Sri Lakshmi Narayana Institute of Medical Sciences

Date:05.06.2020

From

Dr. Tiroumourougane Serane
Professor and Head,
Department of Paediatrics,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

To

The Dean,
Sri Lakshmi Narayana Institute of Medical College
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: Paediatic nutrition Module for Undergraduate students.

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: Paediatric Nutrition for II year MBBS students from July 2020- Oct 2020. Requesting your kind permission for the same.

Kind Regards

Dr. Tiroumourougane Serane

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: **Dr. Rajasekar**

The HOD: **Dr. Tiroumourougane Serane**

The Expert: **Dr. Abhijeet Shrivastava**

The committee has discussed about the course and is approved.

Prof. S. RAJASEKARAN, M.S., (Gen.)
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Post, Pondicherry-605 502.

Dean

PAEDIATRICS HEAD
DEPT. OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
OSUDU, PUDUCHERRY

HOD

ASSISTANT PROFESSOR
DEPARTMENT OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES

OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Circular

15.06.2020

Sub: Organising Value-added Course: Pediatric Nutrition Module for Undergraduate students reg.,

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing **Pediatric Nutrition Module** for Undergraduate students. July – October 2020 (3 months)

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before 30 June 2020. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

Encl: Copy of Course content

Prof. S. RAJASEKARAN, M.S., (Gen.)
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Post, Pondicherry-605 502.

Annexure 2 – Course Proposal

Course Title: DEVELOPMENTAL PAEDIATRICS

Course Objective: Developmental Paediatrics

Course Outcome: Developmental evaluation and assessment

Course Audience: II year MBBS Students

Course Coordinator: Dr. Abijeeth Shrivastava

Course Faculties with Qualification and Designation:

Dr. Tiroumourougane Serane – HOD, Department of paediatrics
Dr. Abijeeth – DNB Paediatrics – Assistant professor

Course Curriculum/Topics with schedule (Min of 30 hours)

S	DATE	TOPIC	COORDINATOR	TIM	HO
1	20/10/20	Laws of development	Dr.Tiroumourou	2pm	3
2	21/10/20	Neonatal	Dr. Abijeeth	2pm	3

3	**24/10/20**	**Motordevelop**		**2pm**	**3**
4	**25/10/20**	**Finemotordeve**	**Dr. Abijeeth**	**2pm**	**3**
5	**26/10/20**	**Language and development**	**Dr. Abijeeth**	**2pm**	**3hrs**
6	**27/10/20**	**Vision and assessment**	**Dr.Tiroumourou**	**2pm**	**3**

7	**28/10/20**	**History**	**Dr.Tiroumourou**	**2pm**	**3**
8	**29/10/20**	**360**	**Dr. Abijeeth**	**2pm**	**3**
9	**1/10/20**	**Developmental**	**Dr. Abijeeth**	**2pm**	**3hrs**
10	**2/10/20**	**Upper age**	**Dr. Abijeeth**	**2pm**	**3hrs**

		attainment			
				Tota	**30**

REFERENCE BOOKS: (Minimum 2)

Nelson Textbook of pediatrics 20 E

Illingworth Developmental Pediatrics

VALUE ADDED COURSE

1. **Name of the programme & Code**

   Paediatric nutrition , PECO1

2. **Duration & Period**

   30 hrs , July 2020-Oct 2020

3. **Information Brochure and Course Content of Value Added Courses**

   Enclosed as Annexure- I

4. **List of students enrolled**

   Enclosed as Annexure- II

5. **Assessment procedures:**

   Multiple choice questions- *Enclosed as Annexure- III*

6. **Certificate model**

   Enclosed as Annexure- IV

7. **No. of times offered during the same year**:

   One

8. **Summary report of each program year-wise**

Value Added Course-					
Sl. No	**Course Code**	**Course Name**	**Resource Persons**	**Target Students**	**Strength & Year**
1	PECO1	Paediatric nutrition	**Dr.Abijeeth**	II MBBS	20 students ,2020

9. **Course Feed Back**

   Enclosed as Annexure- V

Dr. Abhijeet Shrivastava
RESOURCE PERSON

ASSISTANT PROFESSOR
DEPARTMENT OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES

Dr. Tiroumourougane Serane
COORDINATOR

PAEDIATRICS HEAD
DEPT. OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
OSUDU, PUDUCHERRY

NUTRITION & NUTRITIONAL ASSESSMENT


TheFeltSource.com
Have Fun
Eat Right
Exercise
OATMEAL
whole grain cereal
RICE
YOGURT
PEANUT BUTTER
TUNA
Grains
Make half your grains whole
Vegetables
Vary your veggies
Fruits
Focus on fruits
Milk
Get your calcium-rich foods
Meat & Beans
Go lean with protein
For an 1,800-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov
Eat 6 oz. every day; at least half should be whole grain
Eat 2 1/2 cups every day
Eat 1 1/2 cups every day
Get 3 cups every day; for kids ages 2 to 8, it's 2 cups
Eat 5 oz. every day
Oil
Oils are not a food group, but you need some for good health. Get your oils from fish, nuts and liquid oils such as corn oil, soybean oil and canola oil.
Find your balance between food and play
Fats and sugars - know your limits

COURSE DETAILS

Particulars	**Description**
Course Title	Pediatric nutrition
Course Code	PECO1
Objective	1. Food pyramid 2. Importance of nutrition 3. Nutrition assessment 4. Anthropometry 5. ICMR guidelines 6. Calories and protein value 7. Protein energy malnutrition 8. Severe acute malnutrition

Further learning opportunities	**Nutrient deficiency , trace elements and mineral deficiency**
Key Competencies	On successful completion of the course the students will have skill in understanding the importance of nutrition and idea on nutrient rich food
Target Student	II MBBS Students
Duration	30hrs
Theory Session	0hrs
Practical Session	30 hours
Assessment Procedure	Multiple choice questions

NUTRITION- DEFINITIONS
NATIONAL NUTRITION WEEK – 1ST – 7TH SEPTEMBER

- **Nutrition**: The process by which the organism utilizes food.
- **IYCN:** infant & Young Child Nutrition
- Special emphasis on **1st 1000 Days of Life** (prenatal to 2yrs/minus 9 to plus 24 months)
- **Weaning/Complementary Feeding**: The systematic process of introduction of suitable food at the right time in addition to mother's milk in order to provide needed nutrients to the baby (UNICEF 1984).

FOOD ITEMS & FOOD GROUPS

- Cereals, Pulses (legumes), Vegetables, fruits, Milk & milk products, Meat group & Fish, Sugar, Oils & Fats
- **Energy yielding**: Carbohydrates, Fats & Oils
- **Body building**: Protein
- **Protective foods**: Vitamins & Minerals
- **Micronutrients**: those required in small quantities; mg/mcg

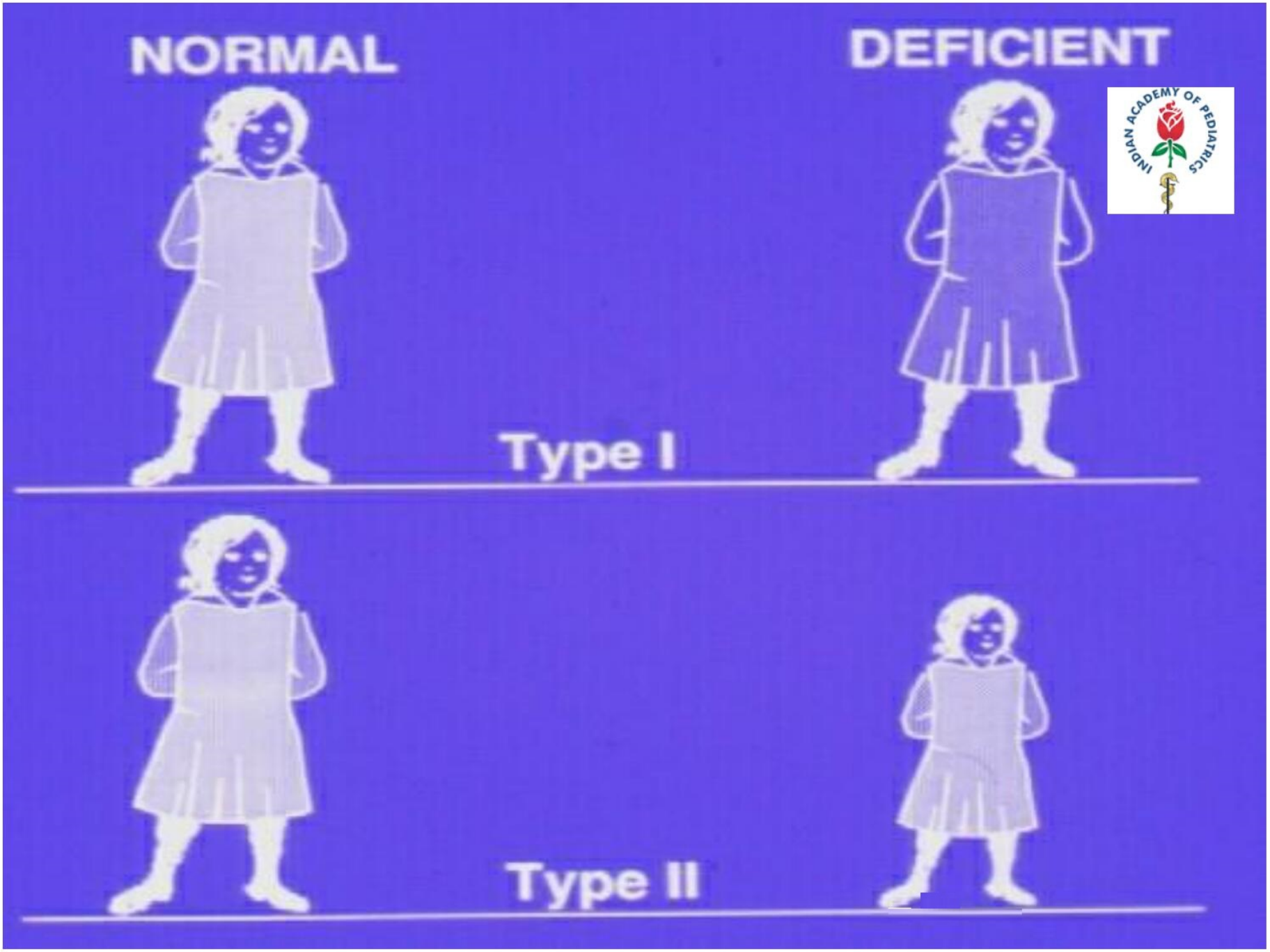
FOOD ITEMS & FOOD GROUPS CONTD…

- **Trace Elements**: present/required in trace quantities: <0.01% body weight
- **Balanced Diet**: Optimum quantity of all food groups and food items needed for physical activity, growth & development, repair or worn out/ageing tissues and maintenance of body functions.

NEW FOOD GUIDEPYRAMID

TYPE I AND TYPE II NUTRIENTS

- Over 40 nutrients are essential to health
- If any one is deficient then the person will not be healthy and resist disease
- Many are ignored by practitioners and their deficiency is not recognized
- They are divided into two groups in terms of the response to a deficiency


NORMAL
DEFICIENT
INDIAN ACADEMY OF PEDIATRICS
Type I
Type II

Type 1

- iron
- iodine
- copper
- calcium
- selenium
- thiamin
- riboflavin
- pyridoxine
- niacin
- folate
- cobalamin
- vitamin A, D, E, K

Type 2

- nitrogen
- essential amino acids
- potassium
- magnesium
- phosphorus
- sulphur
- zinc
- sodium
- chloride

Type 1

Functional nutrients

- has a body store
- reduces in concentration with deficiency
- Specific signs of deficiency
- Growth failure not a feature
- variable in breast milk

Type 2

Growth nutrients

- has no body store
- stable tissue concentration
- no specific signs of deficiency
- Growth failure the dominant feature
- stable in breast milk

ENERGY

- **Unit of Energy**: 1 kilocalorie (kcal./Cal.)
- Heat required to raise temperature of 1 kg of water from 14.5 to 15.5^{o}C.
- Unit in international system: Joule
- (1 cal.= 4.184 joule)

CARBOHYDRATES: 1 G = 4 KCAL.

- Provide energy, taste, preserve foods
- Types: Starch, sugars
  - Monosaccharides: glucose
  - Disaccharides: sucrose, lactose, fructose
  - Complex: Maltodexrins, Polysaccharides, glycogen
- Glucose*
  - Fuel for brain and muscle
  - Converted to glycogen, stored in liver & muscles
  - * Heart & RBCs use only glucose or energy
- 55 – 60% of total calories

FIBER- UNABSORBABLE CARBOHYDRATES

- Constituent of plant cell wall: **cellulose, pectins, gums, lignins**
- Contribute to the bulk, very little to energy
- Water holding capacity, bile binding capacity, promotes growth of normal intestine microflora
- Lowers cholesterol, limits glucose absorption
- Reduces constipation, colon cancers,
- Softens stool, accelerates bowel movement
- High fiber may reduce bioavailability of minerals, cause flatulence and decreased appetite

PROTEIN: 1 G =4 KCAL.

- Protein means of ‘prime importance’
- 24 amino acid, 8 essential in all & 3: cysteine, arginine, taurine essential in LBW babies
- Helps in growth, tissue repair, formation of body fluids and enzymes
- **RDA**:1.8-1.5 in child & 0.7 g/kg/day in adults
- To supply up to 15% of energy
- **Complete protein** supply all the essential aa.
- **Reference protein** : provides aa. pattern close to tissue protein, Egg with Digestibility quotient (DQ), Biological value (BV) & Net protein utilization (NPU) = 96.

LIPIDS/FAT: LONG CHAIN 1 G = 9 KCAL

- Concentrates of energy, Both Visible & non visible, transports fat soluble vitamins
- Saturated, Monounsaturated & Polyunsaturated (Ideal ratio 1:1:1)
- Long chain: 12 or more, Medium: 7-11 & Short: 6 Carbons
- Triglycerides, phospholipids (lecithin), sterols (cholesterol: HDL (good cholesterol), LDL, VLBL)
- Cis. Vs. Trans fat (trans fat unhealthy)

LIPIDS/FAT: LONG CHAIN 1 G = 9 KCAL CONTD...

- EFA- Polyunsaturated to supply 3% of energy →
- Derived Long Chain polyunsat. (LCPs)
- Omega 6: Linoleic → Arachidonic & Adrenic acid
  - Proinflammatory, health of skin
- Omega 3: Alpha Linolenic → Eicosa pentaenoic acid (EPA) & Docosa hexaenoic acid (DHA)
  - Anti inflammatory, EPA for heart & DHA for brain & vision
  - (ideal ratio of Omega 6: omega 3 = 5-10:1)

MINERALS- MACRO & MICRO MINERALS

- Elements, Minerals, Electrolytes
- Calcium, Phosphorous, Magnesium, Sodium, Potassium, Chloride,,
- Trace elements
  - Essential – iron, iodine, zinc, selenium, copper, molybdenum, cobalt, chromium, manganese, silicon, nickel, boron
  - Potentially toxic – fluorine, lead, cadmium, mercury, arsenic

PERIODS OF GROWTH

- Prenatal period
  - Ovum: 0–14 days
  - Embryo: 2 to 9 weeks
  - Fetus: 9 weeks to birth
- Perinatal period
  - 28 wks gestation (>1000 g) to 7 days after birth,
  - Extended: 22 wks to 7 days.

PERIODS OF GROWTH

- Postnatal period
  - Newborn: first 28 days after birth
  - Infancy: first year
  - Toddler: 1 – 3 year
  - Preschool: 3 – 6 years
  - Schoolchild: 6 – 10 years & more
  - Adolescence: 10-19 yrs..
  - LBW: <2500 irrespective of gestational age, VLBW: <1500 & ELBW: < 1000 g

ASSESSMENT OF NUTRITIONAL STATUS

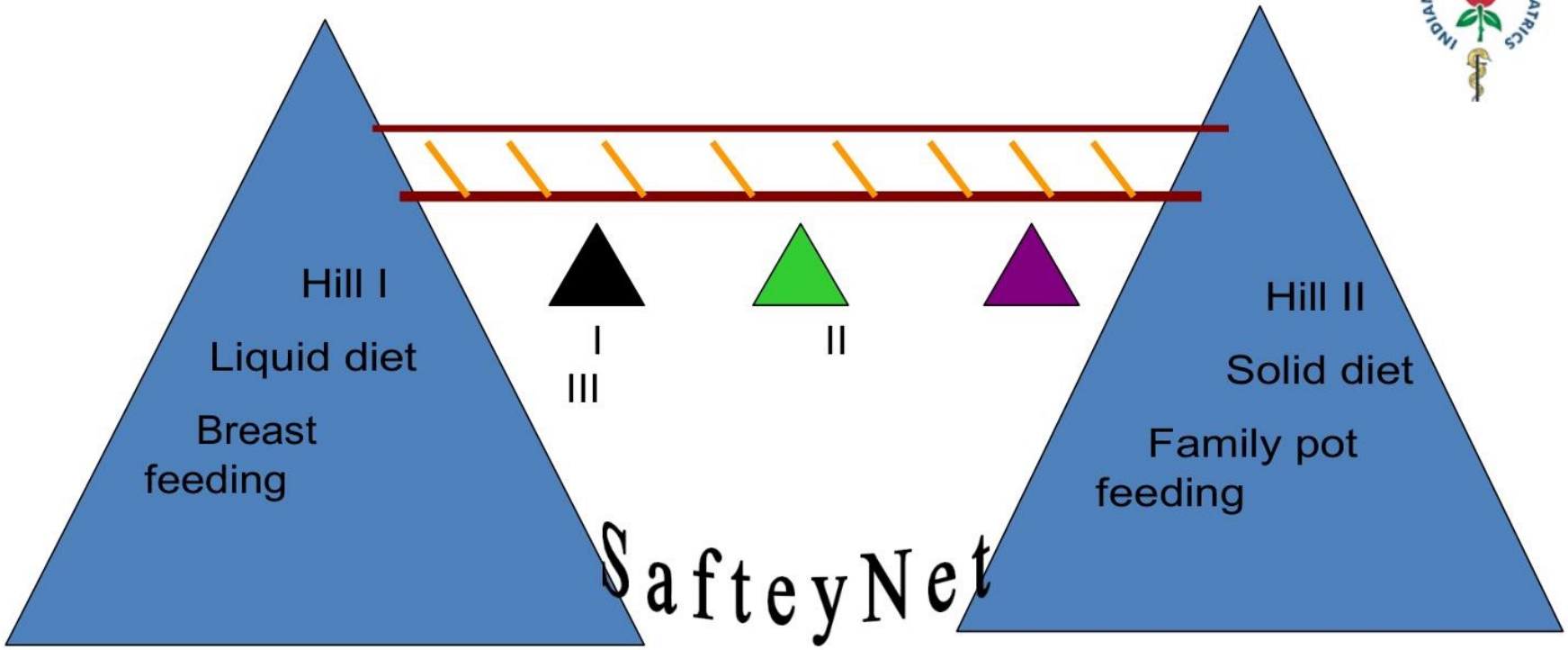
- Dietary History
- Anthropometry / Auxology*

(* preferred term than anthropometry for human measurements)

- Clinical features of Malnutrition/ specific deficiencies
- Biochemical Assessment
- Radiological Assessment: Bone, Teeth etc.
- Morphological & Histological
- Epidemiological: Vital statistics

DIETARY EVALUATION

- Record **IYCF practices: Exclusive breast feed**, total duration of breast feeding,
- **Complementary feeding**: time of introduction, type, adequacy,
- Empowerment to **Family pot feeding,**
- Access to any **safety net** in the form of Supplementary feeding, Group eating / small frequent special feeding (Akshayapatra concept)
- Present diet: **24 Hrs. dietary recall**
- Adequacy with respect to energy, protein, micronutrients & comparison with RDA
- Any H/o exclusion diet, diet during illness, any supplements



Pit of malnutrition

Safety Net : Supplementary Feeding,

Group Eating,

Akshayapathra

RDA

- **Energy Requirement: ICMR Recommended Dietary Allowances (RDA)** almost on par with American RDA for reference child/ ideal weight
- **Bedside Calculation- bare minimum**: 1 Yr. old 1000 kcal +100 kcal/each Yr. Adol. Boy 2400 & Girl 2200.
- **Holliday & Segar formula for both energy & fluid *:**
  - 1 – 10 kg:100 kcal/ kg/day
  - 11 – 20 kg:1000 + 50 kcal/kg/day
  - > 20 kg:1500 + 20 kcal/ kg/day
  - Adult: 40 kcal/kg/day

*Use ideal weight for energy & observed weight for fluid calculation

FOOD VALUES

- Ideally Standard measuring equipments should be demonstrated during dietary evaluation.
- 1 teas spoon: 5 ml or 5 g
- 1 table spoon:15 ml or 15 g (3 teaspoon)
- 1 glass: Usually 8 oz – 240 ml/g
- 1 cup: Usually 6 oz- 180 ml/g

Food item	Protein g	Kilocalories
Idly – one	2	50
Puri – two	2	70
Wheat chappati 1	2	70
Bread slice 1 1oz	2	70
Dosa	2	70
Uppma 1 cup	6	250
Ragi 6 tsp	2	100
Cooked dhal 1 tsp	0.5	15
Oil/ghee 1 tsp	0	36

Food item	Protein gms	Kilocalories
Cooked rice 1 cup	4	175
Honey 1 tsp	0	15
Rasam 1 cup	0	20
Coconut water 1 cup	1.4	24
Coffee 1 cup	1.8	80
Tea 1 cup	1.0	60
Butter milk 100 ml	0.8	15
Ragi flour 6 tsp	2	100
Ragi 100 g	7.3	328
Rice 100 g (Par boiled)	6.4	346

Food item	Protein gms	Kilocalories
Mashed potato 1 tsp	-	40
Bengal gram 100 g	22.5	369
Black gram Dhal 100 g	24	347
Green gram dhal 100 g	24.5	348
Red gram dhal 100 g	22.3	335
Mutton 1 oz (8 bits)	6	50
Egg Hen 1	6	80
Fish 1oz (10 cm)	6	80
Biscuit 1	0.5	25
Papadam 1	0.5	25
Banana 1	0.6	50

Food item	Protein gms	Kilocalories
Spinach 100g	2	26
Cow's milk200 ml	6	120
Curd 30ml	1	20
Papaya ripe 100 G Tomato 100g	0.6 1.4	32 21
Ground nut 100 seeds	10	200

ITEMS THAT GIVE 6 G OF PROTEIN

- 1 egg
- 3 slice bread
- 3 idlis
- 3 chappatis
- 3 dosas
- 6 puris
- 6 vada / bonda
- 12 tsp cooked dhal
- 18 tsp ragi
- 1 glass milk
- 1 ounce (30 ml) meat / fish
- 60 groundnuts
- 15 cashew nuts
- 1 ½ cup cooked rice
- 6 tsp bengal gram
- 12 Biscuit
- 12 pappadam

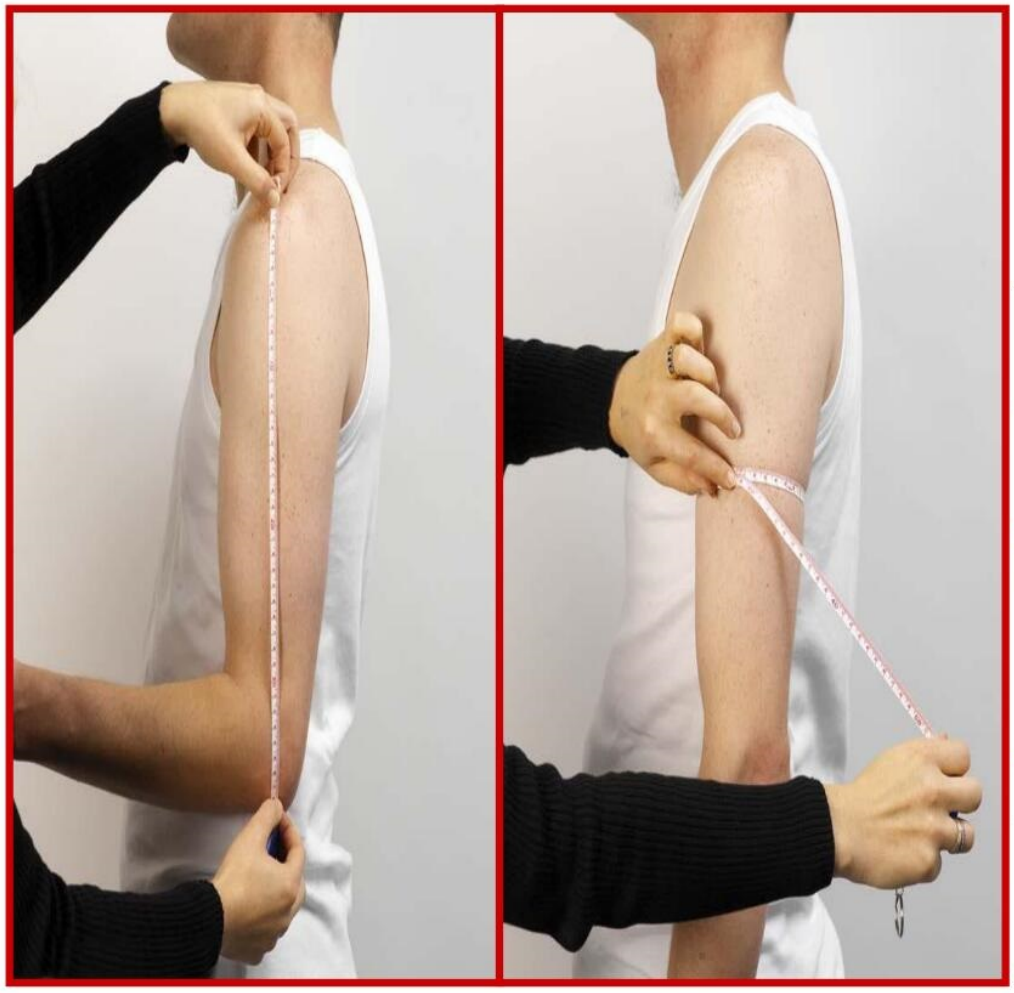
AGE DEPENDENT & AGE INDEPENDENT ANTHROPOMETRIC CRITERIA

- Weight & Height for age, Length up to 2 Yrs
- & Height after 2 Yrs. (Anthropometric rod)
- Weight for Height
- Head circumference
- Chest circumference
- Mid Upper Arm circumference (MUAC Tape)
- Skin fold thickness- Harpenden Caliper
- Upper segment: Lower segment ratio
- Arm span
- Mid parental height (MPH: average of father's & mother's height) & predicted adult Target Height (MPH + 6.5 in boys & MPH- 6.5 cm in girls)

AGE INDEPENDENT ANTHROPOMETRIC MEASUREMENTS

- MUAC: Left upper arm
- Bangle test: Internal diameter 4 cm
- Shakir's tape: Colored (green, yellow, red) MUAC tape
- Quac stick*: Relates height to MUAC (* Of historic importance only)
- Body mass index (BMI): very good to define both obesity & chronic energy deficiency
- Ponderal index: Used in newborns, relates weight to height.

CLASSIFICATION BASED ON MID UPPER ARM CIRCUMFERENCE



Between 1-5 yrs. constant

16.5-17.5 cm

MUAC (cm)	
>13.5	Normal
13.5-12.5	Mild/moderate malnutrition
<12.5 < 11.5	Severe malnutrition SAM

WEIGHT FOR AGE – GOMEZ INTERNATIONAL CLASSIFICATION

Wt / age (%)	Degree of malnutrition
>90	Normal
75 – 90	I degree
60 – 75	II degree
<60	III degree

WEIGHT FOR AGE- WELLCOME TRUST CLASSIFICATION

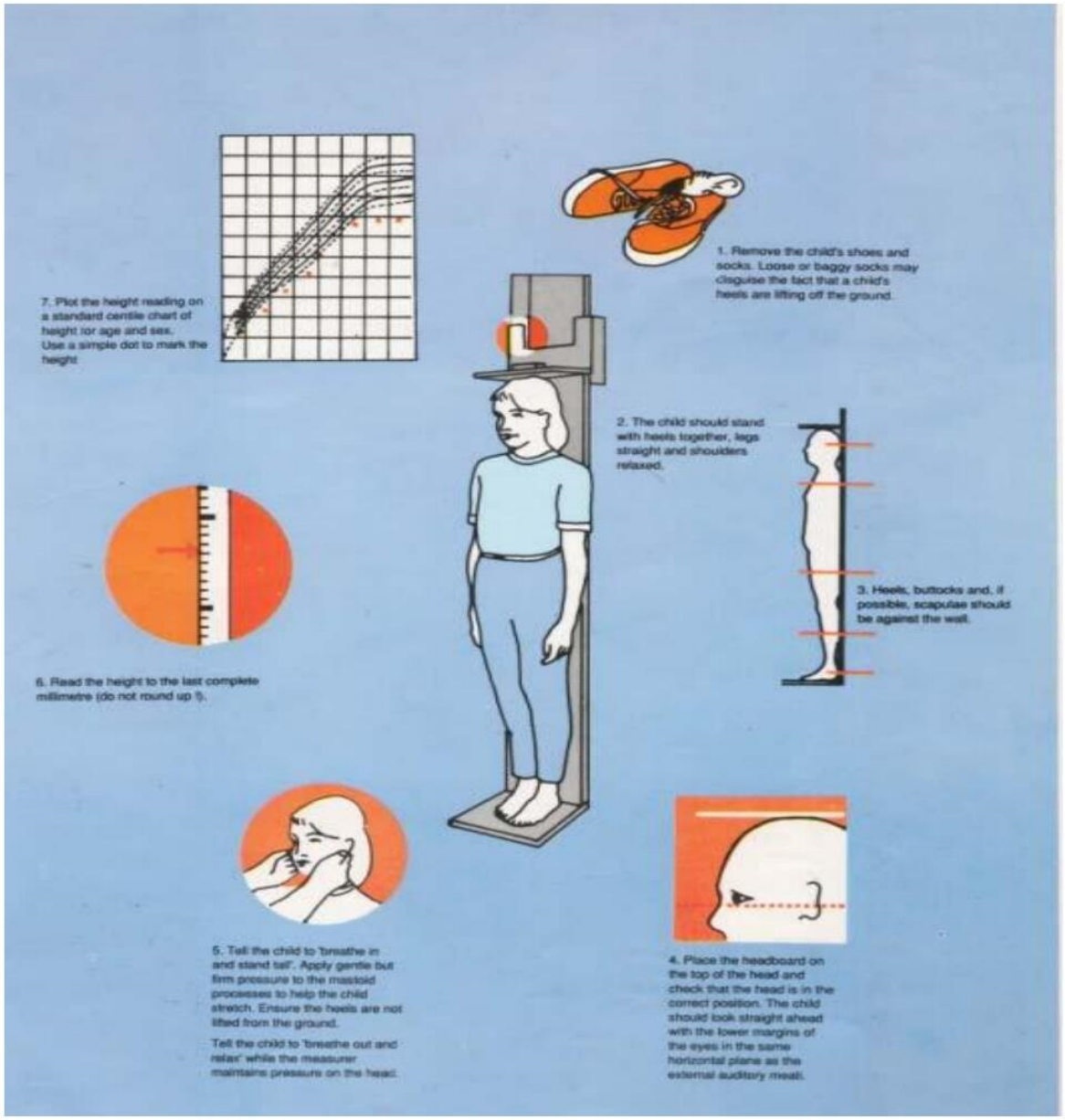
60-80%	Edema +	Kwarshiorkor
60-80%	-	Underweight
<60	-	Marasmus
<60	Edema +	Marasmic Kwashiorkor

WEIGHT FOR AGE- IAP CLASSIFICATION OF MALNUTRITION

>80%	Normal
71-80%	Grade I
61-70%	Grade II
51-60%	Grade III
<50%	Grade IV

HEIGHT FOR AGE: CLASSIFICATION OF STUNTING (WATERLOW)

> 95%	Normal
90-95%	1 degree stunting (mild)
85-90%	II degree stunting (moderate)
> 85%	III degree stunting (severe)


1. Remove the child's shoes and socks. Loose or baggy socks may disguise the fact that a child's heels are lifting off the ground.
2. The child should stand with heels together, legs straight and shoulders relaxed.
3. Heels, buttocks and, if possible, scapulae should be against the wall.
4. Place the headboard on the top of the head and check that the head is in the correct position. The child should look straight ahead with the lower margins of the eyes in the same horizontal plane as the external auditory meati.
5. Tell the child to 'breathe in and stand tall'. Apply gentle but firm pressure to the mastoid processes to help the child stretch. Ensure the heels are not lifted from the ground.
Tell the child to 'breathe out and relax' while the measurer maintains pressure on the head.
6. Read the height to the last complete millimetre (do not round up !).
7. Plot the height reading on a standard centile chart of height for age and sex. Use a simple dot to mark the height

WEIGHT FOR HEIGHT: CLASSIFICATION OF WASTING (WATERLOW)

> 90 %	Normal
80 -90 %	1 degree wasting (mild)
70-80 %	II degree wasting (moderate)
< 70%	III degree wasting (severe)

MID PARENTAL HEIGHT

Boy

- $\frac{\text{paternal height} + \text{maternal height}}{2} + 6.5$

Girl

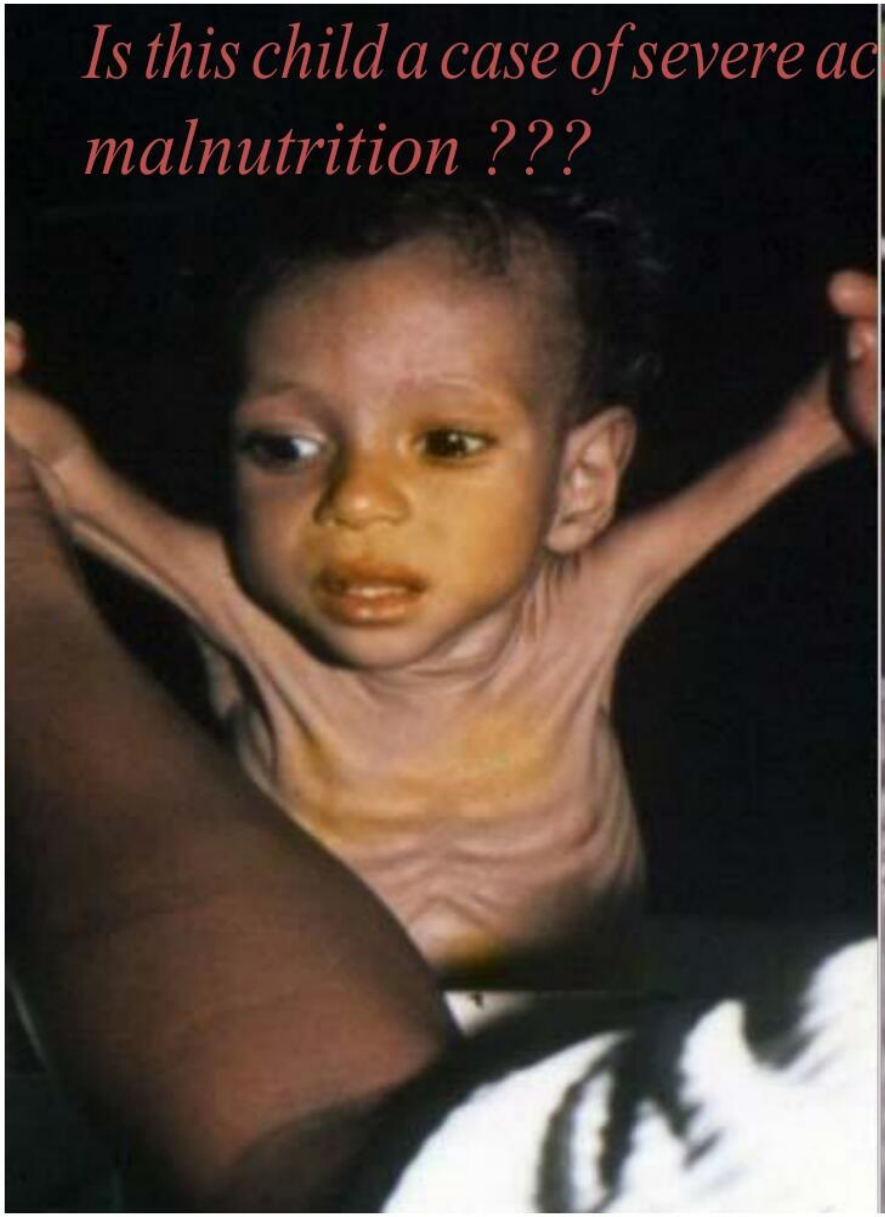
- $\frac{\text{paternal height} + \text{maternal height}}{2} - 6.5$

- Predicted target height is MPH +/- 2.5 cm

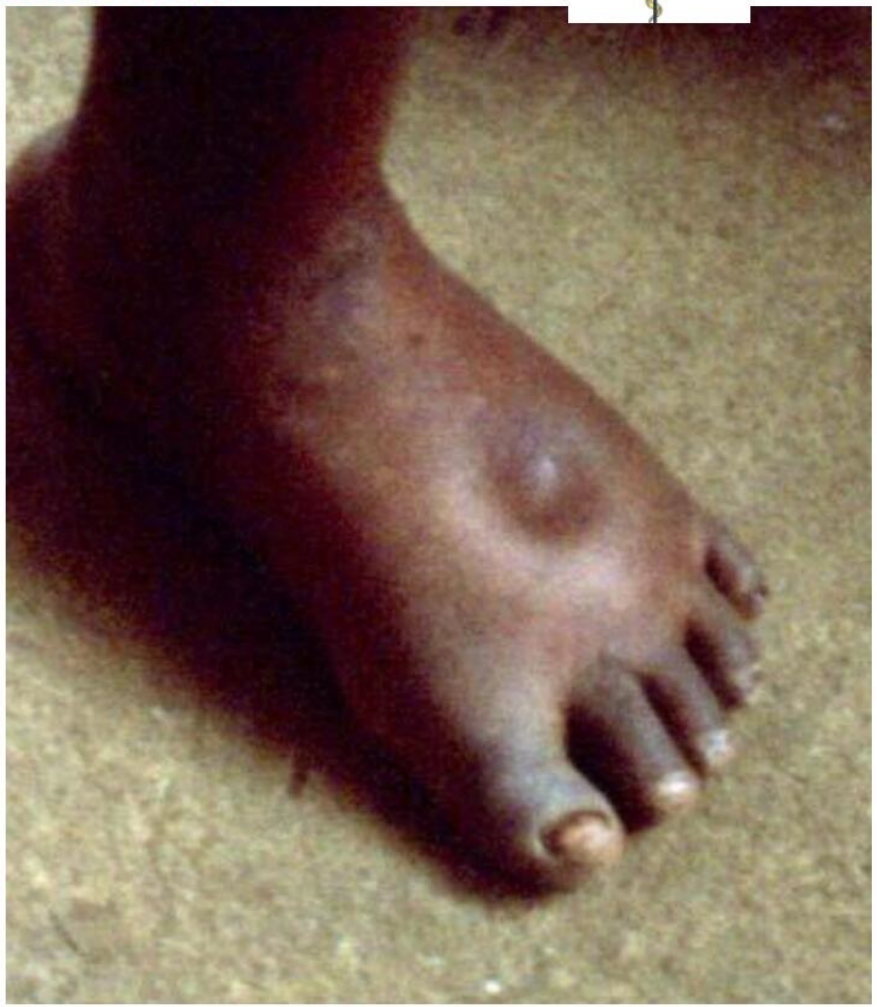
SEVERE ACUTE MALNUTRITION

Is this child a case of severe acute malnutrition ???

Is this child a case of severe acute malnutrition ???



One cannot tell by just looking, Take measurements, Test for edema-finger pressure for 3 seconds



MARASMUS

- Severe wasting of muscle & s/c fats
- Severe growth retardation
- No edema or hair changes or fatty liver
- Alert but miserable
- Hungry

MARASMUS – GRADE IV

KWASHIORKOR

Cardinal features

- Oedema
- Psychomotor changes
- Growth retardation
- Muscle wasting

Associated features

- Moon face
- Hair changes
- Skin changes
- Depigmentation
- Anemia
- Hepatomegaly
- Flaky paintdermatitis
- Cardiac failure
- Ddehydration
- Vitamin deficiencies

KWASHIORKOR- GRADE IV

GRADING OF SEVERITY

Marasmus

I: loose skin folds axilla & groin

II. Wasting of Thigh & buttocks

III. Wasting of Chest & back

IV. Wasting of Buccal pad of fat

Kwashiorkor

I. Pedal edema

II. Facial edema

III. Chest & body edema

IV. Ascites

MARASMIC KWASHIORKOR

- Syndrome seen in marasmic children, with severe muscle & fat wasting who suddenly develop edema, due to increased protein deficiency than before.
- Thus clinical features, combination of Marasmus & Kwashiorkor .
- Anemia is moderate & one/ more Vitamin deficiencies may be evident.

MARASMIC KWASHIORKOR

INFECTION & IMMUNITY IN PEM

- Infection & Immunity interrelated to PEM
- Infectious disease worsens PEM & vise versa
- PEM usually weakens resistance to infection → high mortality among toddlers & under 5 children
- These children may present with recurrent attacks of diarrheal diseases, pneumonia, septicemia, measles, tuberculosis and malaria.

INFECTION & IMMUNITY IN PEM

- Urinary tract infection often occur but may go undetected,.
- Intestinal helminthiasis & giardiasis frequent
- All these impair nutritional status leading to growth retardation & overt PEM & contribute to high mortality

PEM & IMMUNITY

- Skin & mucus membrane barrier disrupted → infection
- Non specific defenses macrophages, tears, gastric acidity depressed
- Humoral : Ig G, IgM not significantly affected in mild to moderate PEM, hence host respond well to bacterial challenges & viral vaccines.
- Secretory Ig A → Surface tract infections, GIT & Rep. Tract

PEM & IMMUNITY

- Cell Mediated Immunity (CMI) : is impaired in all grades
- This explains –ve Tuberculin (Mantoux) test in Marasmus & Kwashiorkor in spite active TB
- Following dietary treatment when the patient improves, Test may convert to +ve.
- Serum C reactive Protein & Complement C3 are depressed in severe PEM, but rise in presence of infection & behave as acute phase reactants.

ECOLOGY/ETIOLOGY OF MALNUTRITION

- Conditioning influences
  - Low birth weight
  - Infections - eg., Diarrhea,
  - Respiratory infections,
  - VPDs: Measles / Whooping cough, Tuberculosis,
  - Helminthiasis
- Socio economic factors
  - Poverty, Ignorance
  - Illiteracy
  - Lack of knowledge regarding food values
  - Unhygienic environment
  - Large family size
  - Over crowding
- Cultural practices
- IYCF practices,
- Undue delay in rice giving ceremony
- Alcoholism
  - Food habits
  - Customs and belief
  - Tradition
  - Religion
  - Food fads (personal likes & dislikes)
  - Cooking practices
  - Child rearing practices
  - Superstitious belief

ECOLOGY/ETIOLOGY OF PEM – CONTD..

- Food production & intake
  - abrupt withdrawal of breast milk
  - Delayed and inadequate complementary food
  - Lack of food supplementation for target group
- Availability and utilization of health/other services
  - Lack of health education, Nutritional surveillance
  - Nutritional rehabilitation, Primary health care
  - Immunization, Early diagnosis, Prompt treatment
  - Referral services

EVIDENCE BASED HIGH IMPACT NUTRITION INTERVENTIONS FOR PREVENTION OF MALNUTRITION

1. Timely initiation of breast feeding within I hour of birth
2. Exclusive breastfeeding during the first six months of life
3. Timely introduction of complementary foods at six months
4. Age-appropriate foods for children six months to two years
5. Hygienic complementary feeding practices
6. Immunization and bi-annual Vitamin A supplementation with deworming

STRATEGIES FOR PREVENTION

7. Appropriate feeding for children during and after illness
8. Therapeutic feeding for children with severe acute malnutrition
9. Adequate nutrition and support for adolescent girls to prevent anemia
10. Adequate nutrition and support for pregnant and breastfeeding mothers

These 10 essential interventions could halve the proportion of undernourished children over the next

THANK YOU

VALUE ADDED COURSE

NUTRITION (Module on NUTRITION IN PAEDIATRICS) PECO1

List of Students Enrolled (july2020-oct 2020)

2nd Year MBBS Student			
Sl. No	Name of the Student	Roll No	Signature
1	AASHIK MUKESH. M. S	U14MB201	
2	ABEETHA.M	U14MB202	
3	ABHINAV. S	U14MB203	
4	ABINAYA. M	U14MB204	
5	ABISHEK. R	U14MB205	
6	ABIRAMI. S	U14MB206	
7	AGALYA. S	U14MB207	
8	AJAY PANDIAN. V	U14MB208	
9	AJEETH. R	U14MB209	
10	AJITH KUMAR. M.K.	U14MB210	
11	AKSHAI. S	U14MB211	
12	ALLEN DANIEL XAVIER.J	U14MB212	
13	ALTHAF AHMED	U14MB213	
14	AMARA LOKESH	U14MB214	
15	AMRESH. K	U14MB215	
16	ANANT SURYA. R	U14MB216	
17	ANDREW MARIE XAVIER.V	U14MB217	
18	APSARA. P	U14MB218	
19	ARPUDHA. A	U14MB219	
20	ARUL PRABHA MADHIVADHANI. M	U14MB220	

Dr. Abhijeet Shrivastava

ASSISTANT PROFESSOR
DEPARTMENT OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES

Dr. Tiroumourougane Serane

PAEDIATRICS HEAD
DEPT. OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
OSUDU, PUDUCHERRY

Abhinav. S
U14MB203

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

EAnnexure - IV

PAEDIATRIC NUTRITION - MULTIPLE CHOICE QUESTIONS

Course Code: PEC01

I. **ANSWER ALL THE QUESTIONS**

1. Energy value for protein , carbohydrate and fat
   a-4kcal,4kcal,9 kcal
   b-6kcal,4kcal,7kcal
   c-4kcal,4kcal,4kcal

5/10

2. Caloie requirement for a 10 kg child
   a-1500kcal
   b-1000kcal
   c- 1250kcal

3. RDA for iron
   a-90-120mg
   b- 110-130mg
   c- 130-150mg

4. RDA for vit D
   a-400iu
   b-700iu
   c-200iu

5. Zinc deficiency causes acrodermatitis enteropathica ?
   a-True
   b-False

6. Vit k dependent clotting factors

Abirmeya M
V14MB205

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

EAnnexure - IV

PAEDIATRIC NUTRITION - MULTIPLE CHOICE QUESTIONS

Course Code: PEC01

I. ANSWER ALL THE QUESTIONS

4/10

1. Energy value for protein , carbohydrate and fat
   a-4kcal,4kcal,9 kcal
   b-6kcal,4kcal,7kcal
   c-4kcal,4kcal,4kcal

2. Caloie requirement for a 10 kg child
   a-1500kcal
   b-1000kcal
   c- 1250kcal

3. RDA for iron
   a-90-120mg
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   a-400iu
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5. Zinc deficiency causes acrodermatitis enteropathica ?
   a-True
   b-False

6. Vit k dependent clotting factors

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that _ABINAYA. M (U14MB204)_____ has actively participated in the Value Added Course on *All About Adolescents (Module on Adolescent Paediatrics)* held during July 2020 – Oct 2020 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. Satya Manasa Gayatri Vinay

RESOURCE PERSON

Dr. Raghavendran

COORDINATOR

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that_____ABEETHA.M (U14MB202)__ has actively participated in the Value Added Course on *All About Adolescents (Module on Adolescent Paediatrics)* held during July 2020 – Oct 2020 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. Satya Manasa Gayatri Vinay

RESOURCE PERSON

Dr. Raghavendran

COORDINATOR

Abinaya M
V14MB205

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

EAnnexure - IV

PAEDIATRIC NUTRITION - MULTIPLE CHOICE QUESTIONS

Course Code: PEC0

I. ANSWER ALL THE QUESTIONS

1. Energy value for protein , carbohydrate and fat
   a-4kcal,4kcal,9 kcal
   b-6kcal,4kcal,7kcal
   c-4kcal,4kcal,4kcal

2. Caloie requirement for a 10 kg child
   a-1500kcal
   b-1000kcal
   c- 1250kcal

3. RDA for iron
   a-90-120mg
   b- 110-130mg
   c- 130-150mg

4. RDA for vit D
   a-400iu
   b-700iu
   c-200iu

5. Zinc deficiency causes acrodermatitis enteropathica ?
   a-True
   b-False

6. Vit k dependent clotting factors

Abinaya M
VI4MB205

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

EAnnexure - IV

PAEDIATRIC NUTRITION - MULTIPLE CHOICE QUESTIONS

Course Code: PEC0

I. ANSWER ALL THE QUESTIONS

1. Energy value for protein , carbohydrate and fat
a-4kcal,4kcal,9 kcal
b-6kcal,4kcal,7kcal
c-4kcal,4kcal,4kcal

2. Caloie requirement for a 10 kg child
a-1500kcal
b-1000kcal
c- 1250kcal

3. RDA for iron
a-90-120mg
b- 110-130mg
c- 130-150mg

4. RDA for vit D
a-400iu
b-700iu
c-200iu

5. Zinc deficiency causes acrodermatitis enteropathica ?
a-True
b-False

6. Vit k dependent clotting factors

Abhinav. C
U14MB 203

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

EAnnexure - IV

PAEDIATRIC NUTRITION - MULTIPLE CHOICE QUESTIONS

Course Code: PEC0

I. **ANSWER ALL THE QUESTIONS**

1. Energy value for protein , carbohydrate and fat
   a-4kcal,4kcal,9 kcal
   b-6kcal,4kcal,7kcal
   c-4kcal,4kcal,4kcal

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3. RDA for iron
   a-90-120mg
   b- 110-130mg
   c- 130-150mg

4. RDA for vit D
   a-400iu
   b-700iu
   c-200iu

5. Zinc deficiency causes acrodermatitis enteropathica ?
   a-True
   b-False

6. Vit k dependent clotting factors

Student Feedback Form
Annexure -5

Course Name: **PEDIATRIC NUTRITION**

Subject Code: **PEC01**

Name of Student: AKSHAY. S Roll No.: U 14MB211

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear			✓		
2	Course contents met with your expectations			✓		
3	Lecturer sequence was well planned			✓		
4	Lectures were clear and easy to understand			✓		
5	Teaching aids were effective				✓	
6	Instructors encourage interaction and were helpful			✓		
7	The level of the course			✓	✓	
8	Overall rating of the course	1	2	3	(4)	5

** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory*

Suggestions if any:

–

Signature

Date:

Student Feedback Form
Annexure -5

Course Name: **PEDIATRIC NUTRITION**

Subject Code: **PEC01**

Name of Student: AYYANAN · R. Roll No.: U 14 MB 226

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear			✓		
2	Course contents met with your expectations			✓		
3	Lecturer sequence was well planned			✓		
4	Lectures were clear and easy to understand			✓		
5	Teaching aids were effective			✓		
6	Instructors encourage interaction and were helpful		✓			
7	The level of the course			✓		
8	Overall rating of the course	1	2	3 ✓	4	5

** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory*

Suggestions if any:

—

Date: 01.11.2020

From

Dr. Tiroumourougane Serane
Professor and Head,
Department of Paediatrics,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To

The Dean,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course: Pediatric Nutrition for Undergraduates

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: PediatricNutrition for II year MBBS students from July 2020 to Oct 2020 for 10 Third Year MBBS students . We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards,

Dr. Tiroumourrougane Serane

PAEDIATRICS HEAD
DEPT. OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
OSUDU, PUDUCHERRY

Encl: Photographs


PECO1- NUTRITION. JULY2015