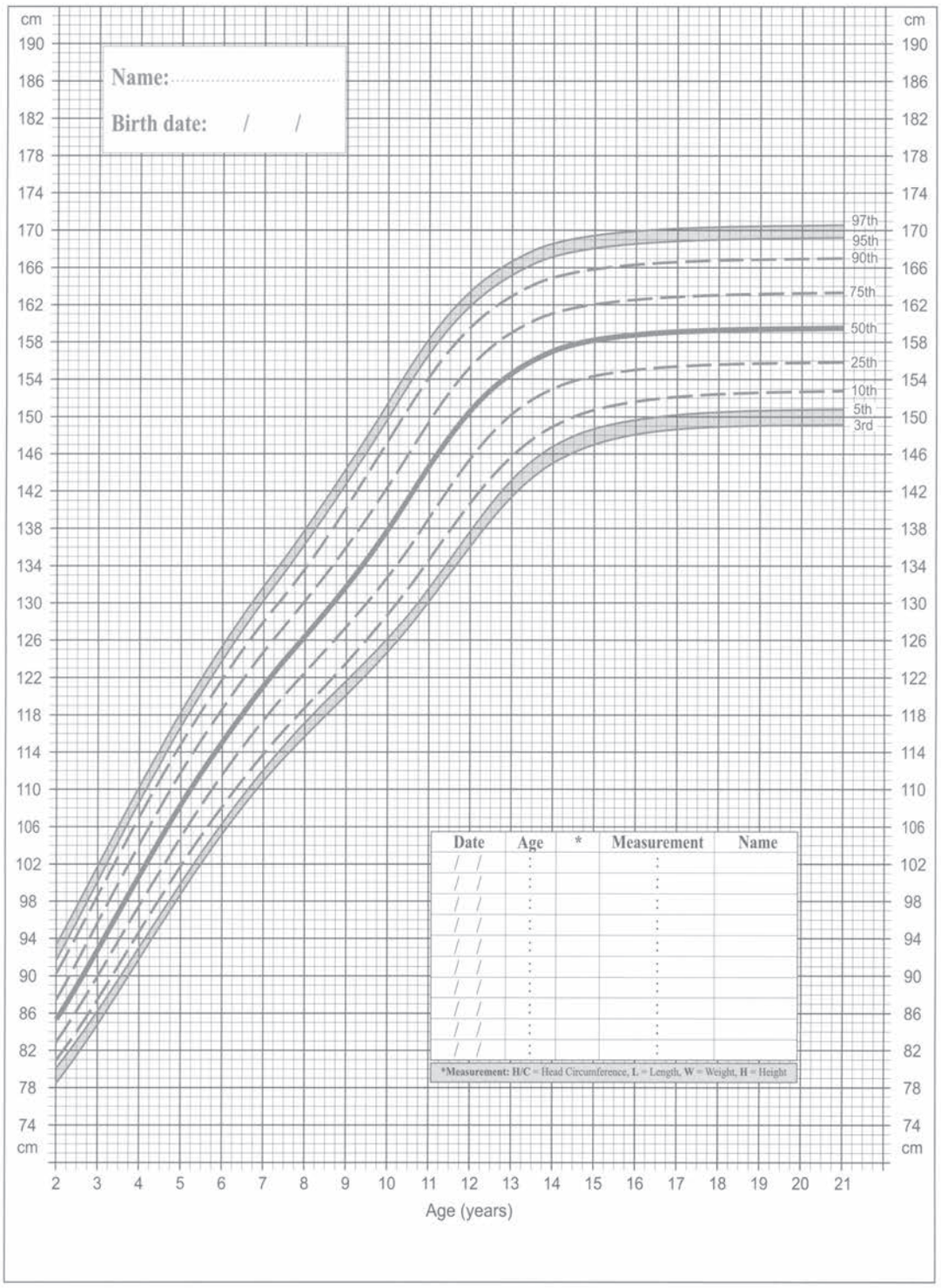
Acknowledgments:
The Egyptian Supreme Council of Universities, Foreign Relations Coordination Unit (FRCU) - Mendez England & Associates, Cairo - The Egyptian Ministry of Education - The Egyptian Participating Schools and Universities.

Printed and distributed by Aventis

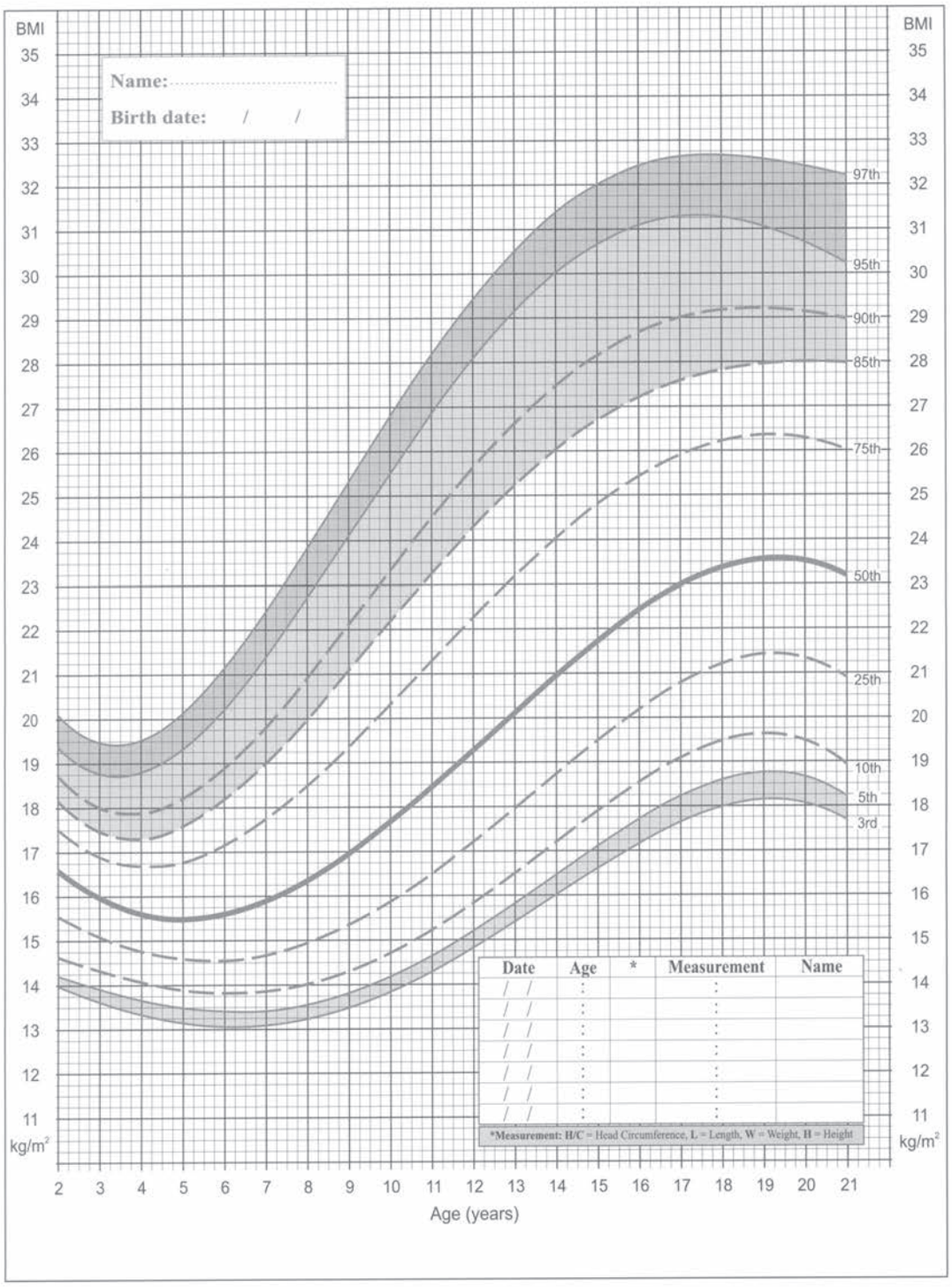
Weight-for-Age Percentiles: Egyptian Girls, 2 to 21 Years



Stature-for-Age Percentiles: Egyptian Girls, 2 to 21 Years



Body Mass Index-for-Age Percentiles: Egyptian Girls, 2 to 21 Years



كلية الطب
Faculty of Medicine

BOYS

Egyptian Growth Charts 2002
(Birth - 36 months)

جامعة القاهرة
Cairo University

Source: Cairo University. Diabetic Endocrine and Metabolic Pediatric Unit and the National Research Centre - Cairo, in collaboration with Wright State University. School of Medicine. Department of Community Health Lifespan. Health Research Center. From a sample size of 33189 boys & girls (birth - 21 years):

- 3316 boys, for head circumference from birth - 36 months.
- 3302 boys, for recumbent length from birth - 36 months.
- 3645 boys, for weight from birth - 36 months.
- 2068 boys, for weight for recumbent length from birth - 36 months..

How to measure:

Weight: from birth - 2 years, a boy should always be weighed naked on an appropriate, self-calibrating or regularly calibrated scale. An older boy should be weighed with his underwears. Record to the nearest 0.1 kg.

Head circumference: head circumference measurement should be taken from midway between the eyebrows and the hairline at the front of the head and the occipital prominence at the back. Appropriate thin plastic tape should be used.

Supine length: from birth to 2-3 years, a boy should be measured on his back by 2 people with appropriate equipment featuring a headboard and moveable footboard. Whilst one person holds the head against the headboard, with the head facing upwards in the Frankfurt plane*, a second person measures the length by bringing the footboard up to the heels. Ensure that the legs are flat at the knee joints.

Standing height: from approximately 2-3 years onwards, standing height should be measured against an appropriate vertical measure. The heels should be together with the buttocks and shoulder blades touching the vertical and the head positioned in the Frankfurt plane*. To ensure that the true height is taken, apply gentle upward pressure to the mastoid processes.
Record head circumference, length and height to the nearest 0.1 cm.
* The Frankfurt plane is an imaginary line from the center of the ear hole to the lower border of the eye socket.

How to Calculate the Target Centile Range (TCR):

From age 2 years onwards, if every boy follows his genetic growth pattern, he should be growing within his Target Centile Range **(TCR)** parallel to one of the centile lines. If not, refer to specialist. To calculate his **TCR**, apply the following steps: measure father's and mother's heights (a & b), calculate the sum (c), their mean height (d), the corrected Mid-Parental Height **(MPH)** (e) and the Target Centile Range (f) as shown. Apply arrow (e) opposite the corrected MPH, and draw a vertical line above and below, opposite the **TCR**.

Date	Age	*	Measurement	Name
14/03/03	9/12	L	72.5 cm	
14/03/03	9/12	H/C	46.0 cm	
14/03/03	9/12	W	9.3 Kg	
14/03/03	9/12	W/L	75 th	

Severity of Malnutrition

Grade of malnutrition	Weight for age*	Weight for length**
0, normal	> 90	> 90
1, mild	75 - 90	81 - 90
2, moderate	60 - 74	70 - 80
3, severe	< 60	< 70

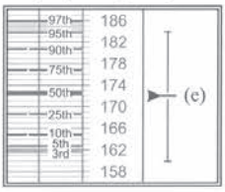
* Data from Gomez F, Galvan RR, Frank S, et al.: Mortality in second and third degree malnutrition. J trop Pediatr 2:77,1956
** Data from Waterlow JC: Classification and definition of protein-calorie malnutrition. Br Med J 3:566,1972.

Guidelines for recording , plotting and referral:

Record the measurements using the boxes included in this chart. Enter the date and the current age, specify the measurement in the box below the asterisk (i.e. H/C = Head circumference, H = Height, L = Length, W = Weight, W/L = Weight for length) and put your name. Plot each measurement on the curve with a well defined dot. Trace the growth curve with a line but leave the dots clearly visible. A normal growth curve is one that always runs roughly on, or parallel to one of the printed centile lines. If it doesn't, consider these guidelines:
Refer a boy whose height falls above the 97th or below the 3rd centile line or outside his Target Centile Range **(TCR)**. Refer him, also, if his growth curve deviates upwards or downwards, over a period of 12-18 months, by a width of one centile distance.
In short-term undernutrition, weight declines before length, so values of weight for age and weight for recumbent length centiles are low compared to length for age centile. In long-term undernutrition, stunting is eventual, so in addition to the low weight for age centile, the length for age centile starts to deviate, whereas the weight for recumbent length centile returns towards normal. When weight falls below the 3rd centile, it is of value to determine the degree of malnutrition (look to the opposite table), this by expressing the patient weight as a percentage of the mean value of his age.

(a) = Father's height
(b) = Mother's height
(c) = Sum of (a) and (b)
(d) = (c) ÷ 2
(e) = (d) + 7 cm = (MPH)
(f) = MPH ± 12 cm

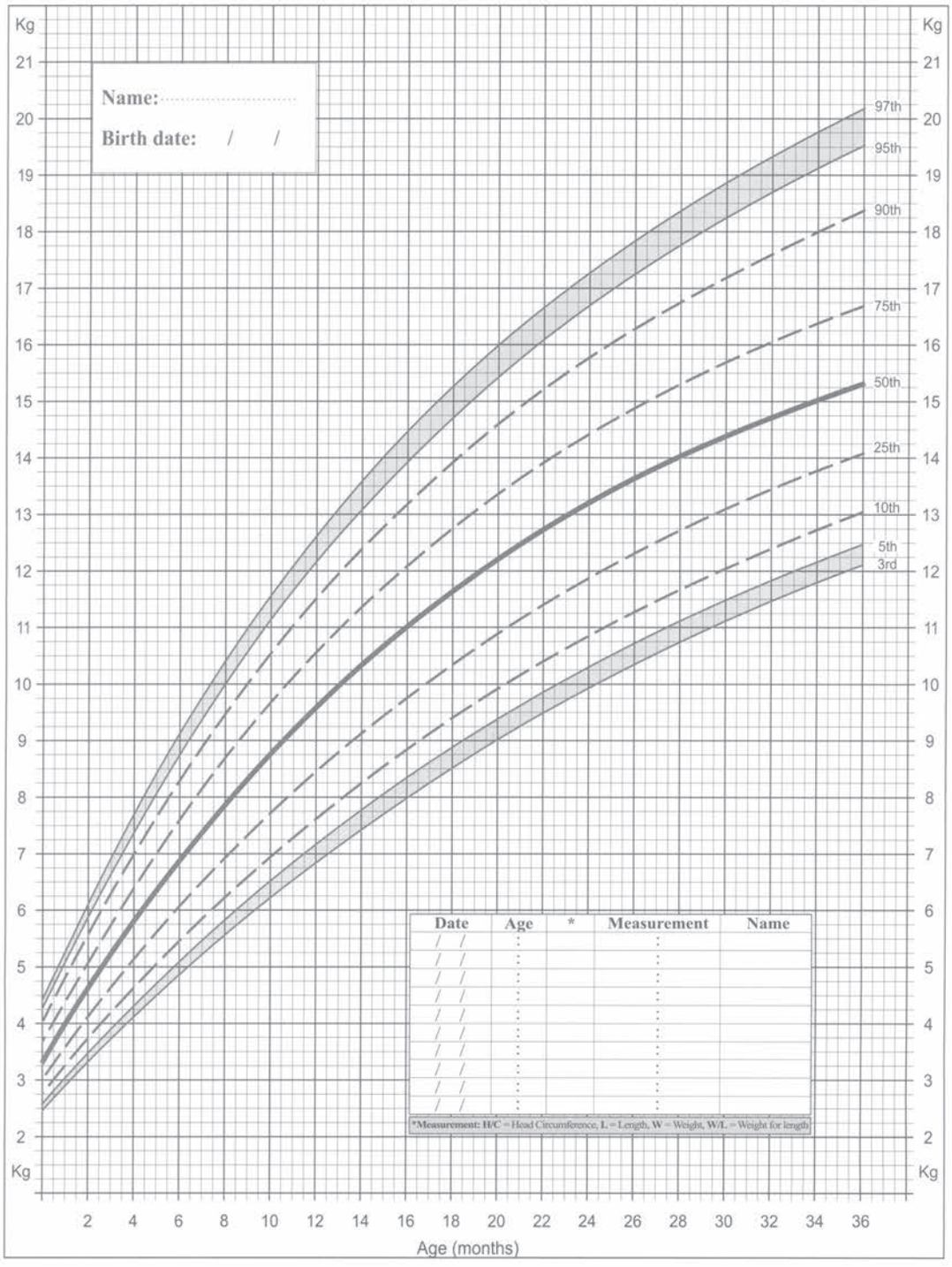
(a) = 174 cm
(b) = 156 cm
(c) = 330 cm
(d) = 165 cm
(e) = 165 + 7 = 172 cm
(f) = 172 ± 12 cm

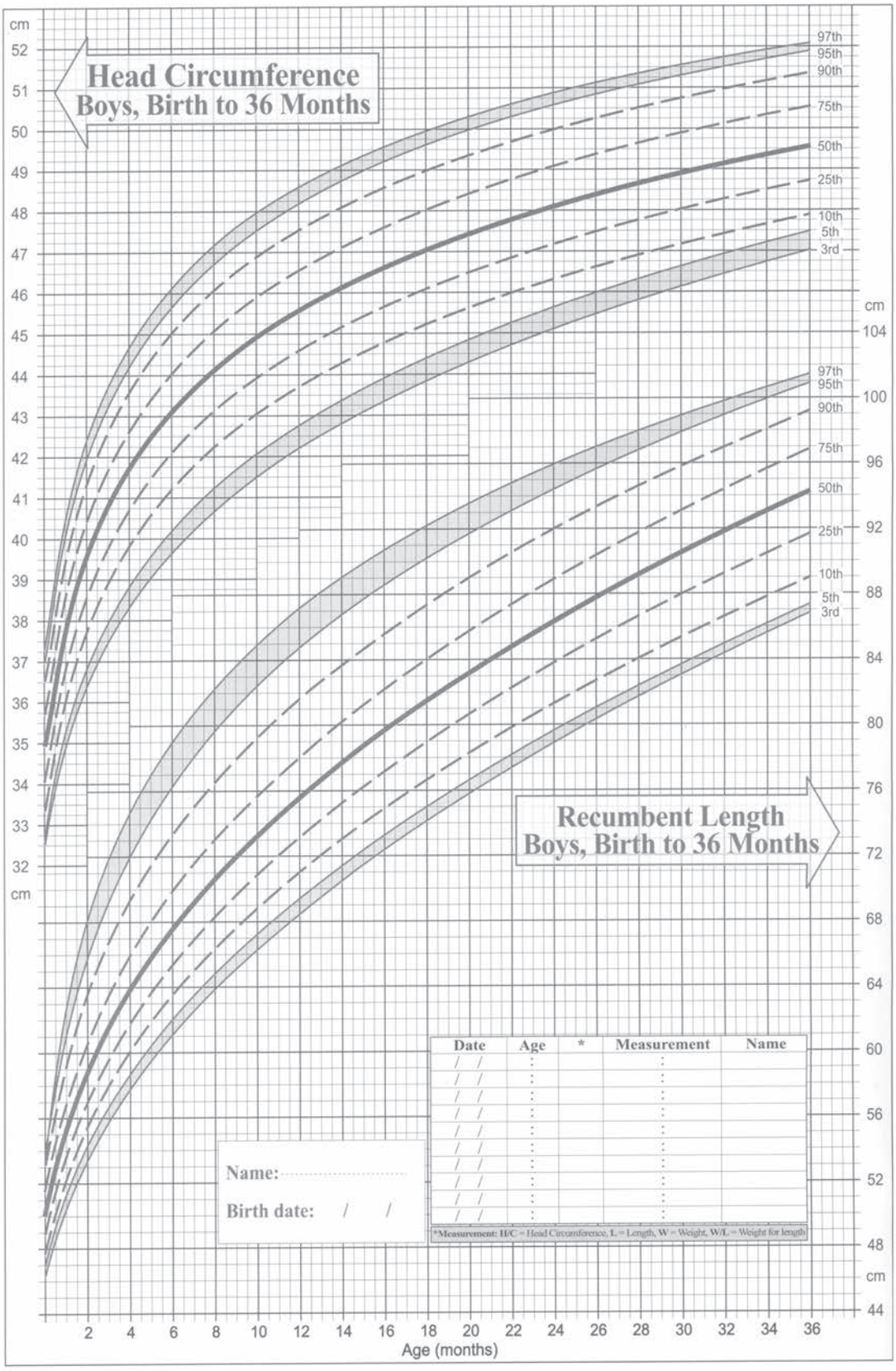


Acknowledgments:
The Egyptian Supreme Council of Universities, Foreign Relations Coordination Unit (FRCU) - Mendez England & Associates, Cairo - The Egyptian Ministry of Education - The Egyptian Participating Schools and Universities.

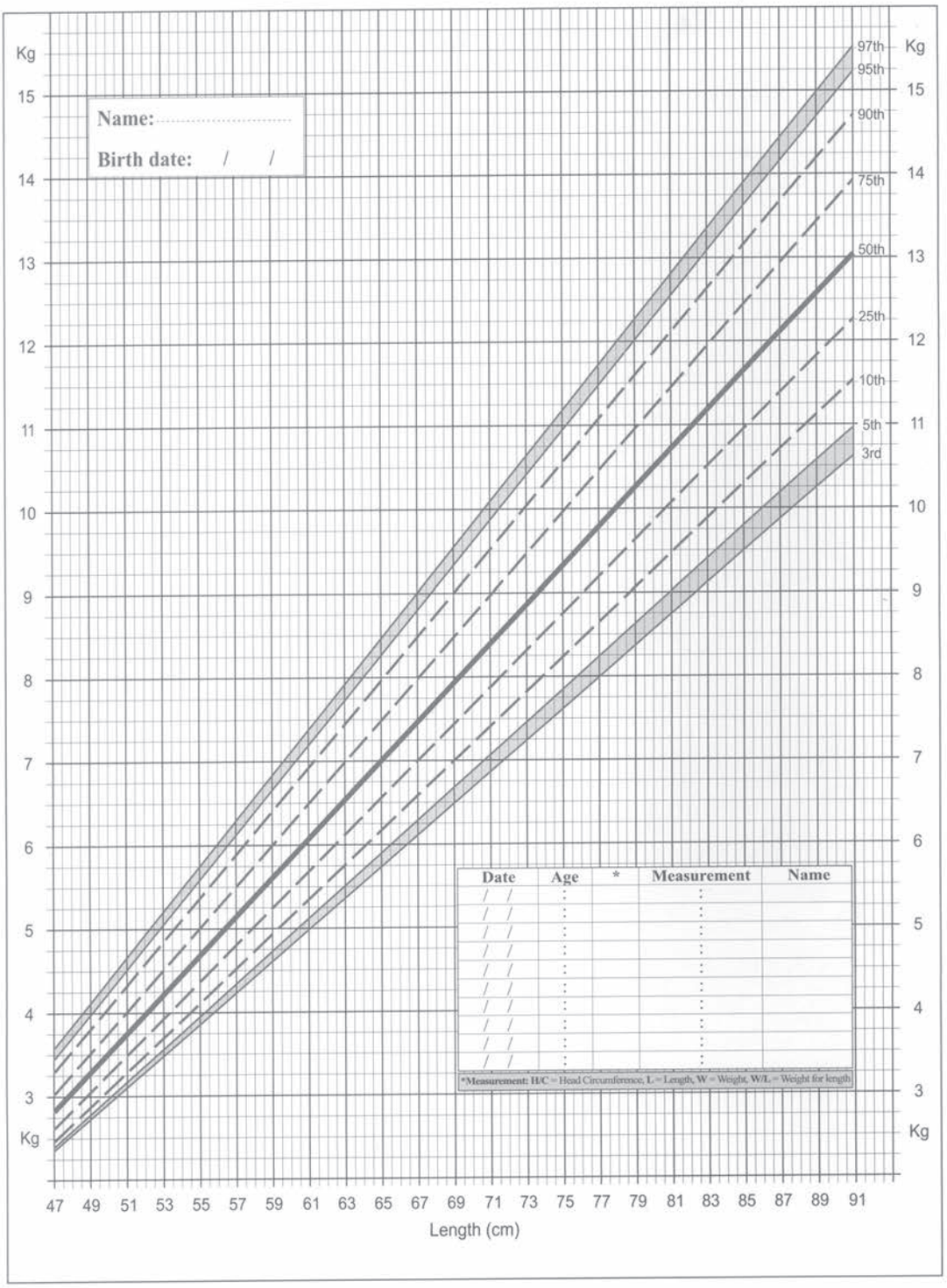
Printed and distributed by Aventis

Weight-for-Age Percentiles: Egyptian Boys, Birth to 36 Months




Head Circumference
Boys, Birth to 36 Months
Recumbent Length
Boys, Birth to 36 Months
cm
52
51
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
35
34
33
32
cm
97th
95th
90th
75th
50th
25th
10th
5th
3rd
cm
104
100
96
92
88
84
80
76
72
68
64
60
56
52
48
cm
44
Name:
Birth date: / /
Date
Age
*
Measurement
Name
*Measurement: H/C = Head Circumference, L = Length, W = Weight, W/L = Weight for length
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36
Age (months)

Weight-for-Recumbent Length Percentiles: Egyptian Boys, Birth to 36 Months



كلية الطب
Faculty of Medicine

BOYS

Egyptian Growth Charts 2002
(2 - 21 years)

جامعة القاهرة
Cairo University

Source: Cairo University. Diabetic Endocrine and Metabolic Pediatric Unit and the National Research Centre - Cairo, in collaboration with Wright State University. School of Medicine. Department of Community Health Lifespan. Health Research Center. From a total sample size of 33189 girls & boys (birth - 21 years):

- 13533 boys, for stature from 2 - 21 years
- 13703 boys, for weight from 2 - 21 years.
- 13507 boys, for BMI from 2 - 21 years.

How to measure:

Weight: from birth - 2 years, a boy should always be weighed naked on an appropriate, self-calibrating or regularly calibrated scale. An older boy should be weighed with his underwears. Record to the nearest 0.1 kg.

Head circumference: head circumference measurement should be taken from midway between the eyebrows and the hairline at the front of the head and the occipital prominence at the back. Appropriate thin plastic tape should be used.

Supine length: from birth to 2-3 years, a boy should be measured on his back by 2 people with appropriate equipment featuring a headboard and moveable footboard. Whilst one person holds the head against the headboard, with the head facing upwards in the Frankfurt plane*, a second person measures the length by bringing the footboard up to the heels. Ensure that the legs are flat at the knee joints.

Standing height: from approximately 2-3 years onwards, standing height should be measured against an appropriate vertical measure. The heels should be together with the buttocks and shoulder blades touching the vertical and the head positioned in the Frankfurt plane*. To ensure that the true height is taken, apply gentle upward pressure to the mastoid processes.

Record head circumference, length and height to the nearest 0.1 cm.

* The Frankfurt plane is an imaginary line from the center of the ear hole to the lower border of the eye socket.

Body Mass Index (BMI):

To calculate the BMI, apply the following formula:

$$\text{BMI} = \frac{\text{weight in kg}}{(\text{length / height in m})^2}$$

Date	Age	*	Measurement	Name
14/03/03	9.5	H	136	
14/03/03	9.5	W	40	
14/03/03	9.5	BMI	21.6	

How to Calculate the Target Centile Range (TCR):

From age 2 years onwards, if every boy follows his genetic growth pattern, he should be growing within his Target Centile Range **(TCR)** parallel to one of the centile lines. If not, refer to specialist. To calculate his **TCR**, apply the following steps: measure father's and mother's heights (a & b), calculate the sum (c), their mean height (d), the corrected Mid-Parental Height **(MPH)** (e) and the Target Centile Range (f) as shown. Apply arrow (e) opposite the corrected **MPH**, and draw a vertical line above and below, opposite the **TCR**.

Guidelines for recording , plotting and referral:

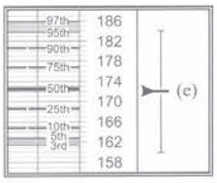
Record the measurements using the boxes included in this chart. Enter the date and the current age, specify the measurement in the box below the asterisk (i.e. H/C = Head circumference, L = Length, W = Weight, H = Height, BMI = Body mass index) and put your name. Plot each measurement on the curve with a well defined dot. Trace the growth curve with a line but leave the dots clearly visible. A normal growth curve is one that always runs roughly on, or parallel to one of the printed centile lines. If it doesn't, consider these guidelines:

Refer a boy whose height falls above the 97th or below the 3rd centile line or outside his Target Centile Range **(TCR)**. Refer him, also if, in the pre-school age, his growth curve deviates upwards, or downwards, over a period of 12-18 months, by a width of one centile distance or, in the school age, by 2/3 of a centile distance.

Refer a boy whose Body Mass Index **(BMI)** equal or above 95th centile as obese. Boys with BMI equal or above the 85th centile but less than the 95th centile, should be considered as overweight. Also, refer a boy whose BMI falls below the 3rd centile as significantly underweight.

(a) = Father's height
(b) = Mother's height
(c) = Sum of (a) and (b)
(d) = (c) ÷ 2
(e) = (d) + 7 cm = (MPH)
(f) = MPH ± 12 cm

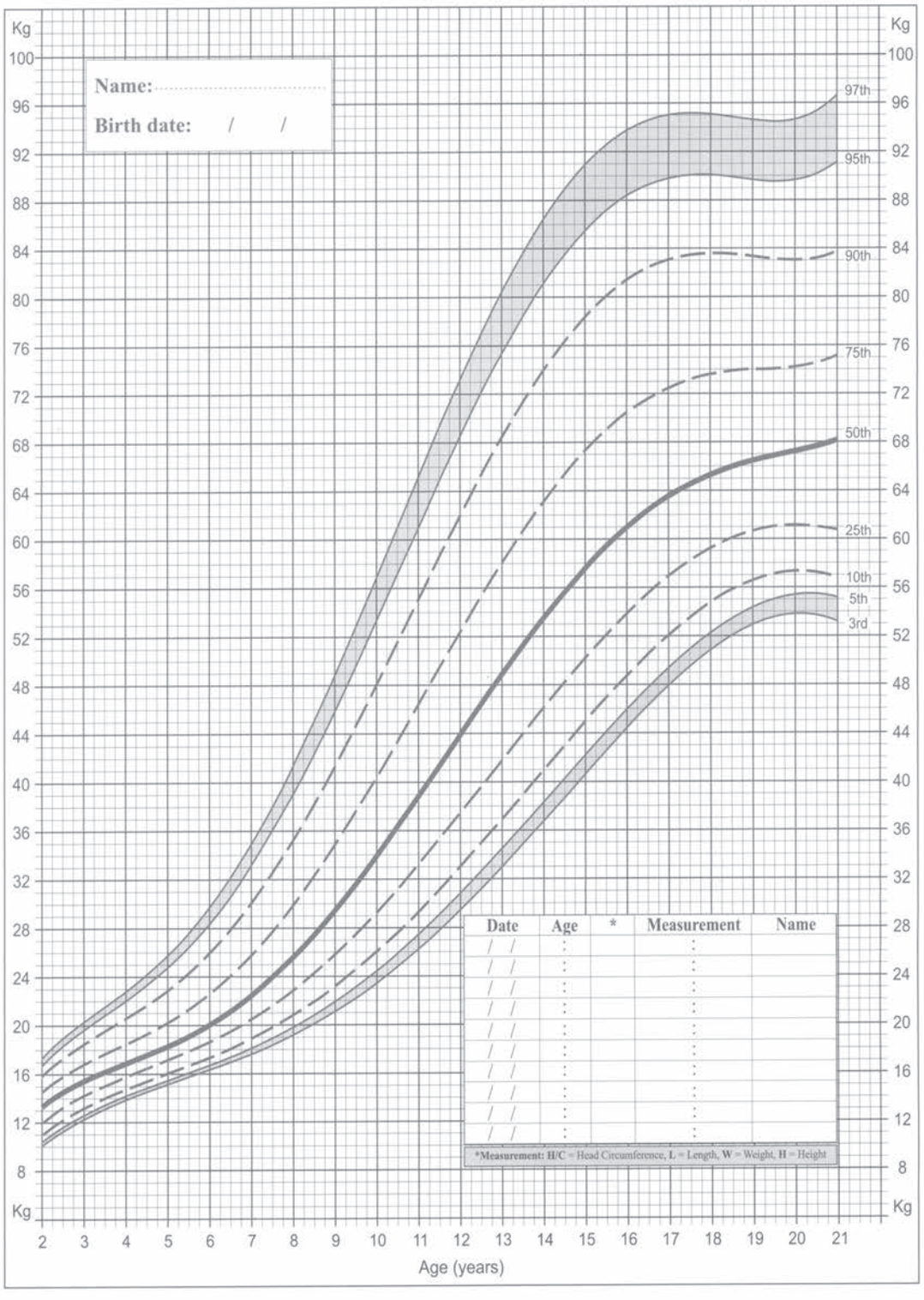
(a) = 174 cm
(b) = 156 cm
(c) = 330 cm
(d) = 165 cm
(e) = 165 + 7 = 172 cm
(f) = 172 ± 12 cm



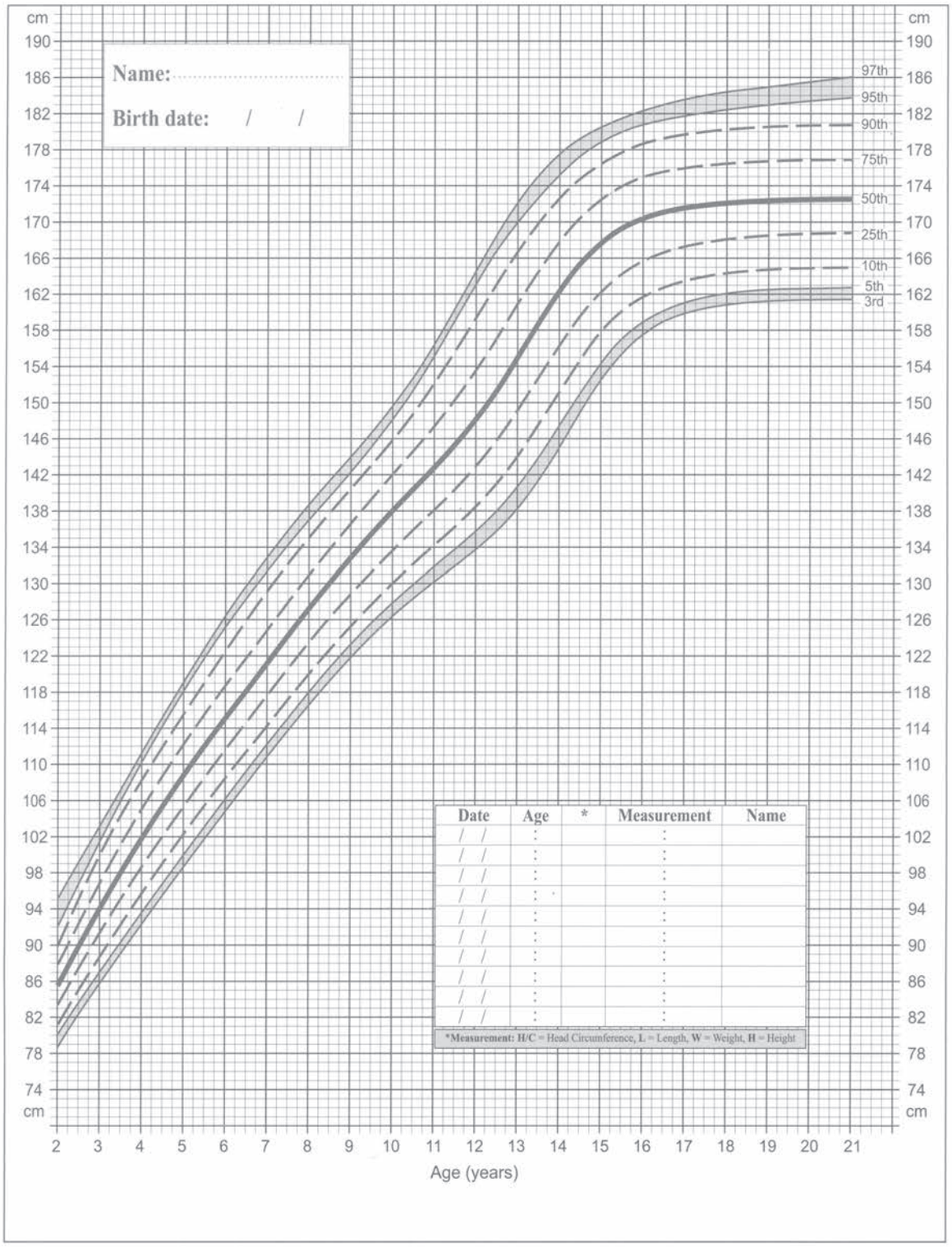
Acknowledgments:
The Egyptian Supreme Council of Universities, Foreign Relations Coordination Unit (FRCU) - Mendez England & Associates, Cairo - The Egyptian Ministry of Education - The Egyptian Participating Schools and Universities.

Printed and distributed by Aventis

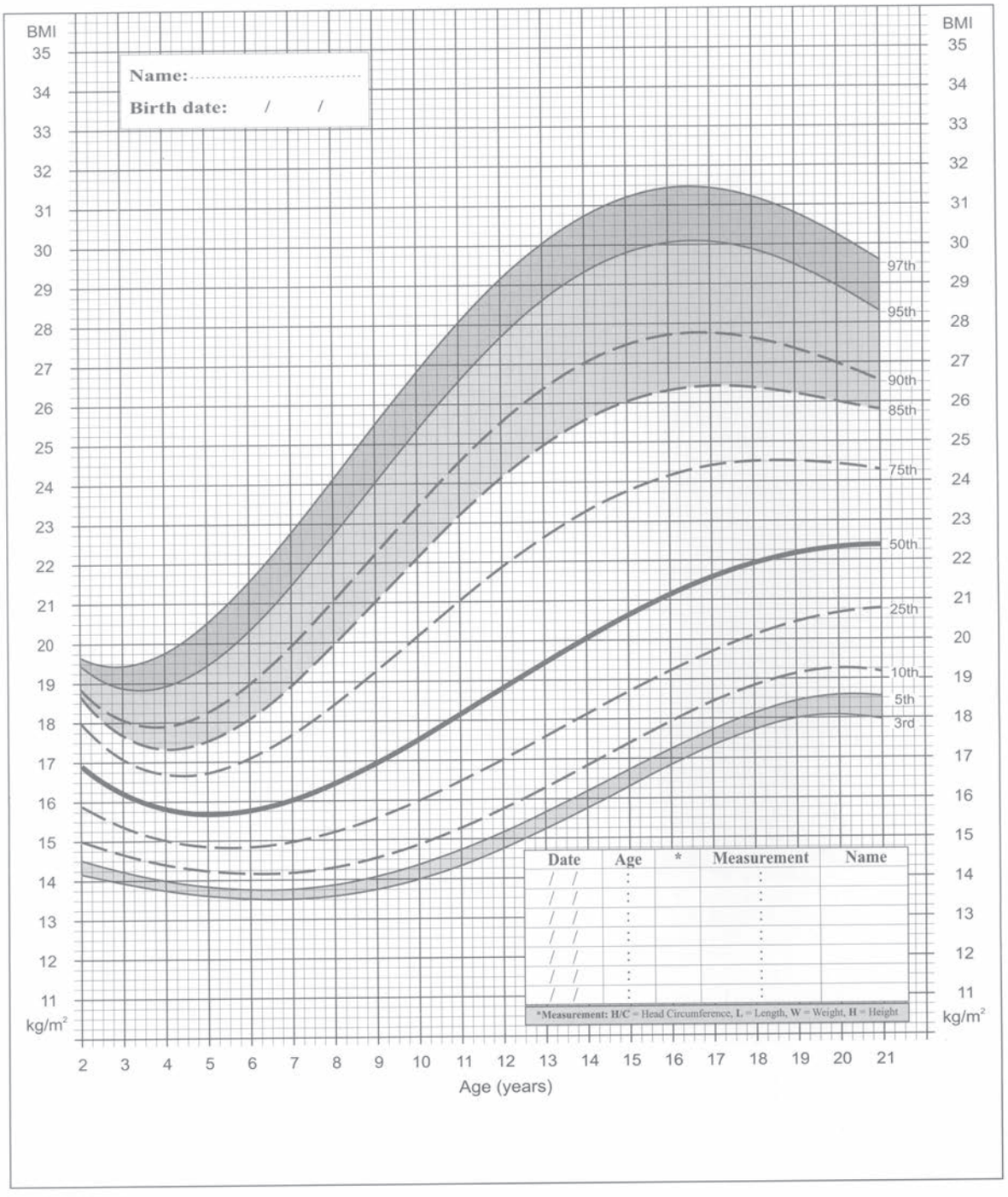
Weight-for-Age Percentiles: Egyptian Boys, 2 to 21 Years



Stature-for-Age Percentiles: Egyptian Boys, 2 to 21 Years



Body Mass Index-for-Age Percentiles: Egyptian Boys, 2 to 21 Years



INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS

Integrated Management of Childhood Illness

IMCI User Manual

This manual is prepared by the MOHP supported by WHO/CHD, UNICEF & USAID

The IMCI manual guides you in the management of a sick child from birth to 5 years of age. First it starts with the child 2 months to 5 years old then it describes how to deal with the younger infant up to 2 months.

The manual presents in fiow charts and tables how to

- Assess, classify and identify treatment
- Treat the child, and give follow-up care
- Counsel the mother

The manual explains protocols for management and referral

The topics covered for the 2m - 5 years child include:

- Danger signs, cough, diarrhea
- Sore throat, ear problems, fever, measles
- Malnutrition and anemia
- Immunization status, and Vit. A supplement
- Appropriate oral antibiotic
- Teach mother to give oral drugs at home
- Teach mother to treat local infections at home (eye infection, mouth ulcers, relieve cough safely)
- Treat a convulsing child
- Treat wheezing,
- Treat the child tp prevent low blood sugar
- Treatment of diarrhea: Plan A, Plan B, Plan C
- Give follow-up care: Pneumonia, no pneumonia wheeze, persistent diarrhea, fever, ear infection, measles with eye or mouth complications, low weight, feeding problems, anemia,.
- Counsel the mother: Food, feeding recommendations during sickness and health, feeding problems, when to return, mothers own health.

The topics covered for the < 2m infant include

- Check for possible bacterial infection
- Check for significant jaundice
- Diarrhea
- Feeding problems or low weight
- Treat young infants: appropriate oral antibiotics, first dose of intramuscular antibiotic, convulsing young infant
- Teach the mother to treat local infections at home: skin pustules or umbilical infection, mouth thrush, eye infection
- Teach correct positioning and attachment for breast feeding
- Teach the mother to express breast milk if indicated
- Give follow-up care for the sick young infant

INTEGRATED MANAGEMENT OF CHILD HEALTH (IMCI)

SICK CHILD
AGE 2 MONTHS UP TO 5 YEARS

ASSESS AND CLASSIFY THE SICK CHILD

TREAT THE CHILD

TREAT THE CHILD, continued

COUNSEL THE MOTHER

Egyptian MOHP WHO unicef USAID

SICK YOUNG INFANT
AGE UP TO 2 MONTHS

ASSESS, CLASSIFY AND TREAT THE SICK YOUNG INFANT

ASSESS AND CLASSIFY THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

ASSESS

ASK THE MOTHER WHAT THE CHILD'S PROBLEMS ARE

- Determine if this is an initial or follow-up visit for this problem.
  - if follow-up visit, use the follow-up instructions on *TREAT THE CHILD* chart.
  - if initial visit, assess the child as follows:

CHECK FOR GENERAL DANGER SIGNS

ASK:

- Is the child able to drink or breastfeed?
- Does the child vomit everything?
- Has the child had convulsions in the present illness?

LOOK:

- See if the child is lethargic or unconscious.
- See if the child is convulsing now.

THEN ASK ABOUT MAIN SYMPTOMS:

Does the child have cough or difficult breathing?

IF YES,ASK:

- For how long?

LOOK AND LISTEN:

- Count the breaths in one minute.
- Look for chest indrawing.
- Look and listen for stridor.
- Look and listen for wheeze

} CHILD MUST BE CALM

Classify COUGH or DIFFICULT BREATHING

If the child is:	Fast breathing is:
2 months up to 12 months	**50** breaths per minute or more
12 months up to 5 years	**40** breaths per minute or more

CLASSIFY

SIGNS	CLASSIFY AS	TREATMENT (Urgent pre-referral treatments are in bold print.)
• Any general danger sign.	**VERY SEVERE DISEASE**	***Treat convulsions if present now.*** ***Complete assessment immediately.*** ***Give first dose of an appropriate antibiotic.*** ***Treat the child to prevent low blood sugar.*** ***Refer URGENTLY to hospital*.***
• Any general danger sign OR • Stridor in calm child OR • Chest indrawing (If chest indrawing and wheeze go directly to"Treat Wheezing" up to 3 times if needed then reassess after	**SEVERE PNEUMONIA OR VERY SEVERE DISEASE**	***Give first dose of an appropriate antibiotic.*** ***Treat wheezing if present.*** ***Treat the child to prevent low blood sugar.*** ***Refer URGENTLY to hospital.****
• Fast breathing (If wheeze, go directly to "Treat Wheezing" up to 3 times if needed then reassess after treatment).	**PNEUMONIA**	***Give an appropriate antibiotic for 5 days.*** ***Treat wheezing if present.*** If coughing more than 14 days, refer for assessment. Soothe the throat and relieve the cough with a safe remedy. Advise mother when to return immediately. Follow up in 2 days.
• No signs of pneumonia or very severe disease. (If wheeze, go directly to "Treat Wheezing").	**COUGH OR COLD**	***Treat wheezing if present.*** If coughing more than 14 days, refer for assessment. Soothe the throat and relieve the cough with a safe remedy. Advise mother when to return immediately. Follow up in 2 days if wheezing. Follow-up in 5 days if not improving

IDENTIFY TREATMENT

Does the child have diarrhoea?

IF YES, ASK:	***LOOK AND FEEL:***
• For how long? • Is there blood in the stool?	• Look at the child's general condition. Is the child: Lethargic or unconscious? Restless and/or irritable? • Look for sunken eyes. • Offer the child fluid. Is the child: Not able to drink or drinking poorly? Drinking eagerly, thirsty? • Pinch the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)? Slowly?

Classify DIARRHOEA

for DEHYDRATION		
Two of the following signs: • Lethargic or unconscious. • Sunken eyes. • Not able to drink or drinking poorly. • Skin pinch goes back very slowly.	**SEVERE DEHYDRATION**	▯ If child has no other severe classification: - Give fluid for severe dehydration (Plan C). OR ***If child also has another severe classification:***** ***- Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way.*** ***Advise the mother to continue breastfeeding.***
Two of the following signs: • Restless, irritable. • Sunken eyes. • Drinks eagerly, thirsty. • Skin pinch goes back slowly.	**SOME DEHYDRATION**	▯ Give fluid and food for some dehydration (Plan B). ▯ ***If child also has a severe classification:*** ***- Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way.*** ***Advise the mother to continue breastfeeding.***. ➢ Give Zinc Syrup for 14 days. ▯ Advise mother when to return immediately. ▯ Follow-up in 5 days if not improving.
Not enough signs to classify as some or severe dehydration.	**NO DEHYDRATION**	▯ Give fluid and food to treat diarrhoea at home (Plan A). ➢ Give Zinc Syrup for 14 days. ▯ Advise mother when to return immediately. ▯ Follow-up in 5 days if not improving.
and if diarrhoea 14 days or more		
• Dehydration present.	**SEVERE PERSISTENT DIARRHOEA**	▯ Treat dehydration before referral unless the child has another severe classification. ▯ Urgent Referal to hospital.
• No dehydration.	**PERSISTENT DIARRHOEA**	▯ Advise the mother on feeding a child ▯ Give multivitamin, mineral supplement including zinc for 14 days ▯ Advise mother when to return immediately. ▯ Follow-up in 5 days.
and if blood in stool		
• Blood in the stool.	**DYSENTERY**	▯ ***Treat for 5 days with an oral antibiotic recommended for Shigella.*** ▯ Advise mother when to return immediately. ▯ Follow-up in 2 days.

Check for throat problem

ASK:
- Does the child have fever? (by history or feels hot or temperature 37.5 C or more)
- Does the child have sore throat?

LOOK AND FEEL:
- Feel for enlarged tender lymph node (s) on the front of the neck.
- Look for red (congested) throat
- Look for white or yellow exudate on the throat and tonsils

Classify THROAT PROBLEM

• fever AND **Two of the following :** • Red (congested) throat • White or yellow exudate on the throat or tonsils. • Enlarged tender lymph node(s) on the front of the	**STREPTOCOCCAL SORE THROAT**	**Give appropriate antibiotic..** Soothe the throat with a safe remedy. Give paracetamol for pain. Advise mother when to return immediately. Follow up in 5 days if not improving.
• Sore throat OR • Not enough signs to calssify as streptococcal sore throat	**NON STREPTOCOCCAL SORE THROAT**	Soothe the throat with a safe remedy. Give paracetamol for pain. Advise mother when to return immediately. Follow up in 5 days if not improving.
• No throat signs or symptoms	**NO THROAT PROBLEM**	Continue assessment of the child.

Does the child have an ear problem?

IF YES, ASK:
- Is there agonizing ear pain?
- Is there ear discharge? If yes, for how long?

LOOK AND FEEL:
- Look for pus draining from the ear.
- Feel for tender swelling behind the ear.

Classify EAR PROBLEM

• Tender swelling behind the ear.	**MASTOIDITIS**	***Give first dose of an appropriate antibiotic.*** ***Give first dose of paracetamol for pain.*** ***Treat the child to prevent low blood sugar.*** ***Refer URGENTLY to hospital.***
• Agonizing ear pain OR • Pus is seen draining from the ear **and** discharge is reported for less than 14 days.	**ACUTE EAR INFECTION**	***Give an antibiotic for 10 days.*** Give paracetamol for pain. Dry the ear by wicking. Advise mother when to return immediately. Follow-up in 5 days.
• Pus is seen draining from the ear **and** discharge is reported for 14 days or more.	**CHRONIC EAR INFECTION**	Dry the ear by wicking. Refer to ENT specialist.
• No ear pain **AND** • No pus seen draining from the ear.	**NO EAR INFECTION**	Advise mother to go to ENT specialist for assessment.

Does the child have fever?

(by history or feels hot or temperature 37.5°C * or above)

IF YES, ASK:	*LOOK AND FEEL:*
• For how long?	• Look or feel for stiff neck.
• If more than 5 days, has fever been present every day?	
• Has the child had measles within the last 3 months?	Look for signs of MEASLES • Generalized rash **and** • One of these: cough, runny nose, or red eyes.
If the child has measles now or within the last 3 months:	• Look for mouth ulcers. Are they deep and extensive? • Look for pus draining from the eye. • Look for clouding of the cornea.

Classify FEVER

if MEASLES now or within last 3 months, Classify

• Any general danger sign OR • Stiff neck	**VERY SEVERE FEBRILE DISEASE**	***Give first dose of an appropriate antibiotic.*** ***Treat the child to prevent low blood sugar.*** ***Give one dose of paracetamol in clinic for fever (38°C or above).*** ***Refer URGENTLY to hospital.***
• An apparent bacterial cause of fever present e.g. - Pneumonia - Dysentery - Streptococcal sore throat - Acute ear infection - Other apparent causes**	**FEVER- POSSIBLE BACTERIAL INFECTION**	***Give paracetamol for fever (38°C or above).*** ***Treat apparent causes of fever.*** Advise mother when to return immediately. If fever is present every day for more than 5 days, refer for assessment. Follow-up in 2 days if fever persists.
• No apparent bacterial cause of fever	**FEVER- BACTERIAL INFECTION UNLIKELY**	***Give paracetamol for fever (38°C or above).*** Advise mother when to return immediately. If fever is present every day for more than 5 days, refer for assessment. Follow-up in 2 days if fever persists.
• Any general danger sign OR • Clouding of cornea OR • Deep or extensive mouth ulcers OR • Measles now AND pneumonia	**SEVERE COMPLICATED MEASLES*** **	***Give first dose of an appropriate antibiotic.*** ***Treat the child to prevent low blood sugar.*** ***Give one dose of paracetamol in clinic for fever (38°C or above).*** ***If clouding of the cornea or pus draining from the eye, apply tetracycline eye ointment.*** ***Give Vitamin A. (if was not given in the last 4 months)*** ***Refer URGENTLY to hospital.***
• Pus draining from the eye OR • Mouth ulcers.	**MEASLES WITH EYE OR MOUTH COMPLICATIONS* ** **	***Give paracetamol for fever (38°C or above).*** ***If pus draining from the eye, treat eye infection with tetracycline eye ointment.*** ***Give Vitamin A. (if was not given in the last 4 months)*** If mouth ulcers, treat with gentian violet. ➢ Advise mother when to return immediately. Follow-up in 2 days.
• Measles now or within the last 3 months AND • None of the above signs.	**MEASLES**	***Give paracetamol for fever (38°C or above).*** ***Give Vitamin A. (if was not given in the last 4 months)*** Advise the mother when to return immediately. Follow- up in 2 days if not improving.

* *These temperatures are based on axillary temperature.*

** *Other apparent causes of fever include cellulitis, abscess, boil. Or urinary tract infections*

*** *Other important complications of measles - stridor, diarrhoea, ear infection, and malnutrition - are classified in other tables.*

THEN CHECK FOR MALNUTRITION AND ANAEMIA

LOOK AND FEEL:

- Look for visible severe wasting.
- Look for edema of both feet
- Determine weight for height (Lor/H),
- Determine W/A ,length/ height for age (**L/HFA**)
- Determine body mass index **(BMI)**
- Measure mid upper arm circumference (MUAC), if no weight or height measurement scale.

LOOK :

- Look for palmar pallor and mucous membrane pallor Is it:
  - Severe palmar pallor and / or mucous membrane pallor?
  - Some palmar pallor and / or mucous membrane pallor?

Classify ACUTE MALNUTRITION

• Visible severe wasting OR • Oedema of both feet. OR • W/A or W/H below –3 Z score OR • MUAC below 115 mm	**SEVERE ACUTE MALNUTRITION**	• **Give Vitamin A. (if was not given in the last 4 months)** • **Treat the child to prevent low blood sugar..** • **Refer URGENTLY to hospital.**
• W/A or W/H between –3 and – 2 Z score OR • MUAC from 115 - 125 mm	**MODERATE ACUTE MALNUTRITION**	• Assess the child`s feeding and counsel the mother • Advise mother when to return immediately. • Give multivitamin syrup . • Give Vitamin D 400 IU daily dose since birth up to 30 months • Follow-up in 30 days
W/A and W/H –2 Z score or above OR	**NO ACUTE MALNUTRITION**	• Assess the child's feeding and counsel the mother • Give Vitamin D 400 IU daily dose since birth up to 30 months

Classify STUNTING

L/H/ A below -3 Z score	**SEVERE STUNtING**	**Refer for further assessment**
L/H/A between –3or –2 Z score	STUNTING	• Assess the child feeding and counsel the mother • Counsel the mother on sanitation and hygiene • Give zinc for 30 days. • Give multivitamin for 30 days. • Follow up in 5 days for feeding problems
L/H/A -2 Z score or more	NO STUNTING	• Assess the child's feeding and counsel the mother

Classify OBESITY

BMI above 3 Z score	**OBESITY**	• Assess the child feeding and counsel the mother • Assess the child's life style and counsel the mother • Refer for further assessment
BMI between 2 and 3 **Z score**	**OVERWEIGHT**	• Assess the child feeding and counsel the mother • Assess the child's life style and counsel the mother • Follow up in 30 days
BMI below 2 Z score	**NO OBESITY**	• Assess the child feeding and counsel the mother

Classify ANAEMIA

• **Severe palmar and / or** mucous membrane pallor	**SEVERE ANAEMIA ANAEMIA**	• **Treat the child to prevent low blood sugar** • **Refer URGENTLY to hospital**
• **Some palmar and / or mucous membrane pallor**	**ANAEMIA**	• Assess the child`s feeding and counsel the mother . • Give Iron. • if family history of chronic hemolytic anemia don't give iron & refer for assessment • Advise mother when to return immediately. • Follow-up in 14 days.
• **No palmar or mucous membrane pallor**	**NO ANAEMIA**	• if child is aged 6 - 30 months, give one dose of Iron weekly. • if family history of chronic hemolytic anemia don't give iron & refer for assessment

THEN CHECK THE CHILD'S IMMUNIZATION AND VITAMIN A SUPPLEMENTATION STATUS

IMMUNIZATION SCHEDULE:

AGE	VACCINE		
At birth	OPV (zero dose)	BCG	
2 months	OPV-1	PENTA-1	
4 months	OPV-2	PENTA-2	
6 months	OPV-3	PENTA-3	
9 months	OPV-4		
12 months	OPV-5		MMR-1
18 months	OPV– Booster	DPT Booster	MMR-2

VITAMIN A SUPPLEMENTATION SCHEDULE:

9 months 1st dose of vitamin A (100,000 IU)
18 months 2nd dose of vitamin A (200,000 IU)

ASSESS OTHER PROBLEMS : Assess other complaints and any other problem you identify during examination

TREAT THE CHILD

CARRY OUT THE TREATMENT STEPS IDENTIFIED ON THE *ASSESS AND CLASSIFY* CHART

TEACH THE MOTHER TO GIVE ORAL DRUGS AT HOME

Follow the instructions below for every oral drug to be given at home.
Also follow the instructions listed with each drug's dosage table.

-Determine the appropriate drugs and dosage for the child's age or weight.

- Tell the mother the reason for giving the drug to the child.

- Demonstrate how to measure a dose.

- Watch the mother practise measuring a dose by herself.

- Ask the mother to give the first dose to her child.

- Explain carefully how to give the drug, then label the package the drug.

- Explain that all the oral drug syrups must be used to finish the course of treatment, even if the child gets better.

= Check the mother's understanding before she leaves the clinic.

ANTIBIOTICS

TREAT

Give an Appropriate Oral Antibiotic

FOR PNEUMONIA (give for 5 days), OR ACUTE EAR INFECTION (give for 10 days):

FIRST-LINE ANTIBIOTIC: AMOXYCILLIN
SECOND-LINE ANTIBIOTIC: COTRIMOXAZOLE

AGE or WEIGHT	**AMOXYCILLIN (dose of 80 mg/kg/day) Give two times daily for 5 or 10 days**	COTRIMOXAZOLE* (trimethoprim + sulphamethoxazole) ♳ Give two times daily for 5 or 10 days
	SYRUP 250 mg per 5 ml	**SYRUP** 40 mg trimethoprim +200 mg sulphamethoxazole per 5 ml
2 months up to 4 months (4 - <6 kg)	4 ml per dose	2.5 ml per dose
4 months up to 12 months (6 - <10 kg)	7 ml per dose	5 mlper dose
12 months up to 3 years 10 - 14 kg)	10 ml per dose	5 mlper dose
3 years up to 5 years (14-19 kg)	13 ml per dose	7.5 ml per dose

**don't give cotrimoxazole for a child with past history or family history of G-6PD deficiency.*

FOR DYSENTERY:

Give antibiotic recommended for Shigella for 5 days.
FIRST-LINE ANTIBIOTIC FOR SHIGELLA: COTRIMOXAZOLE *
SECOND-LINE ANTIBIOTIC FOR SHIGELLA: CEFOTAXIME *

AGE or WEIGHT	**COTRIMOXAZOLE SYRUP*** (trimethoprim + sulphamethoxazole) ♳ Give two times daily for 5 days	**CEFOTAXIME (1000g)** Dose: 25 mg/Kg/dose twice daily	**CEFOTAXIME (500 mg)** Dose: 25 mg/Kg/dose twice daily
	SYRUP: 40 mg trimethoprim + 200 mg sulphamethoxazole per 5 ml	Add 5ml sterile water to vial containing 1000 mg = 5.6 ml at 180 mg/ml	Add 3ml sterile water to vial containing 500 mg = ab. 170 mg
2 months up to 4 months (4 - <6 kg)	2.5 ml	0.7 ml	0.7 ml
4 months up to 12 months (6 - <10 kg)	5.0 ml	1 ml	1 ml
12 months up to 3 years (10 - <14 kg)	5 ml	1.7 ml	1.7 ml
3 years—5 years (14 -19 Kg	7.5 ml	2.4 ml	2.4 ml

*Don't give cotrimoxazole for a child with past history or family history of glucose -6-phosphate dehydrogenase deficiency

TEACH THE MOTHER TO GIVE ORAL DRUGS AT HOME

Follow the instructions below for every oral drug to be given at home.
Also follow the instructions listed with each drug's dosage table.

Give Paracetamol for Fever (≥ 38°C) or sore throat or Ear Pain

- Give paracetamol every 6 hours until fever or pain is gone.

AGE or WEIGHT	PARACETAMOL SYRUP (120 mg / 5 ml)
2 months up to 4 months (4 - <6 kg)	2.5 ml
4 months up to 12 months (6 - <10 kg)	5 ml
12 months up to 3 years (10 - <14 kg)	7.5 ml
3 years up to 5 years (14 - 19 kg)	10 ml

Give Iron

- For treatment of anaemia: give one dose daily for 14 days, then reassess.
- For Iron supplementation: give one dose per week.

AGE or WEIGHT	IRON SYRUP Iron syrup 30 mg/ 5 ml (6 mg elemental iron per ml)
2 months up to 4 months (4 - <6 kg)	2.5 ml
4 months up to 12 months (6 - <10 kg)	5 ml
12 months up to 3 years (10 - <14 kg)	7.5 ml
3 years up to 5 years (14 - 19 kg)	10 ml

Give Vitamin A

- Give single dose of vitamin A in the clinic.

AGE	VITAMIN A CAPSULES		
	200 000 IU	100 000 IU	50 000 IU
Up to 6 months		1/2 capsule	1 capsule
6 months up to 12 months	1/2 capsule	1 capsule	2 capsules
12 months up to 5 years	1 capsule	2 capsules	4 capsules

Give Multivitamin / Mineral Supplement

- For persistent diarrhoea, give one dose daily 5 ml of multivitamin mineral mixture for 2 weeks

each 5 ml includes:

Vitamin A	8000 IU (800 micrograms)
Folate:	100 micrograms
Magnesium:	150 mg
Iron:	20 mg

Give Oral Salbutamol

- Give Salbutamol syrup three times daily for 5 days.

AGE or WEIGHT	SALBUTAMOL SYRUP (Salbutamol syrup = 2 mg / 5 ml)
2 months up to 4 months (4 - <6 kg)	1.0 ml
4 months up to 12 months (6 - <10 kg)	2.0 ml
12 months up to 3 years (10 - <14 kg)	2.5 ml
3 years up to 5 years (14 - 19 kg)	5.0 ml

Give Zinc Syrup

For some or no dahydration and stunting: give one dose daily for 2 weeks.

AGE	ZINC SYRUP
2 months up to 6 months	10 mg
6 months up to 5 years	20 mg

TEACH THE MOTHER TO TREAT LOCAL INFECTIONS AT HOME

- **Explain to the mother what the treatment is and why it should be given.**
- **Describe the treatment steps listed in the appropriate box.**
- **Watch the mother as she does the first treatment in the clinic (except remedy for cough or sore throat).**
- **Tell her how often to do the treatment at home.**
- **If needed for treatment at home, give mother the tube of tetracycline ointment or a small bottle of gentian violet.**
- **Check the mother's understanding before she leaves the clinic.**

Treat Eye Infection with Tetracycline Eye Ointment

- Clean both eyes 3 times daily.
  - Wash hands.
  - Ask child to close the eye.
  - Use clean cloth and water to gently wipe away pus.
- Then apply tetracycline eye ointment in both eyes 3 times daily.
  - Ask the child to look up.
  - Squirt a small amount of ointment on the inside of the lower lid.
  - Wash hands again.
- Treat until redness is gone.
- Do not use other eye ointments or drops, or put anything else in the eye.

Dry the Ear by Wicking

- Dry the ear at least 3 times daily.
  - Roll clean absorbent cloth or soft, strong tissue paper into a wick.
  - Place the wick in the child's ear.
  - Remove the wick when wet.
  - Replace the wick with a clean one and repeat these steps until the ear is dry.

Treat Mouth Ulcers with Gentian Violet

- Treat the mouth ulcers twice daily.
  - Wash hands.
  - Wash the child's mouth with clean soft cloth wrapped around the finger and wet with salt water.
  - Paint the mouth with half-strength gentian violet (0.25%) .
  - Wash hands again.

Treat Thrush with Nystatin

Treat thrush four times daily for 7 days :

- Wash hands
- Wet a clean soft cloth with salt water and used it to wash the child mouth.
- Instill nystatin 1ml four times a day
- Avoid feeding for 20 minutes after medication
- If breastfed check mother's breasts for thrush , if present treat with nystatin.
- Advise mother to wash breasts after feeds. If bottle fed advise change to cup and spoon
- Give paracetamol if needed for pain

Soothe the Throat, Relieve the Cough with a Safe Remedy

- Safe remedies to recommend:
- - Breastmilk for exclusively breastfed infant.
  - - Home made remedies e.g. tea with lemon and honey, anise, tileo, guava leaves decoctions, chicken soup.
- Harmful remedies to discourage:
- - Cough syrups containing:

GIVE THESE TREATMENTS IN CLINIC ONLY

- Explain to the mother why the drug is given.
- Determine the dose appropriate for the child's weight (or age).
- Use a sterile disposable syringe. Measure the dose accurately.
- Give the drug as an intramuscular injection.

Give An Intramuscular Antibiotic

FOR CHILDREN BEING REFERRED URGENTLY:
- Give first dose of intramuscular Cefotaxime and refer child urgently to hospital.

IF REFERRAL IS NOT POSSIBLE:
- Repeat Cefotaxime injection every 12 hours for 5 days.
- Then change to an appropriate oral antibiotic to complete 10 days of treatment.

AGE or WEIGHT	**Cefotaxime** Dose: 50 mg per kg Add 5.0 ml sterile water to vial containing 1000 mg = 5.6 ml at 180 mg/ml
2 months up to 4 months (4 - < 6 kg)	1.5 ml = 270 mg
4 months up to 9 months (6 - < 8 kg)	2.0 ml = 360 mg
9 months up to 12 months (8 - < 10 kg)	3.0 ml = 540 mg
12 months up to 3 years (10 - < 14 kg)	4.0 ml = 720 mg
3 years up to 5 years (14 - 19 kg)	5.0 ml = 900 mg

Treat a Convulsing Child With Sodium Valproate

Manage the Airway
- Turn the child on his or her side to avoid aspiration
- Do not insert anything in the mouth.
- If the lips and tongue are blue, open the mouth and make sure the airway is clear.
- If necessary, remove secretions from the throat through a catheter inserted through the nose.

Give Sodium Valproate Rectally
- Dilute sodium valproate solution (200 mg/ml) 1:7 with tap water.
- Draw up the dose of sodium valproate into a small syringe. Then remove the needle.
- Attach a piece of nasogastric tubing to the syringe if possible.
- Insert 4 to 5 cm of the tube or the tip of the syringe into the rectum and inject the sodium valproate solution.
- Hold buttocks together for a few minutes.

AGE or WEIGHT	SODIUM VALPROATE GIVEN RECTALLY 25 mg/ml Solution
Birth up to 4 months	4 ml
4 months up to 12 months	6 ml
12 months up to 3 years	10 ml
3 years up to 5 years	13 ml

IF High Fever, Lower the Fever
- Sponge the child with room temperature water

Treat the child to prevent low blood sugar

Treat Wheezing

- Children with wheezing and GENERAL DANGER SIGN OR STRIDOR → Give one dose of rapid acting bronchodilator and refer immediately
- Children with wheezing and NO GENERAL DANGER SIGN and AND NO STRIDOR but having fast breathing and/or chest indrawing → Give rapid acting bronchodilator up to 3 times if needed and reassess the child 30 minutes later each

IF:

- CHEST INDRAWING PERSISTS → Treat for SEVERE PNEUMONIA (Refer)
- FAST BREATHING ALONE → Treat for PNEUMONIA
  - Give further dose of rapid acting bronchodilator
  - Give oral salbutamol for 5 days
- NO FAST BREATHING → Treat for NO PNEUMONIA COUGH OR COLD and give oral salbutamol for 5 days.

CHILDREN WITH WHEEZING AND COUGH or cold → Give rapid acting bronchodilator
Give oral salbutamol for 5 days

RAPID ACTING BRONCHODILATOR	
Nebulized Salbutamol 5 mg/ml	0.5ml Salbutamol plus 2.0ml normal saline
Metered Dose Inhaler (MDI) with spacer device (100 mcg/dose)	2-3 puffs

ORAL SALBUTAMOL Three times daily for 5 days	
AGE or WEIGHT	2 mg / 5 ml syrup
2 months up to 4 months (4 - <6 kg)	1.0 ml
4 months up to 12 months (6 - <10 kg)	2.0 ml
12 months up to 3 years (10 - <14 kg)	2.5 ml
3 years up to 5 years (14 - 19kg)	5 ml

Treat the Child to Prevent Low Blood Sugar

If the child is able to breastfeed:

Ask the mother to breastfeed the child.

If the child is not able to breastfeed but is able to swallow:

Give expressed breastmilk or
a breastmilk substitute.
If neither of these is available, give sugar water.
Give 30-50 ml of milk or sugar water before departure.

To make sugar water: Dissolve 4 level teaspoons of sugar (20 grams) in a 200-ml cup of clean water.

If the child is not able to swallow:

Give 50 ml of milk or sugar water by nasogastric tube.
if nasogastric tube is not available or you are not trained to use nasogastric tube give 1 teaspoon of sugar moistened with one or two drops of water sublingually and repeat the dose every 20 minutes.

Give An Antibiotic For Streptococcal Sore Throat

- 1st line antibiotic : a single dose of intramuscular benzathine penicillin
- 2nd line antibiotic Amoxicillin 3 times / daily for 10 days

	BENZATHINE PENICILLIN
Age	Add 5 ml sterile water to vial containing 1.200.000 unit = 6 ml at 200.000 unit / ml
< 5 years	3.0 ml = 600.000 unit

GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

(See FOOD advice on COUNSEL THE MOTHER chart)

Plan A: Treat Diarrhoea at Home

Counsel the mother on the 3 Rules of Home Treatment:
Give Extra Fluid, Continue Feeding, When to Return

1. ***GIVE EXTRA FLUID*** (as much as the child will take)

TELL THE MOTHER:
- Breastfeed frequently and for longer at each feed.
- If the child is exclusively breastfed, give ORS in addition to breastmilk.
- If the child is not exclusively breastfed, give one or more of the following: ORS solution, food-based fluids (such as soup, rice water, yoghurt drink and belila water), or clean water.

It is especially important to give ORS at home when:
- *the child has been treated with Plan B or Plan C during this visit.*
- *the child cannot return to a clinic if the diarrhoea gets worse.*

TEACH THE MOTHER HOW TO MIX AND GIVE ORS. GIVE THE MOTHER A BOX OF 10 PACKETS OF ORS TO USE AT HOME AND 200 ML CUP.

SHOW THE MOTHER HOW MUCH FLUID TO GIVE IN ADDITION TO THE USUAL FLUID INTAKE:

Up to 2 years	50 to 100 ml after each loose stool
2 years or more	100 to 200 ml after each loose stool

Tell the mother to:
- Give frequent small sips from a cup.
- If the child vomits, wait 10 minutes. Then continue, but more slowly.
- Continue giving extra fluid until the diarrhoea stops.

2. ***CONTINUE FEEDING***
3. ***WHEN TO RETURN***

} **See *COUNSEL THE MOTHER* chart**

Plan B: Treat Some Dehydration with ORS

Give in clinic recommended amount of ORS over 4-hour period

DETERMINE AMOUNT OF ORS TO GIVE DURING FIRST 4 HOURS.

AGE*	Up to 4 months	4 months up to 12 months	12 months up to 2 years	2 years up to 5 years
WEIGHT	< 6 kg	6 - < 10 kg	10 - < 12 kg	12 - 19 kg
ORS In ml	200 - 400	400 - 700	700 - 900	900 - 1400

**Use the child's age only when you do not know the weight. The approximate amount of ORS required (in ml) can also be calculated by multiplying the child's weight (in kg) by 75.*

- If the child wants more ORS than shown, give more.
- For infants under 6 months who are not breastfed, also give 100-200 ml clean water during this period.

SHOW THE MOTHER HOW TO GIVE ORS SOLUTION.
- Give frequent small sips from a cup or cup and spoon (one spoon every 1-2 minutes).
- If the child vomits, wait 10 minutes. Then continue, but more slowly.
- Continue breastfeeding whenever the child wants.

AFTER 4 HOURS:
- Reassess the child and classify the child for dehydration.
- Select the appropriate plan to continue treatment.
- Begin feeding the child in clinic.

IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT:
- Show her how to prepare ORS solution at home.
- Show her how much ORS to give to finish 4-hour treatment at home.
- Give her enough ORS packets to complete rehydration. Also give her a box of 10 packets of ORS as recommended in Plan A.
- Explain the 3 Rules of Home Treatment:

1. GIVE EXTRA FLUID
2. CONTINUE FEEDING
3. WHEN TO RETURN

} **See Plan A for recommended fluids and See *COUNSEL THE MOTHER* chart**

GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

(See FOOD advice on COUNSEL THE MOTHER chart)

Plan C: Treat Severe Dehydration Quickly

FOLLOW THE ARROWS. IF ANSWER IS "YES", GO ACROSS. IF "NO", GO DOWN.

START HERE

Can you give intravenous (IV) fluid immediately? — YES →

- Start IV fluid immediately. If the child can drink, give ORS by mouth while the drip is set up. Give 100 ml/kg Polyvalent , Pansol, or Ringer's Lactate Solution (or, if not available, normal saline), divided as follows:

* *Repeat once if radial pulse is still very weak or not detectable.*

AGE	First give 30 ml/kg in:	Then give 70 ml/kg in:
Infants (under 12 months)	1 hour*	5 hours
Children (12 months up to 5 years)	30 minutes*	2 1/2 hours

- Reassess the child every 1- 2 hours. If hydration status is not improving, give the IV drip more rapidly.
- Also give ORS (about 5 ml/kg/hour) as soon as the child can drink: usually after 3-4 hours (infants) or 1-2 hours (children).
- Reassess an infant after 6 hours and a child after 3 hours. Classify dehydration. Then choose the appropriate plan (A, B, or C) to continue treatment.

NO ↓

Is IV treatment available nearby (within 30 minutes)? — YES →

- Refer URGENTLY to hospital for IV treatment.
- If the child can drink, provide the mother with ORS solution and show her how to give frequent sips during the trip.

NO ↓

Are you trained to use a naso-gastric (NG) tube for rehydration? — NO ↓ **Can the child drink?** — YES →

- Start rehydration by tube (or mouth) with ORS solution: give 20 ml/kg/hour for 6 hours (total of 120 ml/kg).
- Reassess the child every 1-2 hours:
  - If there is repeated vomiting or increasing abdominal distension, give the fluid more slowly.
  - If hydration status is not improving after 3 hours, send the child for IV therapy.
- After 6 hours, reassess the child. Classify dehydration. Then choose the appropriate plan (A, B, or C) to continue treatment.

NO ↓

Refer URGENTLY to hospital for IV or NG treatment

NOTE:
- If possible, observe the child at least 6 hours after rehydration to be sure the mother can maintain hydration giving the child ORS solution by mouth.

GIVE FOLLOW-UP CARE

- **Care for the child who returns for follow-up using all the boxes that match the child's previous classifications.**

- **If the child has any new problem, assess the child as an initial visit following the *ASSESS AND CLASSIFY* chart.**

PNEUMONIA

After 2 days:

Check the child for general danger signs.
Assess the child for cough or difficult breathing. } *See ASSESS & CLASSIFY chart.*
Ask:
- Is the child breathing slower?
- Is there less fever?
- Is the child eating better?
- Is the child still wheezing?

Treatment:

- ***If child has a general danger sign or stridor or chest indrawing or has fast breathing and wheeze***, give a dose of pre-referral intramuscular antibiotic. If wheezing also give dose of rapid acting bronchodilator. Then refer URGENTLY to hospital.

- ***If child is not wheezing but breathing rate, fever and eating are the same***. Change to the second line antibiotic and advise the mother to return in 2 days or refer.(If this child had measles in the last three months,refer).

- ***If breathing slower, less fever, or eating better***, complete the 5 days of antibiotic. If child is wheezing, also treat as below.

- ***If child is wheezing but has no general danger signs, fast breathing or chest indrawing:***

  - If this is the first episode of wheezing or if the child has had previous episodes but has not been referred, continue salbutamol and refer for assessment.

  - If the child has had at least one episode of wheezing before this and has already been referred for assessment, advise mother to continue with treatment prescribed by the referral hospital. Advise the mother to return if the child's breathing becomes more difficult.If this child returns because condition has worsened, refer for further treatment.

Cough or Cold - WHEEZE

After 2 days

Check the child for general danger signs.
Assess the child for cough or difficult breathing. } *See ASSESS & CLASSIFY chart.*

Treatment:

- ***If any danger sign or stridor or chest indrawing-*** Treat as SEVERE PNEUMONIA OR VERY SEVERE DISEASE, give one dose of pre-referral intramuscular antibiotic. Give one dose of rapid acting bronchodilator and refer URGENTLY to hospital.

- ***If fast breathing***-treat as PNEUMONIA, also give oral salbutamol.

- ***If child is wheezing but has no general danger signs, fast breathing or chest indrawing:***
  - If this is the first episode of wheezing or if the child has previous episodes but has not been referred. continue salbutamol and refer for assessment.

  - If the child has already been referred for a pervious episode of wheezing advise the mother to continue with treatment prescribed by the referral hospital. Advise the mother to return if the child's breathing becomes more difficult. If this child returns because condition has worsened, refer URGENTLY to hospital for further treatment.

- ***If no wheezing***- complete 5 days of oral salbutamol.

DYSENTERY

After 2 days:
Assess the child for diarrhoea. *>>> See ASSESS & CLASSIFY chart.*
Ask:
- Are there fewer stools?
- Is there less fever?
- Is the child eating better?
- Is there less blood in the stool?
- Is there less abdominal pain?

Treatment:
- If the child is ***dehydrated***, treat dehydration.
- If ***number of stools, amount of blood in stools, fever, abdominal pain, or eating is the same or worse:***

  Change to second-line oral antibiotic recommended for Shigella.
  Give it for 5 days. Advise the mother to return in 2 days.
  Exceptions - if the child: - is less than 12 months old, or
  - was dehydrated on the first visit, or
  - had measles within the last 3 months } Refer to hospital.

- If ***fewer stools, less blood in the stools, less fever, less abdominal pain, and eating better,*** continue giving the same antibiotic until finished.
- ***Continue Zinc Syrup for 14 days.***

GIVE FOLLOW-UP CARE

- **Care for the child who returns for follow-up using all the boxes that match the child's previous classifications.**
- **If the child has any new problem, assess the child as an initial visit following the *ASSESS AND CLASSIFY* chart.**

PERSISTENT DIARRHOEA

After 5 days:

Ask:
- Has the diarrhoea stopped?
- How many loose stools is the child having per day?

Treatment:

- If ***the diarrhoea has not stopped (child is still having loose stools)***, do a full reassessment of the child. Give any treatment needed. Then refer to hospital.
- If ***the diarrhoea has stopped (child having less loose stools)***, tell the mother to follow the usual feeding recommendations for the child's age.

Tell the mother to continue giving the child the multivitamin mineral supplement INCLUDING ZINC.

FEVER-POSSIBLE BACTERIAL INFECTION AND FEVER-BACTERIAL INFECTION UNLIKELY

If fever persists after 2 days:

Do a full reassessment of the child. >>> *See ASSESS & CLASSIFY chart.*
Assess for other causes of fever.

Treatment:

- If the child has any ***general danger sign or stiff neck***, treat as VERY SEVERE FEBRILE DISEASE.
- If the child has any ***apparent bacterial cause of fever*** provide treatment.
- If the child has no ***apparent bacterial cause of fever:***
  - Advise the mother to return again in 2 days if the fever persists.
  - If fever has been present every day for more than 5 days, refer for assessment.

ACUTE EAR INFECTION

After 5 days:

Reassess for ear problem. >>> *See ASSESS & CLASSIFY chart.*
Measure the child's temperature.

Treatment:

- If there is ***tender swelling behind the ear or ear pain or high fever (38°C or above)***, refer URGENTLY to hospital.
- ***Acute ear infection:*** if ***ear discharge*** persists, treat for 5 more days with the same antibiotic. Continue wicking to dry the ear. Follow-up once again in 5 days. If ear pain or discharge persists refer.
- If ***no ear pain or discharge***, praise the mother for her careful treatment. Ask the mother to continue the same antibiotic for other 5 days.
- If ***discharge,*** for 14 days or more, refer.

MEASLES WITH EYE OR MOUTH COMPLICATIONS

After 2 days:

Look for red eyes and pus draining from the eyes.
Look at mouth ulcers.
Smell the mouth.

Treatment for Eye Infection:

- If ***pus is draining from the eye***, ask the mother to describe how she has treated the eye infection. If treatment has been correct, refer to hospital. If treatment has not been correct, teach mother correct treatment.
- If ***the pus is gone but redness remains***, continue the treatment.
- If ***no pus or redness***, stop the treatment.

Treatment for Mouth Ulcers:

- If ***mouth ulcers are worse, or there is a very foul smell from the mouth***, refer to hospital.
- If ***mouth ulcers are the same or better***, continue using half-strength gentian violet for a total of 5 days.

Treatment for thrush:

If thrush is worse check that treatment is being given correctly.

If thrush is the same or better, and the child is feeding well, continue nystatin for a total of 7 days.

GIVE FOLLOW-UP CARE

- **Care for the child who returns for follow-up using all the boxes that match the child's previous classifications.**
- **If the child has any new problem, assess the child as an initial visit following the *ASSESS AND CLASSIFY* chart.**

MEASLES

If not improving after 2 days:
Do a full reassessment of the child >>> see ASSESS & CLASSIFY chart.

Treatment:

- If ***general danger sign or clouding of the cornea or deep extensive mouth ulcers or pneumonia,*** treat as SEVERE COMPLICATED MEASLES.
- If ***pus draining from the eye or mouth uclers***,treat as MEASLES WITH EYE OR MOUTH COMPLICATIONS.
- If ***none of the above signs,*** advise the mother when to return immediately.
- Follow up in two days if not improving.

* *If the child received already the dose of vitamin A in the previous visit, do not repeat.*

FEEDING PROBLEM

After 5 days:

Reassess feeding. >>> *See questions at the top of the COUNSEL chart.*
Ask about any feeding problems found on the initial visit.

- Counsel the mother about any new or continuing feeding problems. If you counsel the mother to make significant changes in feeding, ask her to bring the child back again.
- If the child is classified as MODERATE MALNUTRITIO N ask the mother to return 30 days after the initial visit to measure the child's Wt. /age, BMI or MUAC.

ANAEMIA

After 14 days:
Reassess for anaemia every 14 days for 2 months

- If severe pallor refer URGENTLY to hospital.
- If pallor still present or improving, continue giving iron daily for 2 months.
- If the child has pallor after 2 months, refer for assessment.

MODERATE MALNUTRITION

After 30 days:

- Assess the child using the same measurement (Wt./A , W /H or MUAC) used on the initial visit:
- Check the child for edema of both feet.
- Reassess feeding. See questions in the COUNSEL THE MOTHER chart.

Treatment:

- If the child is no longer classified as MODERATE MALNUTRITION, praise the mother and encourage her to continue.
- If the child is still classified as MODERATE MALNUTRITION, counsel the mother about any feeding problem found. Ask the mother to return again in one month. Continue to see the child monthly until the child is feeding well and gaining weight regularly or his or her Wt. /A or Wt. /H or BMI is -2 z-scores or more or MUAC is 125 mm. or more.

Exception:

If you do not think that feeding will improve or if the child has lost weight or his or her MUAC has diminished, refer the child.

STUNTING
After 5 days

* A sess child feeding, hygiene and sanitation

- If the practices remain the same, counsel the mother
- If improved praise the mother

* A k the mother to come monthly for 3 months.
* E ch visit measure the L H/A
* Af er 3 months if no improvement, refer for further assessment

OVERWEIGHT

After 5 days

- Assess feeding and physical activity
- If improved, praise the mother
- If not improved, re-counsel
- Set a reasonable goal for improving growth of the child

Ask the mother to return monthly

- In each visit measure the BMI and assess feeding and physical activity
- After 3 months if no improvement, refer for further assessment
- If improvement, follow up every 3 months until the child reaches the goal set for his age.

IF ANY MORE FOLLOW-UP VISITS ARE NEEDED BASED ON THE INITIAL VISIT OR THIS VISIT, ADVISE THE MOTHER OF THE **NEXT FOLLOW-UP VISIT.**

•

ALSO, ADVISE THE MOTHER **WHEN TO RETURN IMMEDIATELY.** (SEE *COUNSEL* CHART.)

COUNSEL THE MOTHER

FOOD

Assess the Child's Feeding

Ask questions about the child's usual feeding and feeding during this illness. Compare the mother's answers to the ***Feeding Recommendations*** for the child's age in the box below.

ASK -

- Do you breastfeed your child?
  - How many times during the day?
  - Do you also breastfeed during the night?

- Does the child take any other food or fluids?
  - What food or fluids?
  - How many times per day?
  - What do you use to feed the child?
  - How large are servings? Does the child receive his own serving? Who feeds the child and how? What food available at home ?

- During this illness, has the child's feeding changed? If yes, how?

Feeding Recommendations During Sickness and Health

Up to 6 Months of Age

- Immediately after birth, put your baby in skin to skin contact with you.
- Allow your baby to take the breast within the first hour. Give your baby colostrum, the first yellowish, thick milk. It protects the baby from many Illnesses.
- Breastfeed day and night, as often as your baby wants, at least 8 times in 24 hours. Frequent feeding produces more milk.
- If your baby is small (low birth weight), feed at least every 2 to 3 hours. Wake the baby for feeding after 3 hours, if baby does not wake self.
- Breastfeed as often as your child wants. Look for signs of hunger, such as beginning to fuss, sucking fingers, or moving lips.
- Do not give other foods or fluids. Breast milk is all your baby needs.

6 Months up to 9 Months

- Breastfeed as often as the child wants.
- Start introducing complementary feeding.
- At the beginning of the 7th month of age, start giving the child small amounts of food twice daily. Start with small amounts until reaching 2—3 table spoons per meal by the end of the month.
- Also give thick porridge or well-mashed foods, including Chicken or chicken liver source foods and vitamin A-rich fruits and vegetables.
- Give adequate servings :
  - Bread, adse or eggs yolk or pealed fool medamis and drops of oil, strained tomatoes or orange juice.
- -Rice or boiled potatoes, squash or carrots (add drops of lemon juice)
- - mashed biscuits and banana or rice pudding and mashed banana

9 Months up to 12 Month

- Breastfeed as often as the child wants.
- Also give thick porridge or well-mashed foods, including animal (meat, chicken, fish) source foods and vitamin A-rich fruits and vegetables.
- Give half cup at each meal (cup= 250 ml)
- .Give adequate servings of:-
  - Bread, or egg yolk or pealed fool medamis and drops of oil, strained tomatoes or orange juice.
- -Rice or boiled potatoes, squash or carrots (add drops of lemon juice) and fish or meat or chicken (meat or liver).
- mashed biscuits and banana or rice pudding and mashed banana
- 3 times per day if breastfed;
  5 times per day if not breastfed.
  In alternating with breastfeeding.

12 Months up to 2 Years

- Breastfeed as often as the child wants.
- Give adequate servings of:
- - Bread and cheese (kareesh with drops of oil or white low salt or processed) eggs and pealed tomatoes.
- - Rice and meat or chicken or fish with boiled spinach or molokheya and fruits.
- - Koshari , Belila with milk and fruits or family foods
- 5 times per day.
- Give 3/4 cup at each meal (1 cup = 250 ml).
- Give 3 meals each day.
- Offer 2 snacks (chewable items) between meals if hungry
- Continue to feed your child slowly, patiently. Encourage your child-but do not force- to eat.

2 Years up to 5

- Give a variety of family foods to your child, including animal source foods and vitamin A-rich fruits and vegetables.
- Give at least 1 full cup (250 ml) at each meal.
- Give 3 meals each day.
- Offer 2 snacks between meals.As
  - - Sweet potatoes or fried potatoes.
  - - Bread with eggs or cheese or halawa tehinia or molasse with tehina and tomatoes or carrots.
  - Fresh fruits of the season.
  - Biscuits, cakes, or dates.
- If your child refuses a new food, offer "tastes" several times. Show that you like the food. Be patient.
- Talk with your child during a meal, and keep eye contact.

Feeding Recommendations For a Child Who Has PERSISTENT DIARRHOEA

- If still breastfeeding, give more frequent breastfeeds, day and night.
- If taking other milk:
  - replace with increased breastfeeding OR
  - Replaced with fermented milk products such as yoghurt if taking fresh cow milk
  - replace half the milk with nutrient-rich semisolid food as rice, beans and vegetable soup.
  - give milk not more than 50 ml/kg per day.
  - give frequent small meals at least 6 times a day.

Counsel the Mother About Feeding Problems

If the child is not being fed as described in the above recommendations, counsel the mother accordingly. In addition:

If the mother reports difficulty with breastfeeding, assess breastfeeding. (See *YOUNG INFANT* chart.)
As needed, show the mother correct positioning and attachment for breastfeeding.

If the child is less than 6 months old and is taking other milk or foods: or

If the mother thinks she does not have enough milk

- Assess breastfeeding:
- Build mother's confidence that she can produce all the breastmilk that the child needs (proper weight gain).
- Suggest giving more frequent, longer breastfeeds day and night, and gradually reducing other milk or foods.

If other milk needs to be continued, counsel the mother to:

- Breastfeed as much as possible, including at night.
- Make sure that other milk is a locally appropriate breastmilk substitute.
- Make sure other milk is correctly and hygienically prepared and given in adequate amounts.
- Finish prepared milk within an hour.

If the mother is using a bottle to feed the child:

- Recommend substituting a cup for bottle.
- Show the mother how to feed the child with a cup.

If the child is not being fed actively, counsel the mother to:

- Sit with the child and encourage eating.
- Give the child an adequate serving in a separate plate or bowl.

If the child is not feeding well during illness, counsel the mother to:

- Breastfeed more frequently and for longer if possible.
- Use soft, varied, appetizing, favourite foods to encourage the child to eat as much as possible, and offer frequent small feedings.
- Clear a blocked nose if it interferes with feeding.
- Expect that appetite will improve as child gets better.
- Express breast milk if necessary.

Follow-up any feeding problem in 5 days.

Advise the mother to expose her child to sunlight for prevention of rickets.

FLUID

Advise the Mother to Increase Fluid During Illness

FOR ANY SICK CHILD:

- Breastfeed more frequently and for longer at each feed.
- Increase fluid. For example, give soup, rice water, yoghurt drinks,belila water, home fluids or clean water.

FOR CHILD WITH DIARRHOEA:

- Giving extra fluid can be life saving. Give fluid according to Plan A or Plan B on *TREAT THE CHILD chart.*

Advise the Mother When to Return to Health Worker

FOLLOW-UP VISIT

Advise the mother to come for follow-up at the earliest time listed for the child's problems.

If the child has:	**Return for follow -up in:**
PNEUMONIA Cough or cold - WHEEZE DYSENTERY FEVER, if fever persists MEASLES WITH EYE OR MOUTH COMPLICATIONS MEASLES, if not improving	2 days
PERSISTENT DIARRHOEA ACUTE EAR INFECTION FEEDING PROBLEM ANY OTHER ILLNESS, if not improving	5 days
Anemia	14 days
Moderate acute malnutrition - Obesity — Stunding	30 days

NEXT
WELL- CHILD VISIT

- Advise mother when to return for next immunization according to immunization schedule.
- Advise the mother to give the child (from 6 to 30 months) the weekly dose of iron after recovery.
- Advise the mother to give the child Vitamin D 400 IU daily (Since birth up to 30 months)

WHEN TO RETURN IMMEDIATELY

Advise mother to return immediately if the child has any of these signs:	
Any sick child	• Not able to drink or breastfeed • Becomes sicker • Develops a fever
If child has NO PNEUMONIA: COUGH OR COLD, also return if:	• Fast breathing • Difficult breathing
If child has Diarrhoea, also return if:	• Blood in stool • Drinking poorly

Counsel the Mother About Her Own Health

- If the mother is sick, provide care for her, or refer her for help.
- If she has a breast problem (such as engorgement, sore nipples, breast infection), provide care for her or refer her for help.
- Advise her to eat well to keep up her own strength and health.
- Check the mother's immunization status and give her tetanus toxoid if needed.
- Check the mother's supplementation with iron and vitamin A according to the national policy.
- Make sure she has access to:
  - Family planning
  - Counselling on reproductive health problems.
- Advise mother to use iodized salt for the family foods instead of the ordinary salt.

ASSESS, CLASSIFY AND TREAT THE SICK YOUNG INFANT AGE UP TO 2 MONTHS

ASSESS

ASK THE MOTHER WHAT THE YOUNG INFANT'S PROBLEMS ARE

CLASSIFY

- Determine if this is an initial or follow-up visit for this problem.
  - if follow-up visit, use the follow-up instructions on the bottom of this chart.
  - if initial visit, assess the young infant as follows:

IDENTIFY TREATMENT

CHECK FOR POSSIBLE BACTERIAL INFECTION

ASK:

- Is the young infant able to feed ?
- Has the infant had convulsions in the present illness ?

LOOK, LISTEN, FEEL:

- See if the infant is convulsing now.
- Count the breaths in one minute. Repeat the count if 60 or more.
- Look for severe chest indrawing.
- Look and feel for bulging anterior fontanel
- Look for nasal flaring.
- Look and listen for grunting.
- Look at the eyes. Is it draining pus? Is draining pus associated with redness and swelling?
- Look at the umbilicus. Is it red or draining pus? Does the redness extend to the skin?
- Measure temperature (or feel for fever or low body temperature).
- Look for skin pustules. Are there many or severe pustules?
- See if the young infant is lethargic or unconscious.
- Look at the young infant's movements. Are they less than normal or no movements at all ?

YOUNG INFANT MUST BE CALM

Classify ALL YOUNG INFANTS

SIGNS	CLASSIFY AS	TREATMENT (Urgent pre-referral treatments are in bold print)
• Not able to feed OR • Convulsions OR • Fast breathing (60 breaths per minute or more) OR • Severe chest indrawing OR • Nasal flaring OR • Grunting OR • Bulging anterior fontanel OR • Pus draining from the eyes with redness and swelling OR • Umbilical redness extending to skin OR • Fever (37.5°C* or above or feels hot) or low body temperature (less than 35.5°C* or feels cold) OR • Many or severe skin pustules OR • Lethargic or unconscious OR • Less than normal movements or no movements at all	**POSSIBLE SERIOUS BACTERIAL INFECTION**	***Treat current convulsion with rectal sodium valproate.*** ***Give first dose of intramuscular antibiotics.*** ***Treat to prevent low blood sugar.*** ***Advise mother how to keep the infant warm on the way to the hospital.*** ***Refer URGENTLY to hospital.*** **
• Red umbilicus • Skin pustules OR • Pus draining from the eyes.	**LOCAL BACTERIAL INFECTION**	Teach mother to treat local infections at home. Advise mother to give home care for the young infant. Follow - UP in2 days
• None of the above signs	**BACTERIAL INFECTION UNLIKELY**	Advise mother to give home care for the young infant. Follow-up in 2 days.

CHECK FOR JAUNDICE

ASK

- Does the infant has jaundice?
- When did it start?
- Is the infant's age 2 weeks or more ?
- Is the infant 2.5 Kg or less than ?

LOOK AND FEEL

- Look for presence of jaundice (yellow eyes or skin)
- If present, Is it extending to palms and/or soles?

Classify JAUNDICE

• Jaundice started in the first 24 hours of life and still present OR • Jaundice *extending to* palms and/or soles OR • Jaundice in Infant 2.5 Kg. or less	**SEVERE JAUNDICE**	➢ ***Encourage breastfeeding to prevent low blood sugar*** ➢ ***Advise mother how to keep the infant warm on the way to the hospital*** ➢ ***Refer URGENTLY to hospital***
Jaundice ; • Jaundice appearing after 24 hours of age Or • Infant aged 14 days or more	**JAUNDICE**	• Advise the mother to give home care for the young infant • If infant aged 2 weeks or more, refer for assessment. • Advise mother to return immediately if jaundice extends to palm. • Follow-up in 1 day
None of the above	**NO JAUNDICE**	• Advise the mother to give home care for the young infant. • Follow—up in 2 days

THEN ASK:
Does the young infant have diarrhoea?

IF YES, ASK:	*LOOK AND FEEL:*
• For how long? • Is there blood in the stool?	• Look at the young infant's general condition. Is the infant: Lethargic or unconscious? Restless and irritable? • Look for sunken eyes. • Pinch the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)? Slowly?

Classify DIARRHOEA

for DEHYDRATION	Two of the following signs: • Lethargic or unconscious • Sunken eyes • Skin pinch goes back very slowly.	**SEVERE DEHYDRATION**	***Treat to prevent low blood sugar.*** ***Advise mother how to keep the infant warm on the way to the hospital.*** ***Refer URGENTLY to hospital.***
	Two of the following signs: • Restless, irritable • Sunken eyes • Skin pinch goes back slowly.	**SOME DEHYDRATION**	Give fluid and food for some dehydration (Plan B). ***If infant also has any severe classification :*** ***- Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way.*** ***Advise mother to continue breastfeeding*** ***Keep the infant warm .*** Follow up in 2 days
	• Not enough signs to classify as some or severe dehydration.	**NO DEHYDRATION**	Give fluids to treat diarrhoea at home (Plan A). ➢ Follow up in 2 days
and if diarrhoea 14 days or more	• Diarrhoea lasting 14 days or more.	**SEVERE PERSISTENT DIARRHOEA**	***Treat to prevent low blood sugar.*** ***Advise mother how to keep the infant warm on the way to the hospital.*** ***Refer URGENTLY to hospital.***
and if blood in stool	• Blood in the stool.	**BLOOD IN STOOL**	***Treat to prevent low blood sugar.*** ***Advise mother how to keep the infant warm on the way to the hospital.*** ***Refer URGENTLY to hospital.***

THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT:

ASK:

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

LOOK, LISTEN,FEEL:

- Determine weight for age.
- In newborn: determine birth weight
- Look for ulcers or white patches in the mouth (thrush).

IF AN INFANT: **Has no indications to refer urgently to hospital:**

ASSESS BREASTFEEDING:

- Has the infant breastfed in the previous hour?

If the infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes.
(If the infant was fed during the last hour, ask the mother if she can wait and tell you when the infant is willing to feed again.)

- Is the infant position correct?

TO CHECK POSITIONING , LOOK FOR:
- *Infant's neck is straight or bent slightly back,*
- *Infant's body is turned towards the mother,*
- *Infants's body is close to mother's body, and*
- *Infants's whole body supported.*

(If all of these signs are present, the infant's positioning is good)

poor positioning *good positioning*

- Is the infant able to attach?

TO CHECK ATTACHMENT, LOOK FOR:
- *Chin touching breast*
- *Mouth wide open*
- *Lower lip turned outward and,*
- *More areola visible above than below the mouth*

(If all of these signs are present, the attachment is good.)

not well attached *good attachment*

- Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)?

not suckling effectively *suckling effectively*

Clear a blocked nose if it interferes with breastfeeding.

Classify FEEDIN

• Poor positioning OR • Not well attached to breast OR • Not suckling effectively OR • Less than 8 breastfeeds in 24 hours OR • Receives other foods or drinks OR • Any other breastfeeding problems reported by the mother OR • Low weight for age or low birth weight (2500 mg or less) OR • Thrush (white patches in mouth) OR • Ulcers	**FEEDING PROBLEM OR LOW WEIGHT**	▯ Advise the mother to breastfeed as often and for as long as the infant wants, day and night. • If low birth weight with breastfeeding problem, refer to hospital • if the infant is breastfed and has a breastfeeding problem, counsel the mother on the breastfeeding problem. • If not breastfeeding at all: - Refer for breastfeeding counselling and possible relactation. - Advise about correctly preparing breastmilk substitutes and using a cup. • If thrush, teach the mother to treat thrush at home. • If mouth ulcers, teach the mother to treat mouth ulcers at home. • Advise mother to give home care for the young infant. • Follow-up any feeding problem or thrush or ulcers in 2 days. Follow-up low weight for age in 14 days.
• Not low weight for age and no feeding problems.	**NO FEEDING PROBLEM**	▯ Advise mother to give home care for the young infant. ▯Praise the mother for feeding the infant

THEN CHECK THE YOUNG INFANT'S IMMUNIZATION STATUS:

IMMUNIZATION SCHEDULE:	AGE	VACCINE
	At Birth	• OPV Zero Dose • BCG

ASSESS OTHER PROBLEMS : complete clinical examination

TREAT THE YOUNG INFANT AND COUNSEL THE MOTHER

Give First Dose of Intramuscular Antibiotics

Give first dose of both ampicillin **and** gentamicin intramuscular.

WEIGHT	GENTAMICIN Dose: 2.5 mg per kg			Ampicillin Dose: 50 mg per kg
	Undiluted 2 ml vial containing 20 mg = 2 ml at 10 mg/ml	OR	Add 6 ml sterile water to 2 ml vial containing 80 mg = 8 ml at 10 mg/ml	To a vial of 500 mg : Add 4.5 ml sterile water = 5.0 ml at 100 mg/ml
1 kg	0.25 ml			0.5 ml
2 kg	0.50 ml			1.0 ml
3 kg	0.75 ml			1.5 ml
4 kg	1.00 ml			2.0 ml
5 kg	1.25 ml			2.5 ml

TREAT THE YOUNG INFANT AND COUNSEL THE MOTHER

To Treat Convulsing Young Infant, See TREAT THE CHILD Chart.

To Treat Diarrhoea, See TREAT THE CHILD Chart.(exception: Zinc is not given to young infants)

(treat the young infant to prevent low blood sugar) see treat the child chart

Immunize Every Sick Young Infant, as Needed.

Teach the Mother to Treat Local Infections at Home

- Explain how the treatment is given.
- Watch her as she does the first treatment in the clinic.
- She should return to the clinic if the infection worsens.

To Treat Skin Pustules or Umbilical Infection
Tell her to do the treatment twice daily.

The mother should:
- Wash hands
- Gently wash off pus and crusts with soap and water
- Dry the area
- Paint with gentian violet
- Wash hands

To Treat Thrush (white patches in mouth) and Ulcers
Tell her to do the treatment twice daily.
The mother should:
Wash hands
Wash mouth with clean soft cloth wrapped around the finger and wet with salt water
If ulcers, Paint the mouth with half-strength gentian violet
If thrush, instill 1 ml nystatin 4 times/day.
Avoid feeding for 20 minutes after instillation .
If breastfeed, check mothers breasts for thrush.
If present treat with nystatin drops. Advise mothers to wash breasts after feeds . If bottle fed advise the use of cup and food.
Wash hands

To Treat Eye Infection:
Tell her to do the treatment 3 times daily.

The mother should
- Wash her hands
- Use clean cloth and water to gently remove pus from the eyes
- Then apply tetracycline eye ointment in both eyes on the inside of the lower lid.
- Wash her hands
- Treat until redness is gone.

MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Name:_____ **Male:**____ **Female:**____ **Age:**___ **months** **Weight:** ____**kg** **Temperature:**____ **°C** **Initial Visit** _____ **Follow-up Visit**____

ASK: What are the child's problems? _____

ASSESS (Circle all signs present)	**CLASSIFY**	**TREAT**
DOES THE CHILD HAVE ANY GENERAL DANGER SIGN? **Yes**___ **No**___ NOT ABLE TO DRINK OR BREASTFEED VOMITS EVERYTHING HISTORY OF CONVULSIONS During the present illness LETHARGIC OR UNCONSCIOUS CONVULSING NOW		
DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING? **Yes**___ **No**____ • For how long? ____ Days • Count the breaths in one minute. _____ breaths per minute. Fast breathing? • Look for chest indrawing. • Look and listen for stridor. • Look and listen for wheeze		
DOES THE CHILD HAVE DIARRHOEA? **Yes** ___ **No** ___ •For how long? _____ Days • Is there blood in the stool ? • Look at the child's general condition. Is the child: Lethargic or unconscious? Restless and/or irritable? • Look for sunken eyes. • Offer the child fluid. Is the child: Not able to drink or drinking poorly? Drinking eagerly, thirsty? • Pinch the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)? Slowly?		
CHECK FOR THROAT PROBLEMS • Does the child have fever? (by history or feels hot/temperature 37.5°C or above) • Does the child have sore throat? • Feel enlarged tender lymph node on the neck • Look for red (congested) throat • Look for white or yellow exudate on the throat and/or tonsils		
DOES THE CHILD HAVE AN EAR PROBLEM? **Yes**___ **No**___ • Is there agonizing ear pain? • Is there ear discharge? If Yes, for how long? ___ Days • Look for pus draining from the ear. • Feel for tender swelling behind the ear.		

ASSESS (Circle all signs present)	CLASSIFY	TREAT
DOES THE CHILD HAVE FEVER? (by history or feels hot/temperature 37.5°C or above) **Yes____ No___** • For how long? _____ Days • If more than 5 days, has fever been present every day? • Has child had measles within the last three months? • Look or feel for stiff neck. • Look for signs of MEASLES Generalized rash ***and*** One of these: cough, runny nose, or red eyes.		
If the child has measles now ***Or*** *within the last 3 months:* • Look for mouth ulcers. ***If*** Yes, are they deep or extensive? • Look for pus draining from the eye. • Look for clouding of the cornea.		
CHECK FOR MALNUTRITION AND ANEMIA. • Look • visible severe wasting. • edema of both feet . • Determine • weight for height (Lor/H), below -3 -3…..-2 -2or above •Weight / age , below -3 -3…..-2 -2or above •length/ height for age (L/HFA) below -3 -3…..-2 -2or above •body mass index (BMI) below +3 +3…..+2 +2or above • Measure • Measure mid upper arm circumference (MUAC),if bellow115m 115-125 • Look for palmer and mucous membrane pallor Severe palmer and /or mucous membrane pallor **Some palmer and / or mucous membrane pallor.**		
CHECK THE CHILD'S IMMUNIZATION AND VITAMIN A SUPPLEMENTATION STATUS. (Circle immunizations and vitamin A needed today). OPV ZERO DOSE ——— BCG _____ OPV1 _____ DPT1_____ HB1_____ OPV2 _____ DPT2_____ HB2_____ OPV3 _____ DPT3_____ HB3_____ OPV4 OPV5 _____ MMR___ Vitamin A (1st dose) ____ OPV Booster___ DPT Booster____ MMR Booster___ Vitamin A (2nd dose)____	Return for next immunization on: _____ **(Date)**	Give any immunizations or vitamin A supplementation needed today
ASSESS CHILD'S FEEDING IF NO NEED FOR URGENT REFERRAL • Do you breastfeed your child? Yes___ No ____ If Yes, how many times in 24 hours? _____ times. Do you breastfeed during the night? Yes___ No ____ • Does the child take any other food or fluids? Yes___ No ____ If Yes, what food or fluids?_____ How many times per day? _____ times. What do you use to feed the child? _____ How large are servings? _____ Does the child receive his own serving? _____ Who feeds the child and how? _____ • During the illness, has the child's feeding changed? Yes __ No __ if Yes, how?_____	FEEDING PROBLEMS	Appropriate Advise for Feeding Problems
ASSESS OTHER PROBLEMS:		

Return for follow-up in :_____ **Advise the mother on home care : Food** _____ **Fluids** _____ **when to return immediately.**_____

Counsel the mother about her own health _____

MANAGEMENT OF THE SICK YOUNG INFANT AGE UP TO 2 MONTHS

Name:_____ **Male:**___ **Female:**____ **Age:**____ **days** **Weight:**_____ **kg** **Temperature:** _____**°C** **Initial Visit:** _____ **Follow-up Visit:** _____

ASK: What are the infant's problems? _____

Assess (Circle any signs present)	**CLASSIFY**	**TREAT**
CHECK FOR POSSIBLE BACTERIAL INFECTION • Is the young infant not able to feed ? • Has the infant had convulsions during the present illness? • Is the young infant convulsing now? • Count the breaths in one minute. _____ breaths per minute Repeat if elevated _____ Fast breathing? • Look for severe chest indrawing. • Look for nasal flaring. • Look and listen for grunting. • Look and feel for bulging fontanelle. • Look at the eyes. Is it draining pus ? is draining pus associated with redness and swelling ? • Look at the umbilicus. Is it red or draining pus? Does the redness extend to the skin? • Fever (temperature 37.5°C or feels hot) or low body temperature (below 35.5°C or feels Cold). • Look for skin pustules. Are there many or severe pustules? • See if the young infant is lethargic or unconscious. • Look at the young infant's movements. Are they Less than normal?		
CHECK FOR JAUNDICE? **Ask** -Dos the infant have Jaundice? - When did it start ? - IS the infant s age 2 weeks or more? - IS infant 2.5 Kg or less? **LOOK AND FEEL** - Look for Presence of Jaundice (yellow eyes or skin) - IF Present is it extending to palms and / or soles ?		
DOES THE YOUNG INFANT HAVE DIARRHOEA? **Yes____ No ____** • **For how long? _____Days** • **Is there blood in the stool?** • **Look at the young infant's general condition.** **Is the infant:** **Lethargic or unconscious?** **Restless and/ or irritable?** • **Look for sunken eyes.** • **Pinch the skin of the abdomen. Does it go back:** **Very slowly (longer than 2 seconds)?** **Slowly?**		

ASSESS (Circle all signs)	CLASSIFY	TREAT
THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT • Is there any difficulty feeding? Yes _____ No _____ • Is the infant breastfed? Yes _____ No _____ If Yes, how many times in 24 hours? _____ times is the infant breastfed by night? Yes _____ No _____ • Does the infant usually receive any other foods or drinks? Yes _____ No _____ If Yes, how often?_____ • What do you use to feed the infant ?_____ • Determine weight for age. Low ___ Not Low ____ • In neoborn determine birth weight. • Look for ulcers or white patches in the mouth (thrush).		
f the infant has NO indications to refer urgently to hospital: ASSESS BREAST FEEDING **ASSESS BREASTFEEDING:** If infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes. • Is the infant position correct? To check positioning, look for: - Infant's neck straight or bent slightly back Yes ___ No ___ - Infant's body turned towards mother Yes ___ No ___ - Infant's body close to mother's body Yes ___ No ___ - Infant's whole body supported Yes ___No ___ ***poor positioning*** ***good positioning*** • Is the infant able to attach? To check attachment, look for: - Chin touching breast Yes ___ No ___ - Mouth wide open Yes ___ No ___ - Lower lip turned outward Yes ___ No ___ - More areola above than below the mouth Yes __ No ___ ***not well attached*** ***good attachment*** • Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)? ***not suckling effectively*** ***suckling effectively***		
CHECK THE YOUNG INFANT'S IMMUNIZATION STATUS Circle immunizations needed today. OPV ZERO DOSE : ——— BCG: ———	Return for next immunization on: _____ (Date)	Give any immunizations needed today:
ASSESS OTHER PROBLEMS		

Return for follow-up in _____

Advise the mother on home care: **Continue breastfeeding:**_____ **Keep the infant warm :**_____ **when to return immediately.**_____

Counsel the mother about her own health _____

GIVE FOLLOW-UP CARE FOR THE SICK YOUNG INFANT

FEEDING PROBLEM

After 2 days:
Reassess feeding. >>> See –Then Check for Feeding Problem or Low Weight" above.
Ask about any feeding problems found on the initial visit.

- Counsel the mother about any new or continuing feeding problems. If you counsel the mother to make significant changes in feeding, ask her to bring the young infant back again (in 2 days).
- If the young infant is low weight for age, ask the mother to return 14 days of this follow up visit. Continue follow-up until the infant is gaining weight well.

Exception:
If you do not think that feeding will improve, or if the young infant has ***lost weight***, refer the child.

LOW WEIGHT

After 14 days:
Weigh the young infant and determine if the infant is still low weight for age.
Reassess feeding. >>> See –Then Check for Feeding Problem or Low Weight" above.

If the infant is ***no longer "low weight for age"***, praise the mother and encourage her to continue.

If the infant is ***still "low weight for age", but is feeding well***, praise the mother. Ask her to have her infant weighed again within a month or when she returns for immunization.

If the infant is ***still "low weight for age" and still has a feeding problem***, counsel the mother about the feeding problem. Ask the mother to return again in 14 days (or when she returns for immunization, if this is within 2 weeks). Continue to see the young infant every week until the infant is feeding well and gaining weight regularly or is no longer low weight for age.

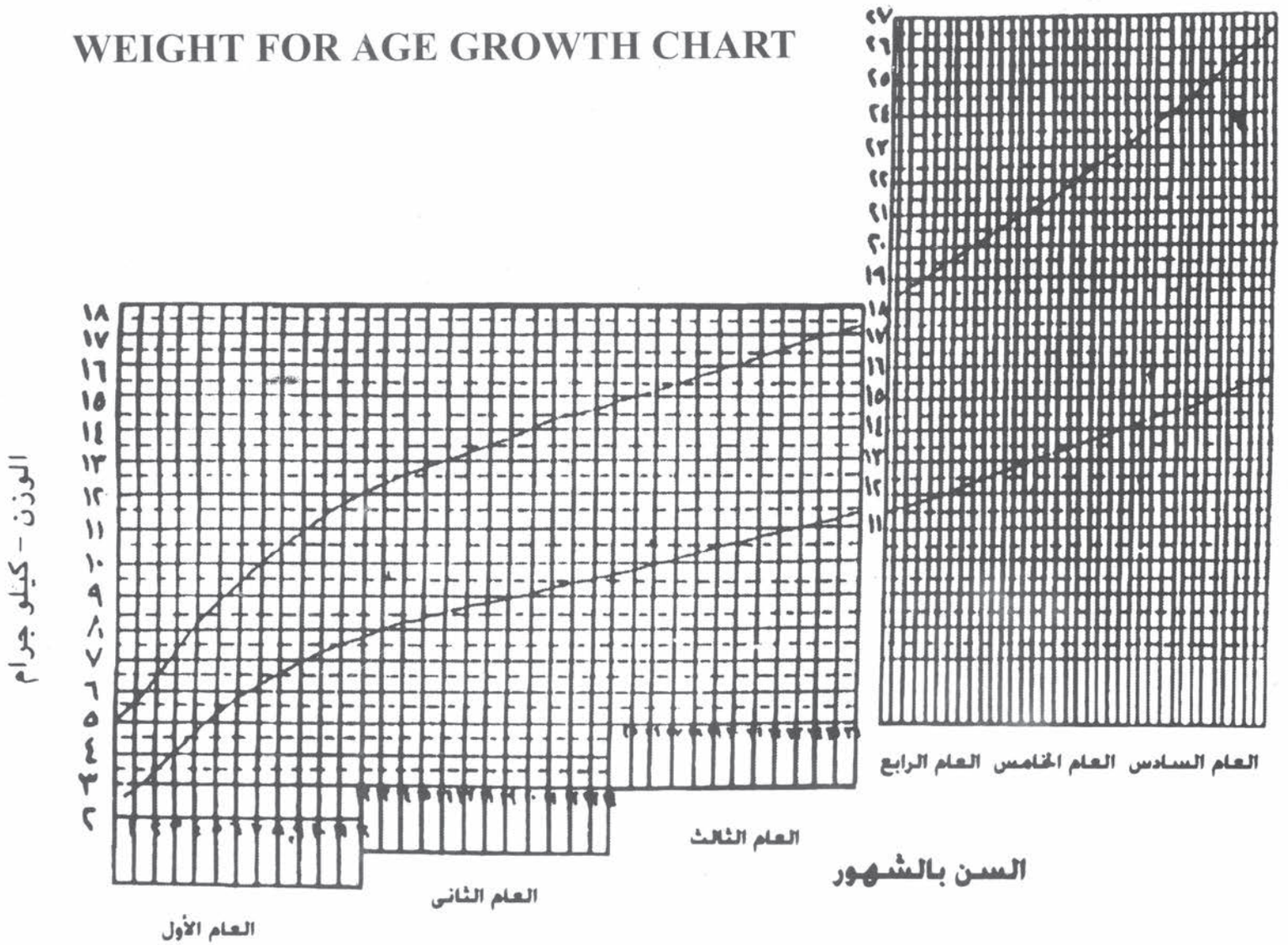
Exception:
If the infant is not adding weight and has no feeding problem, or if the young infant has ***lost weight***, refer to hospital.

THRUSH OR ULCERS

After 2 days:
Look for ulcers or white patches in the mouth (thrush).
Reassess feeding. >>> See "Then Check for Feeding Problem or Low Weight" above.

If *thrush or ulcers are worse*, or the infant has ***problems with attachment or suckling***, refer to hospital.

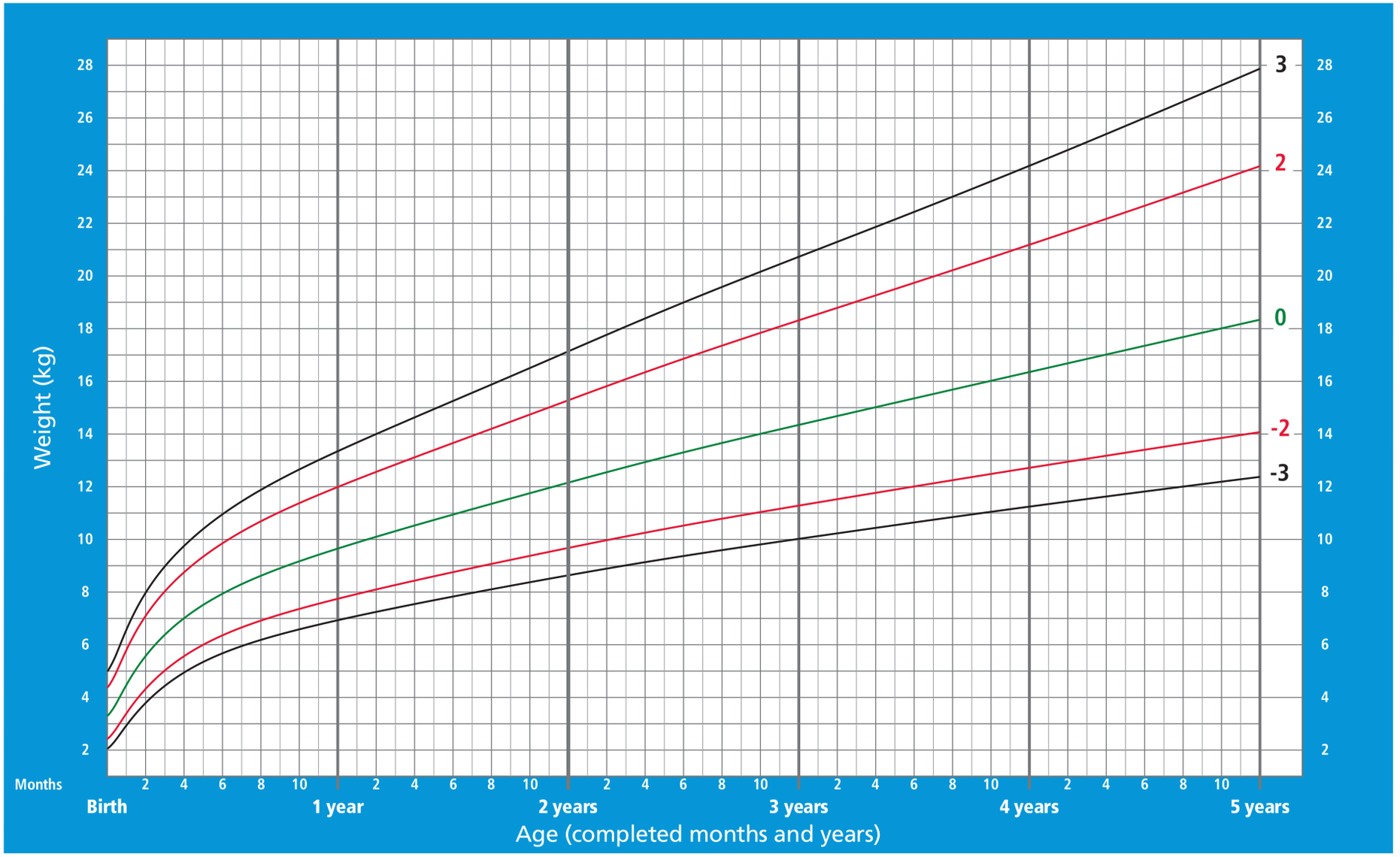
If *thrush or ulcers are the same or better*, and the infant is ***feeding well***, continue half-strength gentian violet for a total of 5 days.


WEIGHT FOR AGE GROWTH CHART
الوزن - كيلو جرام
العام الأول
العام الثانى
العام الثالث
العام الرابع
العام الخامس
العام السادس
السن بالشهور

Weight-for-age BOYS

Birth to 5 years (z-scores)

World Health Organization

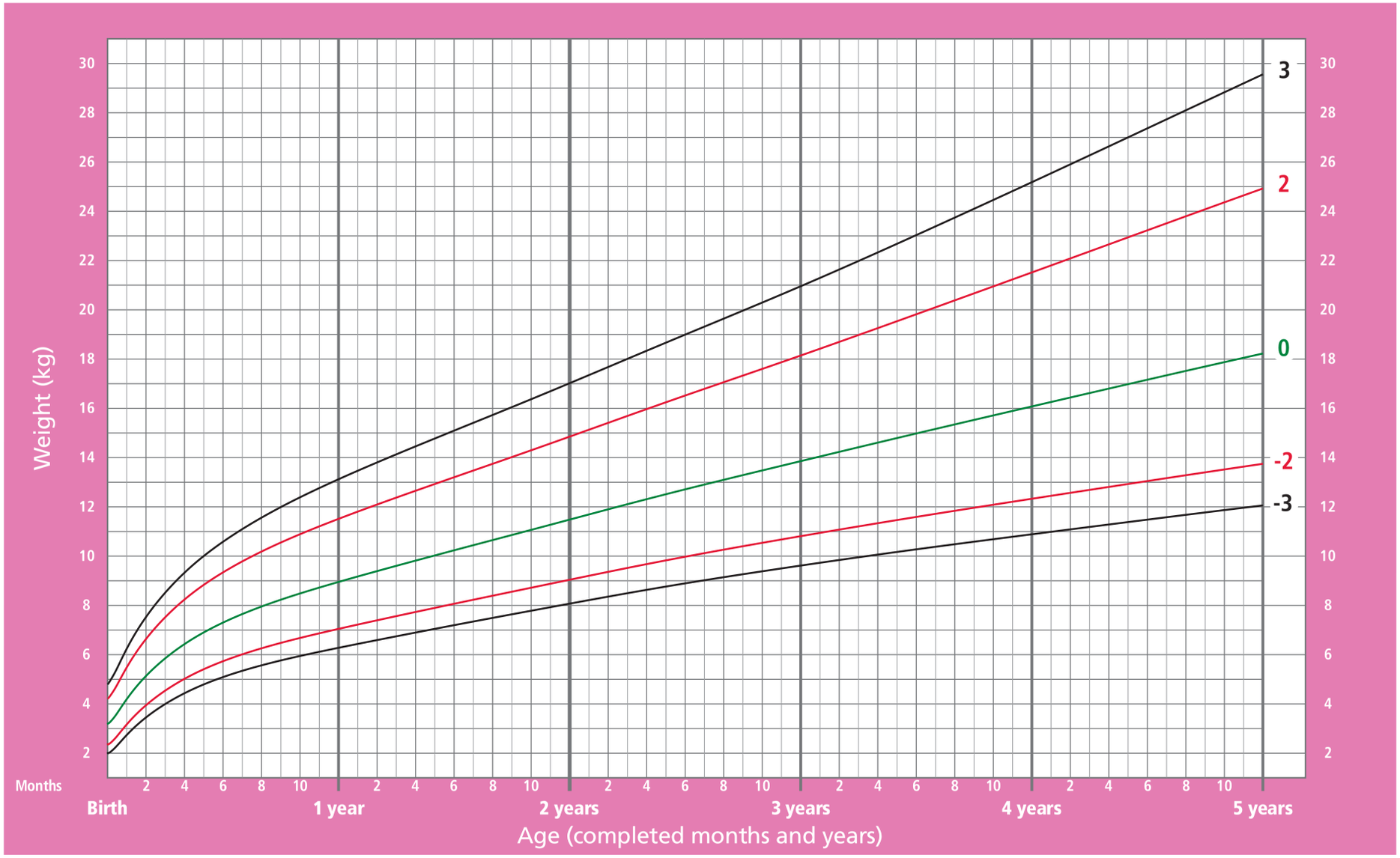


WHO Child Growth Standards

Weight-for-age GIRLS

Birth to 5 years (z-scores)

World Health Organization

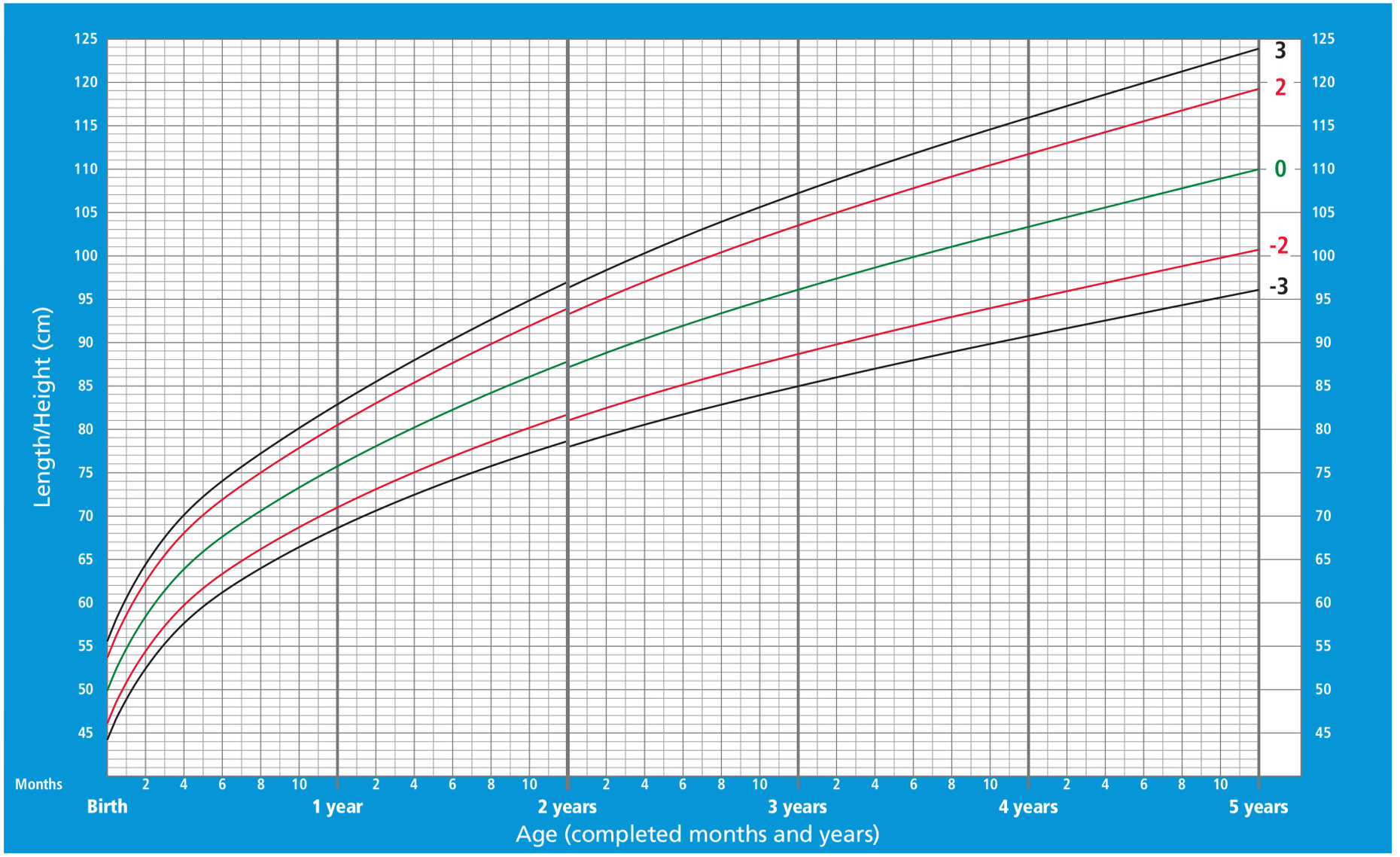


WHO Child Growth Standards

Length/height-for-age BOYS

Birth to 5 years (z-scores)

World Health Organization

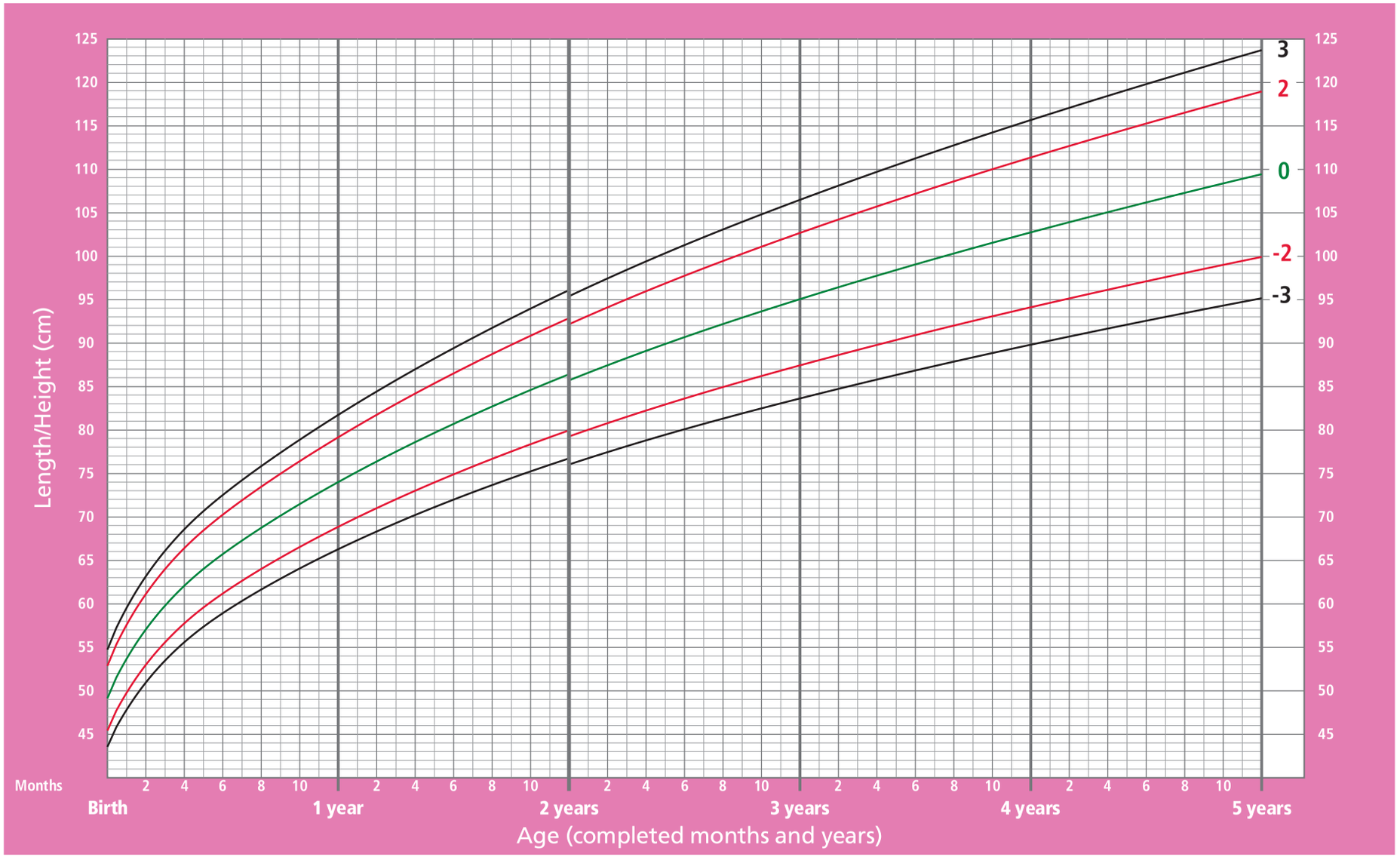


WHO Child Growth Standards

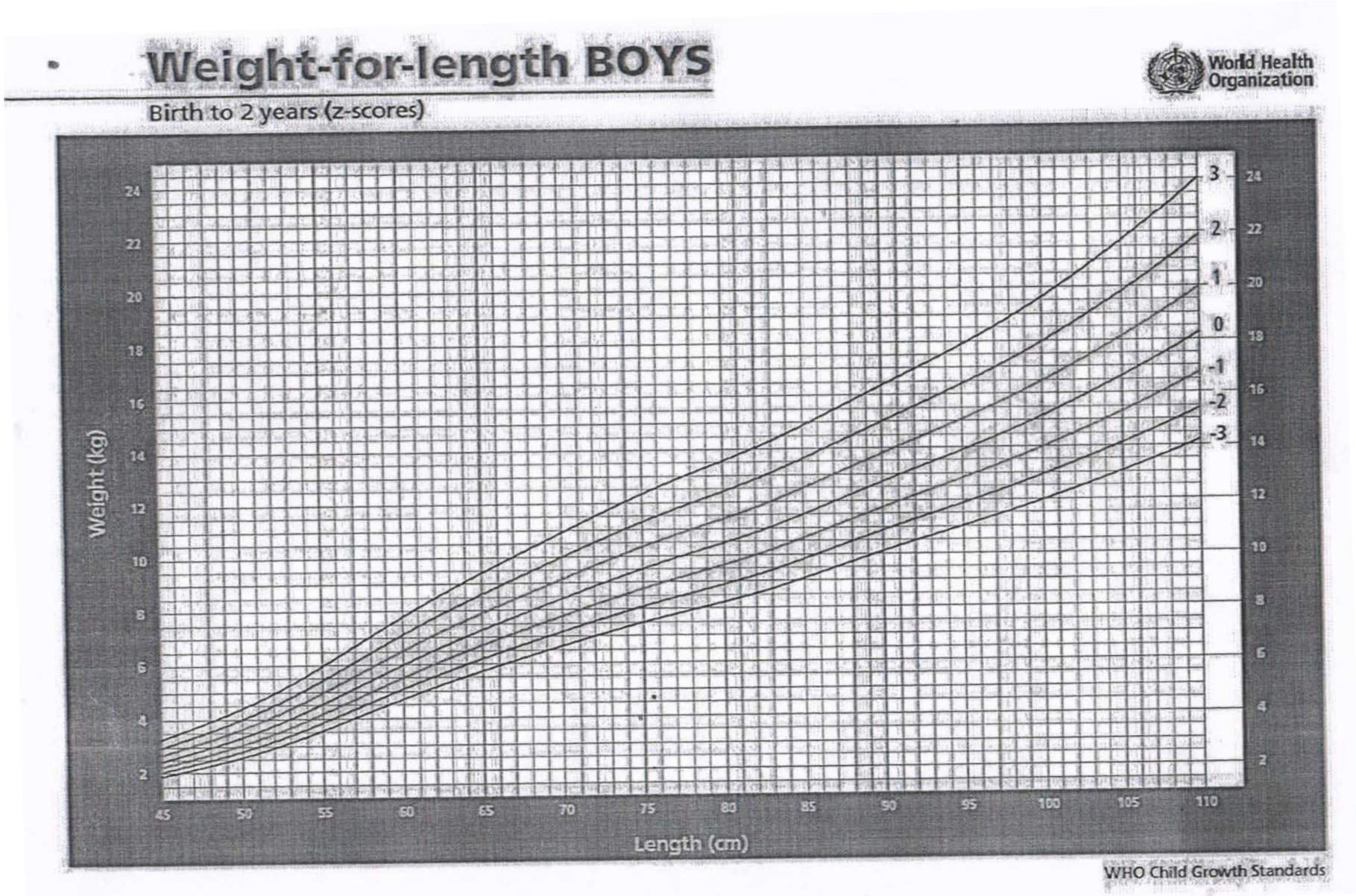
Length/height-for-age GIRLS

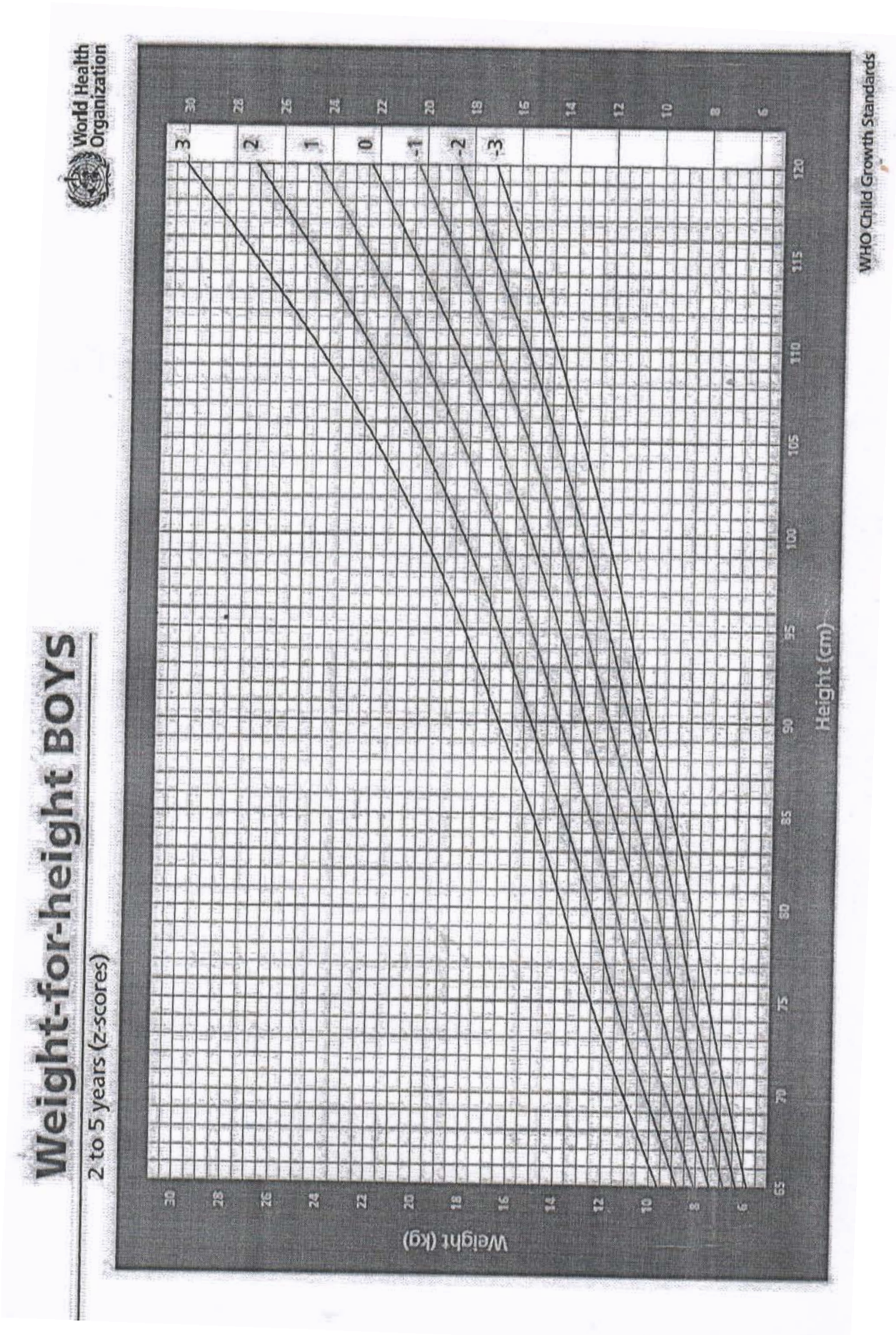
Birth to 5 years (z-scores)

World Health Organization



WHO Child Growth Standards

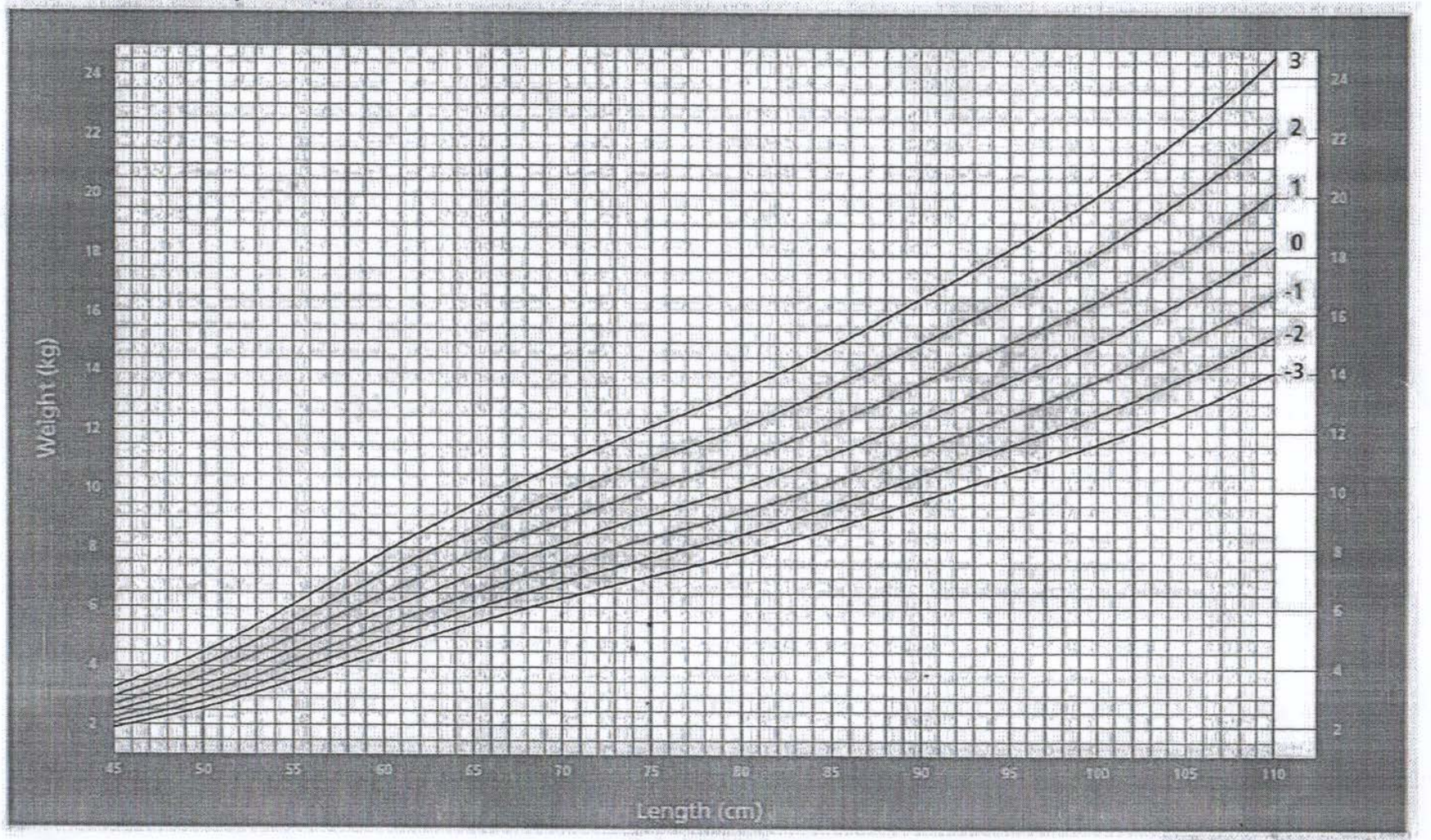

Weight-for-length BOYS
Birth to 2 years (z-scores)
World Health Organization
Weight (kg)
Length (cm)
3
2
1
0
-1
-2
-3
WHO Child Growth Standards


World Health Organization
Weight-for-height BOYS
2 to 5 years (z-scores)
Weight (kg)
Height (cm)
WHO Child Growth Standards

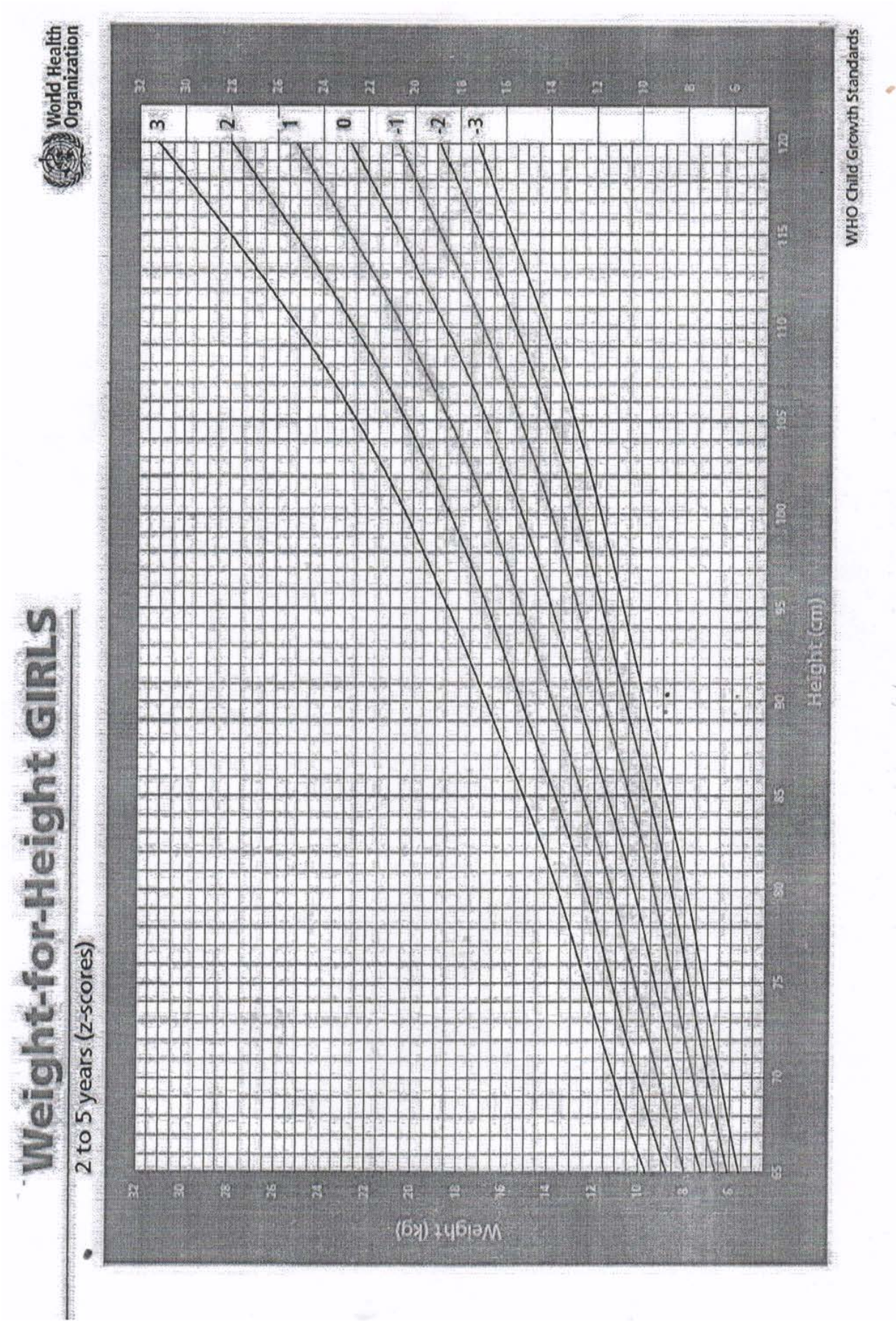
Weight-for-length GIRLS

Birth to 2 years (z-scores)

World Health Organization



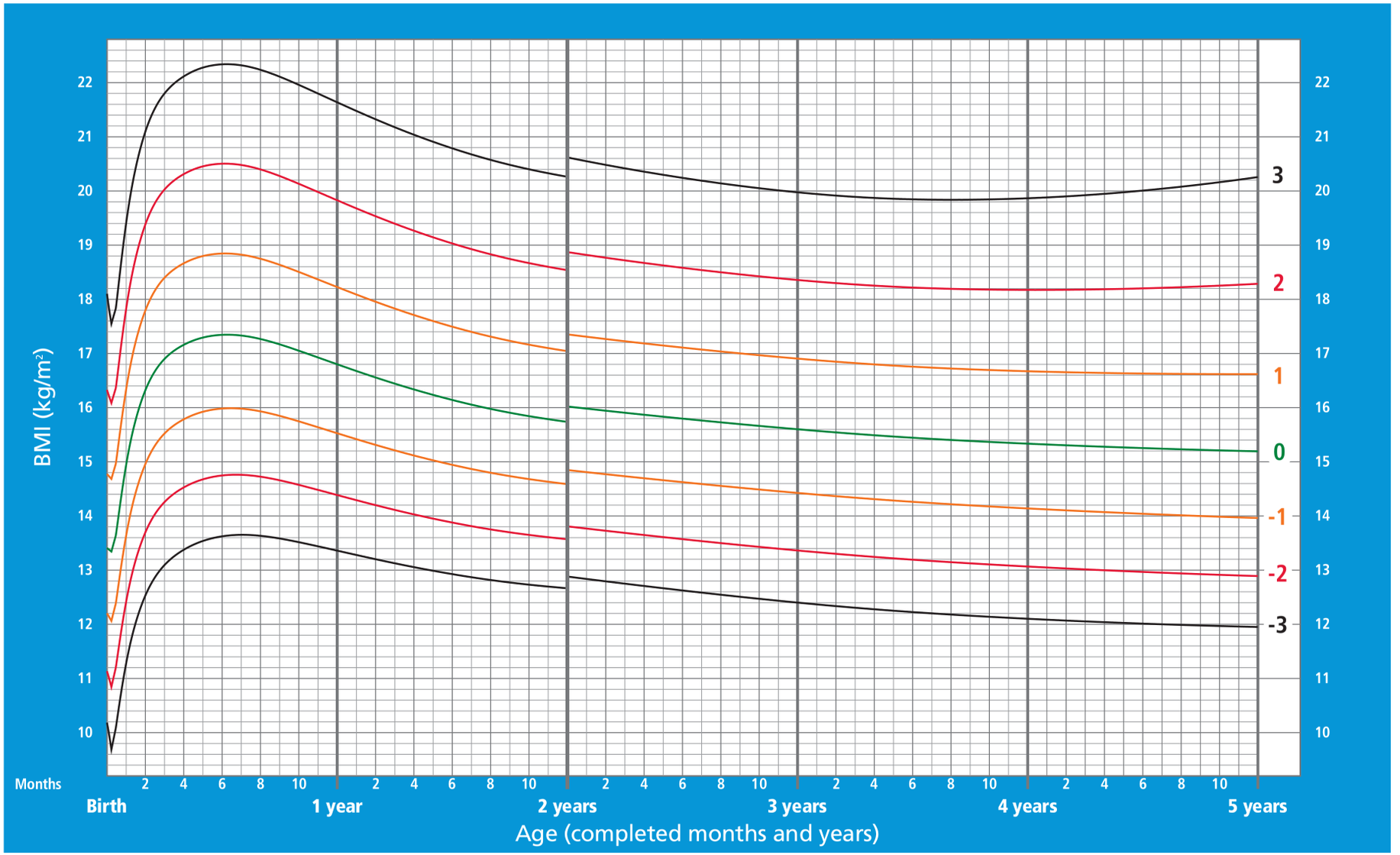
WHO Child Growth Standards


World Health Organization
Weight-for-Height GIRLS
2 to 5 years (z-scores)
Weight (kg)
Height (cm)
3
2
1
0
-1
-2
-3
WHO Child Growth Standards

BMI-for-age BOYS

Birth to 5 years (z-scores)

World Health Organization

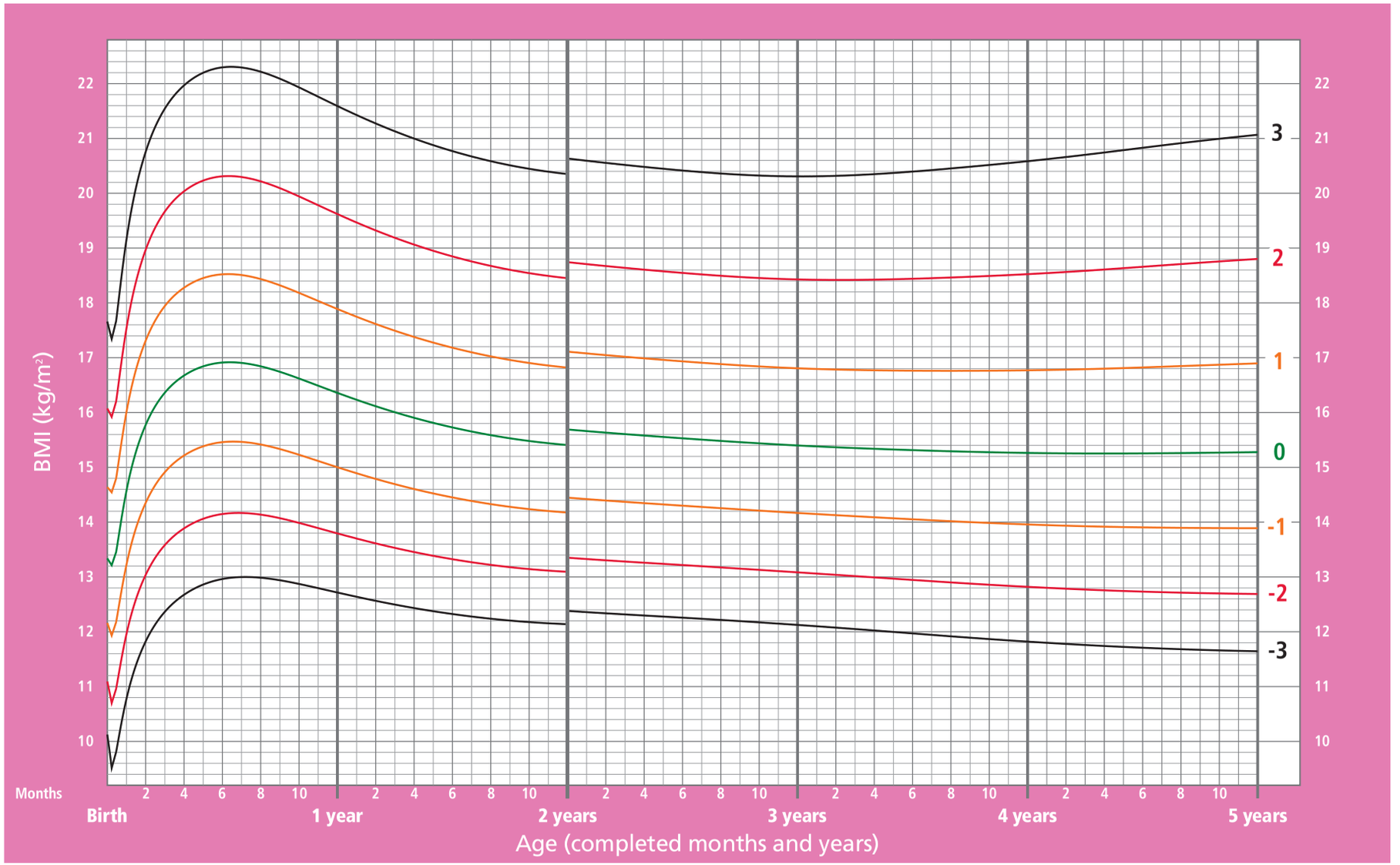


WHO Child Growth Standards

BMI-for-age GIRLS

Birth to 5 years (z-scores)

World Health Organization



WHO Child Growth Standards

L or H (cm)	Body Mass Index (BMI)																			L or H (cm)
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
84	5.6	6.4	7.1	7.8	8.5	9.2	9.9	10.6	11.3	12.0	12.7	13.4	14.1	14.8	15.5	16.2	16.9	17.6	18.3	84
85	5.8	6.5	7.2	7.9	8.7	9.4	10.1	10.8	11.6	12.3	13.0	13.7	14.5	15.2	15.9	16.6	17.3	18.1	18.8	85
86	5.9	6.7	7.4	8.1	8.9	9.6	10.4	11.1	11.8	12.6	13.3	14.1	14.8	15.5	16.3	17.0	17.8	18.5	19.2	86
87	6.1	6.8	7.6	8.3	9.1	9.8	10.6	11.4	12.1	12.9	13.6	14.4	15.1	15.9	16.7	17.4	18.2	18.9	19.7	87
88	6.2	7.0	7.7	8.5	9.3	10.1	10.8	11.6	12.4	13.2	13.9	14.7	15.5	16.3	17.0	17.8	18.6	19.4	20.1	88
89	6.3	7.1	7.9	8.7	9.5	10.3	11.1	11.9	12.7	13.5	14.3	15.0	15.8	16.6	17.4	18.2	19.0	19.8	20.6	89
90	6.5	7.3	8.1	8.9	9.7	10.5	11.3	12.2	13.0	13.8	14.6	15.4	16.2	17.0	17.8	18.6	19.4	20.3	21.1	90
91	6.6	7.5	8.3	9.1	9.9	10.8	11.6	12.4	13.2	14.1	14.9	15.7	16.6	17.4	18.2	19.0	19.9	20.7	21.5	91
92	6.8	7.6	8.5	9.3	10.2	11.0	11.8	12.7	13.5	14.4	15.2	16.1	16.9	17.8	18.6	19.5	20.3	21.2	22.0	92
93	6.9	7.8	8.6	9.5	10.4	11.2	12.1	13.0	13.8	14.7	15.6	16.4	17.3	18.2	19.0	19.9	20.8	21.6	22.5	93
94	7.1	8.0	8.8	9.7	10.6	11.5	12.4	13.3	14.1	15.0	15.9	16.8	17.7	18.6	19.4	20.3	21.2	22.1	23.0	94
95	7.2	8.1	9.0	9.9	10.8	11.7	12.6	13.5	14.4	15.3	16.2	17.1	18.1	19.0	19.9	20.8	21.7	22.6	23.5	95
96	7.4	8.3	9.2	10.1	11.1	12.0	12.9	13.8	14.7	15.7	16.6	17.5	18.4	19.4	20.3	21.2	22.1	23.0	24.0	96
97	7.5	8.5	9.4	10.3	11.3	12.2	13.2	14.1	15.1	16.0	16.9	17.9	18.8	19.8	20.7	21.6	22.6	23.5	24.5	97
98	7.7	8.6	9.6	10.6	11.5	12.5	13.4	14.4	15.4	16.3	17.3	18.2	19.2	20.2	21.1	22.1	23.0	24.0	25.0	98
99	7.8	8.8	9.8	10.8	11.8	12.7	13.7	14.7	15.7	16.7	17.6	18.6	19.6	20.6	21.6	22.5	23.5	24.5	25.5	99
100	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	100
101	8.2	9.2	10.2	11.2	12.2	13.3	14.3	15.3	16.3	17.3	18.4	19.4	20.4	21.4	22.4	23.5	24.5	25.5	26.5	101
102	8.3	9.4	10.4	11.4	12.5	13.5	14.6	15.6	16.6	17.7	18.7	19.8	20.8	21.8	22.9	23.9	25.0	26.0	27.1	102
103	8.5	9.5	10.6	11.7	12.7	13.8	14.9	15.9	17.0	18.0	19.1	20.2	21.2	22.3	23.3	24.4	25.5	26.5	27.6	103
104	8.7	9.7	10.8	11.9	13.0	14.1	15.1	16.2	17.3	18.4	19.5	20.6	21.6	22.7	23.8	24.9	26.0	27.0	28.1	104
105	8.8	9.9	11.0	12.1	13.2	14.3	15.4	16.5	17.6	18.7	19.8	20.9	22.1	23.2	24.3	25.4	26.5	27.6	28.7	105
106	9.0	10.1	11.2	12.4	13.5	14.6	15.7	16.9	18.0	19.1	20.2	21.3	22.5	23.6	24.7	25.8	27.0	28.1	29.2	106
107	9.2	10.3	11.4	12.6	13.7	14.9	16.0	17.2	18.3	19.5	20.6	21.8	22.9	24.0	25.2	26.3	27.5	28.6	29.8	107
108	9.3	10.5	11.7	12.8	14.0	15.2	16.3	17.5	18.7	19.8	21.0	22.2	23.3	24.5	25.7	26.8	28.0	29.2	30.3	108
109	9.5	10.7	11.9	13.1	14.3	15.4	16.6	17.8	19.0	20.2	21.4	22.6	23.8	25.0	26.1	27.3	28.5	29.7	30.9	109
110	9.7	10.9	12.1	13.3	14.5	15.7	16.9	18.2	19.4	20.6	21.8	23.0	24.2	25.4	26.6	27.8	29.0	30.3	31.5	110
111	9.9	11.1	12.3	13.6	14.8	16.0	17.2	18.5	19.7	20.9	22.2	23.4	24.6	25.9	27.1	28.3	29.6	30.8	32.0	111
112	10.0	11.3	12.5	13.8	15.1	16.3	17.6	18.8	20.1	21.3	22.6	23.8	25.1	26.3	27.6	28.9	30.1	31.4	32.6	112
113	10.2	11.5	12.8	14.0	15.3	16.6	17.9	19.2	20.4	21.7	23.0	24.3	25.5	26.8	28.1	29.4	30.6	31.9	33.2	113
114	10.4	11.7	13.0	14.3	15.6	16.9	18.2	19.5	20.8	22.1	23.4	24.7	26.0	27.3	28.6	29.9	31.2	32.5	33.8	114
115	10.6	11.9	13.2	14.5	15.9	17.2	18.5	19.8	21.2	22.5	23.8	25.1	26.5	27.8	29.1	30.4	31.7	33.1	34.4	115
116	10.8	12.1	13.5	14.8	16.1	17.5	18.8	20.2	21.5	22.9	24.2	25.6	26.9	28.3	29.6	30.9	32.3	33.6	35.0	116
117	11.0	12.3	13.7	15.1	16.4	17.8	19.2	20.5	21.9	23.3	24.6	26.0	27.4	28.7	30.1	31.5	32.9	34.2	35.6	117
118	11.1	12.5	13.9	15.3	16.7	18.1	19.5	20.9	22.3	23.7	25.1	26.5	27.8	29.2	30.6	32.0	33.4	34.8	36.2	118
119	11.3	12.7	14.2	15.6	17.0	18.4	19.8	21.2	22.7	24.1	25.5	26.9	28.3	29.7	31.2	32.6	34.0	35.4	36.8	119
120	11.5	13.0	14.4	15.8	17.3	18.7	20.2	21.6	23.0	24.5	25.9	27.4	28.8	30.2	31.7	33.1	34.6	36.0	37.4	120
121	11.7	13.2	14.6	16.1	17.6	19.0	20.5	22.0	23.4	24.9	26.4	27.8	29.3	30.7	32.2	33.7	35.1	36.6	38.1	121
122	11.9	13.4	14.9	16.4	17.9	19.3	20.8	22.3	23.8	25.3	26.8	28.3	29.8	31.3	32.7	34.2	35.7	37.2	38.7	122
123	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.3	31.8	33.3	34.8	36.3	37.8	39.3	123
124	12.3	13.8	15.4	16.9	18.5	20.0	21.5	23.1	24.6	26.1	27.7	29.2	30.8	32.3	33.8	35.4	36.9	38.4	40.0	124
125	12.5	14.1	15.6	17.2	18.8	20.3	21.9	23.4	25.0	26.6	28.1	29.7	31.3	32.8	34.4	35.9	37.5	39.1	40.6	125
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	

L or H (cm)	Body Mass Index (BMI)																			L or H (cm)
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
42	1.4	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.8	3.0	3.2	3.4	3.5	3.7	3.9	4.1	4.2	4.4	4.6	42
43	1.5	1.7	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.4	4.6	4.8	43
44	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.6	4.8	5.0	44
45	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.1	4.3	4.5	4.7	4.9	5.1	5.3	45
46	1.7	1.9	2.1	2.3	2.5	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.7	4.9	5.1	5.3	5.5	46
47	1.8	2.0	2.2	2.4	2.7	2.9	3.1	3.3	3.5	3.8	4.0	4.2	4.4	4.6	4.9	5.1	5.3	5.5	5.7	47
48	1.8	2.1	2.3	2.5	2.8	3.0	3.2	3.5	3.7	3.9	4.1	4.4	4.6	4.8	5.1	5.3	5.5	5.8	6.0	48
49	1.9	2.2	2.4	2.6	2.9	3.1	3.4	3.6	3.8	4.1	4.3	4.6	4.8	5.0	5.3	5.5	5.8	6.0	6.2	49
50	2.0	2.3	2.5	2.8	3.0	3.3	3.5	3.8	4.0	4.3	4.5	4.8	5.0	5.3	5.5	5.8	6.0	6.3	6.5	50
51	2.1	2.3	2.6	2.9	3.1	3.4	3.6	3.9	4.2	4.4	4.7	4.9	5.2	5.5	5.7	6.0	6.2	6.5	6.8	51
52	2.2	2.4	2.7	3.0	3.2	3.5	3.8	4.1	4.3	4.6	4.9	5.1	5.4	5.7	5.9	6.2	6.5	6.8	7.0	52
53	2.2	2.5	2.8	3.1	3.4	3.7	3.9	4.2	4.5	4.8	5.1	5.3	5.6	5.9	6.2	6.5	6.7	7.0	7.3	53
54	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.4	4.7	5.0	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6	54
55	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.1	6.4	6.7	7.0	7.3	7.6	7.9	55
56	2.5	2.8	3.1	3.4	3.8	4.1	4.4	4.7	5.0	5.3	5.6	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.2	56
57	2.6	2.9	3.2	3.6	3.9	4.2	4.5	4.9	5.2	5.5	5.8	6.2	6.5	6.8	7.1	7.5	7.8	8.1	8.4	57
58	2.7	3.0	3.4	3.7	4.0	4.4	4.7	5.0	5.4	5.7	6.1	6.4	6.7	7.1	7.4	7.7	8.1	8.4	8.7	58
59	2.8	3.1	3.5	3.8	4.2	4.5	4.9	5.2	5.6	5.9	6.3	6.6	7.0	7.3	7.7	8.0	8.4	8.7	9.1	59
60	2.9	3.2	3.6	4.0	4.3	4.7	5.0	5.4	5.8	6.1	6.5	6.8	7.2	7.6	7.9	8.3	8.6	9.0	9.4	60
61	3.0	3.3	3.7	4.1	4.5	4.8	5.2	5.6	6.0	6.3	6.7	7.1	7.4	7.8	8.2	8.6	8.9	9.3	9.7	61
62	3.1	3.5	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.5	6.9	7.3	7.7	8.1	8.5	8.8	9.2	9.6	10.0	62
63	3.2	3.6	4.0	4.4	4.8	5.2	5.6	6.0	6.4	6.7	7.1	7.5	7.9	8.3	8.7	9.1	9.5	9.9	10.3	63
64	3.3	3.7	4.1	4.5	4.9	5.3	5.7	6.1	6.6	7.0	7.4	7.8	8.2	8.6	9.0	9.4	9.8	10.2	10.6	64
65	3.4	3.8	4.2	4.6	5.1	5.5	5.9	6.3	6.8	7.2	7.6	8.0	8.5	8.9	9.3	9.7	10.1	10.6	11.0	65
66	3.5	3.9	4.4	4.8	5.2	5.7	6.1	6.5	7.0	7.4	7.8	8.3	8.7	9.1	9.6	10.0	10.5	10.9	11.3	66
67	3.6	4.0	4.5	4.9	5.4	5.8	6.3	6.7	7.2	7.6	8.1	8.5	9.0	9.4	9.9	10.3	10.8	11.2	11.7	67
68	3.7	4.2	4.6	5.1	5.5	6.0	6.5	6.9	7.4	7.9	8.3	8.8	9.2	9.7	10.2	10.6	11.1	11.6	12.0	68
69	3.8	4.3	4.8	5.2	5.7	6.2	6.7	7.1	7.6	8.1	8.6	9.0	9.5	10.0	10.5	11.0	11.4	11.9	12.4	69
70	3.9	4.4	4.9	5.4	5.9	6.4	6.9	7.4	7.8	8.3	8.8	9.3	9.8	10.3	10.8	11.3	11.8	12.3	12.7	70
71	4.0	4.5	5.0	5.5	6.0	6.6	7.1	7.6	8.1	8.6	9.1	9.6	10.1	10.6	11.1	11.6	12.1	12.6	13.1	71
72	4.1	4.7	5.2	5.7	6.2	6.7	7.3	7.8	8.3	8.8	9.3	9.8	10.4	10.9	11.4	11.9	12.4	13.0	13.5	72
73	4.3	4.8	5.3	5.9	6.4	6.9	7.5	8.0	8.5	9.1	9.6	10.1	10.7	11.2	11.7	12.3	12.8	13.3	13.9	73
74	4.4	4.9	5.5	6.0	6.6	7.1	7.7	8.2	8.8	9.3	9.9	10.4	11.0	11.5	12.0	12.6	13.1	13.7	14.2	74
75	4.5	5.1	5.6	6.2	6.8	7.3	7.9	8.4	9.0	9.6	10.1	10.7	11.3	11.8	12.4	12.9	13.5	14.1	14.6	75
76	4.6	5.2	5.8	6.4	6.9	7.5	8.1	8.7	9.2	9.8	10.4	11.0	11.6	12.1	12.7	13.3	13.9	14.4	15.0	76
77	4.7	5.3	5.9	6.5	7.1	7.7	8.3	8.9	9.5	10.1	10.7	11.3	11.9	12.5	13.0	13.6	14.2	14.8	15.4	77
78	4.9	5.5	6.1	6.7	7.3	7.9	8.5	9.1	9.7	10.3	11.0	11.6	12.2	12.8	13.4	14.0	14.6	15.2	15.8	78
79	5.0	5.6	6.2	6.9	7.5	8.1	8.7	9.4	10.0	10.6	11.2	11.9	12.5	13.1	13.7	14.4	15.0	15.6	16.2	79
80	5.1	5.8	6.4	7.0	7.7	8.3	9.0	9.6	10.2	10.9	11.5	12.2	12.8	13.4	14.1	14.7	15.4	16.0	16.6	80
81	5.2	5.9	6.6	7.2	7.9	8.5	9.2	9.8	10.5	11.2	11.8	12.5	13.1	13.8	14.4	15.1	15.7	16.4	17.1	81
82	5.4	6.1	6.7	7.4	8.1	8.7	9.4	10.1	10.8	11.4	12.1	12.8	13.4	14.1	14.8	15.5	16.1	16.8	17.5	82
83	5.5	6.2	6.9	7.6	8.3	9.0	9.6	10.3	11.0	11.7	12.4	13.1	13.8	14.5	15.2	15.8	16.5	17.2	17.9	83
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	

Growth Problems

Compare the points plotted on the child's growth charts with the z- score lines to determine whether they indicate a growth problem. Measurements in the shaded boxes are in the normal range.

z-score	Growth indicators		
	Length/Height-for age	**Weight-for – age**	**BMI- for- age**
Above 3	See note 1	See note 2	Obese
Above 2			Overweight
Above 1			Possible risk of overweight (see note 3)
0(median)			
Below-1			
Below -2	Stunted (see note 4)	Underweight	Wasted
Below-3	Severely Stunted (see note 4)	Severely Underweight (see note 5)	Severely Wasted

Notes:

1. A child in this range is very tall. Tallness is rarely a problem, unless it is so excessive that it may indicate an endocrine disorder such as a growth-hormone-producing tumor. Refer a child in this range for assessment if you suspect an endocrine disorder (e.g. if parents of normal height have a child who is excessively tall for his or her age).

2. A child whose weight –for age falls in this range may have a growth problem, but this is better assessed from BMI-for age.

3. A plotted point "Above 1" shows possible risk. Of overweight A trend towards the 2z-score line shows definite risk.

4. It is possible for a stunted or severely stunted child to become overweight.

5. This is referred to as very low weight in IMCI training modules. (Integrated Management of childhood illness, in-service training. WHO, Geneva, 1997)

Guideline Development Group Acknowledgements

1 – Cairo University Consultancy group :

Professor Dr. Laila Kamel	Professor of Public Health& Community Medicine Cairo University, Faculty of Medicine
Professor Dr. Nagwa Eid	Professor of Internal Medicine , Cairo University, Faculty of Medicine
Professor Dr. Salma Dawara	Professor of General Surgery Cairo University, Faculty of Medicine
Dr. Abeer Barakat	Lecturer of Public Health Cairo University, Faculty of Medicine

2- Sector of Technical Support and Project Technical Working &Supervisory Group :

Dr. Emam Moussa	Head of the Central Administration of the Technical Support and Project & Group Leader
Dr. Soad Abdel Megid	Guideline Developer & Groups Coordinator
Dr. Osama Abdel Azim	Technical Advisor

3- Additional Support and First Draft Revision:

MOHP Level

All 1st Undersecretary , and Undersecretary of the MOHP Sectors and Central Administrations are involved in revising the Document

Medical University Staff and Institutions	
Professor Dr. Mahmoud Serry	Professor of Chest , Ein Shams University
Professor Dr. Omima El Gebally	Professor of Family Med , Assiut University
Professor Dr. Fathy Maklady	Professor of Family Med & General Medicine , Canal El Suez University
Professor Dr. Esmat Shiba	Professor of Family Med & General Medicine , Cairo University
Professor Dr. Hesham Zaher	Professor of Dermatology , Cairo University
Professor Dr. Ezz El Dine Osman	Professor of OB/Gyn , Cairo University
Professor Dr. Tarek Kamel	Professor of ENT , Cairo University

Professor Dr. Magda Badawy	Professor of Pediatric , Cairo University
Professor Dr. Tagrieed Farahatt	Professor & Head Department of Family medicine , Monofiya University
Professor Dr. Sawsan Fahmy	Professor of Public Health , Alex , High Institute of Public Health
Professor Dr. Osman Ziko	Professor of Ophthalmology , Ein Shams University
Professor Dr. Amr El Noury	Consultant of Clinical Guideline MOHP General Hospital

4- Revision of Pharmaceutical Sections :

Professor Dr. Hider Galeb	Professor of Pharmacology , Cairo University
Professor Dr. Abdel Rahman El Nagar	Professor of Clinical Pharmacology , Faculty of Medicine ,Cairo University
Professor Dr. Aza Monier Agha	Professor of Pharmacology, Faculty of Pharmacy, Cairo University
Professor Dr. Faten Abdel Fatah	Professor of Clinical Lab " Institute of Pharmaceutical Monitoring"
Dr. Mohamed Awad	Lecturar of Pharmacology , Faculty of Pharmacy, Helwan University
Dr. Alla Mokhtar	Director of HSRP Pharmaceutical Program
Dr. Gebriel Ali	MOHP, Information Center , Central Administration of pharmacy
Dr. Mostafa Sleim	Pharmaceuticals Consultant at MOHP

5- Revision By High Committee of Egyptian Board of Family Medicine

Professor Dr. Gabr Metwally	Professor of Public Health Al Azher Unversity for boys
Professor Dr. Mohamed Fargally	Professor of Public Health Al Azher Unversity for boys
Professor Dr. Adel Fouda	Professor of Public Health Zagazig University

6- Family Physician Participating in the Review of the First Draft and Field testing of the Document at Governorate levels:

Governorate level "Sohag"	
Dr. Mazher Attia Ahmed	El Shik Shebl , FHU
Dr. Gerges Khalil Krns	El Gazazra FHU
Dr. Emad Latif Metiass	El Shik Yosef FHU
Dr. Komyl Wdiee Danial	Bahta FHU
Dr. Kadry Mohamed Attia	Erabat Abu Ezize FHU
Dr. Emad Naeeim Loka	Bahatyl El Gizira FHU
Dr. Hala Samuaeil Fares	TST Quality Specialest
Dr. Frag Ahmed Mahmoud	TST Primary Health Care Director
Governorate level " Qena"	
Dr. Nahla Shikoon	El Mkrbya FHU
Dr. Nesreen Abu El Abass Elian	El Hragia FHU
Dr. Eiman Mohamed Mahfouz	Gzyra Motira FHU
Dr. Mona Fakhry Ali	El Hogirat FHU
Dr. Mohamed Mohamed Ashour	El Homer Wal Gaafraa FHU
Dr. Mostafa Glal Osman	El Tob FHU
Dr. Ahmed Saad Ahmed	TST Coordinator
Dr. Mamdouh Abuel Kasem	TST
Governorate level " Monoffya"	
Dr. Tamer Farag Ali	Mastay FHU
Dr. Alaa El Dine Abdel Razek	Ashliem FHU
Dr. Sherif Mosaad Labib	El Remally FHU
Dr. Asmaa Mahmoud El Sayed	Shobra Bakhom FHU
Dr. Waleid Mohamed Rashad	Meit Bara FHU
Dr. Nahed Sobhy Mahmoud	Tymor FHU
Dr. Gehad Ibrahim Mohamed	TST

Governorate level " Alexandria"	
Dr. Naira Niazy	Alexandria Central Coordinator
Dr. Nagwa Mostafa Abuel Nazar	El Gomrok FHU
Dr. Ghada Mohamed Abdel Allah	El Gomrok FHU
Dr. Marian Nashaat	El Manshia2
Dr. Ihab Zaky Iraheeim	El Laban1 FHU
Dr. Riham Sabry	El Laban1 FHU
Dr. Nadia Khaliel Fahmy	El Laban2 FHU
Dr. Anas Mohamed Helal	TST
Dr. Maha Mogib Haseib	TST
Dr. Nader Faik Fatoh	TST
Governorate level "Suez"	
Dr. Zein El Abedein Abdel Motelb	El Safaa FHU
Dr. Saher Mahmoud Hussien	El Amal FHU
Dr. Amany Keshk	El Sweiz1 FHU
Dr. Mervet Gharieeb	El Mothalath FHU
Dr. Suzan Gamiel	24 October FHU
Dr. Hany Anter	El Mashroo FHU
Dr. Nadia Mohamed Esmaeil	TST
Dr. Magda Ahmed Mohamed	TST Coordinator