THERAPEUTIC FEEDING GUIDELINES

Thailand Burma Border Consortium

Basic Principals

TBBC supports foods for therapeutic feeding programs to all medical agencies working in the Thai-Burmese border camps.

Target groups include:

- severely acutely malnourished children, adolescents, and adults

Health and social workers should follow up in the household to determine the cause of severe malnutrition, including possible illness, not attending clinic, etc.

Protocols and Formulas

The complete medical protocol for therapeutic feeding programs is stated in the Burmese Border Guidelines (starting on p. 108).

Evaluation and treatment protocols can also be found in The Management of Severe Malnutrition (WHO). These include treatment protocols for standard treatment of vitamin and mineral deficiencies.

Phase 1 Feeding Protocol

The specific objectives are the treatment of the medical complications and restoration of the normal metabolic functions including:

- medical treatments and prevention of dehydration, infections, hypothermia, hypoglycaemia, heart failure, very severe anaemia etc.

This is accomplished by:

- nutritional treatment based on a low energy and protein diet (in total 100 Kcal/kg/d for children, 40 Kcal/kg/d for adults), given in frequent fractionated meals (8-12 meals per 24-hours)
- very close daily monitoring of the patient
- admit to IPD (severe malnutrition is a medical emergency and MUST be treated in the IPD)
- Provide fortified high energy milk (HEM) every 2-3 hours according to weight throughout the day and night..
- The child should receive Phase 1 HEM between 8-12 times during each 24 hours, not to exceed 3 hours between meals.
- Use a nasogastric tube if child cannot drink.

Phase 2 Feeding Protocol

Child can begin Phase 2 after 2-7 days. Patient should be free from oedema, be in good clinical condition and have regained appetite.

The specific objectives of Phase II are the rapid weight gain of the patient (for children: 10-20 g/kg/day).

This is accomplished by:

- a nutritional treatment based on a high energy diet divided in 6 meals a day
- medical treatment
- regular monitoring of the patient
- development of emotional and physical activities

When the patient has reached the recovery criteria, he will be discharged of the TFP and referred to the Supplementary Feeding Program for a minimum of 4 weeks.

Begin by replacing Phase 1 HEM with equal amounts of Phase 2 HEM for 4 days before increasing the volume offered at each meal.

Provide HEM feeds every 4 -6 hours, day and night, making a total of between 5-6 feeds (1 night feeding can be eliminated after child is gaining weight and no longer at risk of hypothermia or hypoglycemia).

Feed local foods or blended food porridge between HEM feeds to ensure that nutrients are absorbed.

Foods Reimbursed _____

Foods reimbursed by TBBC include:

Phase 1:

- dried skim milk (Mission brand DSM)
- sugar
- vegetable oil

Phase 2:

- blended food
- sugar
- vegetable oil
- dried skim milk (Mission brand DSM)

other foods including:

- beans
- eggs
- fresh fruits and vegetables
- tinned fish
- rice, etc.

Note: Children < 24 months can eat ONLY Phase 2 HEM during the 2nd phase depending on appetite and tolerance of other foods. Blended food porridge can be offerd if tolerated.

Children >24 months can begin eating Blended Food Premix 1 porridge in addition to a mixed diet during the rehabilitation phase.

BREASTFEEDING SHOULD CONTINUE DURING ALL PHASES AND THROUGH DISCHARGE IF POSSIBLE

Phase 1 HEM

Ingredient	Amount
Phase 2 HEM	1 liter
water (boiled)	350 ml

1. Prepare Phase 2 HEM (see recipe below)
2. Add 350 ml of water to 1 liter of Phase 2 HEM
3. Mix thoroughly.

Note: *An appropriate multivitamin/mineral supplement can be provided in lieu of adding vitamin/ mineral mix to diet.*

PHASE 2 HEM

Ingredient	Amount
dried skim milk	80 g
sugar	50 g
vegetable oil	60 g
Compound of minerals and vitamins (CMV)	3.2 mg
water (boiled)	850 ml
	Yield= 1 liter

1. Add DSM, sugar, and oil to some warm boiled water and mix.
2. Add vitamin and mineral mix and mix again. *Never add CMV powder to a powder. Always add to a liquid- or it may not dissolve properly and could result in an overdose.*
3. Make up the volume to 1000 ml with remaining water.

Note: *It may be better to prepare 2 liters of Phase 2 HEM since the measuring spoon provided with the CMV measures 6.5 g, roughly the amount needed for 2 liters.*

Nutritional Treatment Chart

	Phase 1	Transition (4 days)	Phase 2
	Initial phase	Transition (4 days)	Rapid weight-gain
Feeds per day	8 -12 +	8- 12	6
Nutritional Milks			
	HEM Phase 1*	HEM Phase 2§	HEM Phase 2
Age Category	**DIET**		
Amount (ml/kg bogy-weight/day)			
6 months to 10 years	135	135	200
10 to 18 years	65	65	100
18 to 75 years	55	55	80
> 75 years	45	45	70
Energy (kcal/kg of body-weight/day)			
6 months to 10 years	100	135	200
10 to 18 years	50	65	100
18 to 75 years	40	55	80
> 75 years	35	45	70

+ maximum of 3 hours between meals and feeding over the course of 24 hours
**Energy density of HEM Phase 1: 75 kcal/100ml*
§ Energy density of HEM Phase 2: 100 kcal/100 ml

Calculating feeding volumes:

The calculation is based upon the patient's age and weight, see table above. Calculate the amount needed per patient per day. Weight must be assessed daily:

- Amount by age and phase multiplied by body weight (kg)= total HEM needed for the day
- Divide the total amount by the number of meals to be given that day
- Mark amount on the treatment chart

Volume per meal=

$$\frac{\text{Amount by age and phase} * \text{body weight}}{\text{Number of meals per day}}$$

Thick or Thin Blended Food Porridge

- 2-3 parts water
- 1 part Blended Food Premix 1

1. Boil water
2. Add Blended Food Premix 1 and stir constantly to avoid lumping.
3. Cook for 5-10 minutes, and serve warm or cool.
4. Other ingredients, such as vegetables, fruits, or egg can be added to the mixture.

<u>DO NOT RE-USE</u> Phase 1 HEM or Phase 2 HEM *OR* BLENDED FOOD PORRIDGE THAT DOES NOT GET EATEN

Blended food porridge, biscuits, and other local foods can be offered during Phase 2 between HEM feeds according to appetite.

Please refer to the BBG p. 114 for guidelines on quantities of foods to provide.

Compound of Minerals and Vitamins

Substance	Amount
potassium chloride	
tripotassium citrate	
magnesium chloride	
zinc acetate	
copper sulfate	
sodium selenate	
potassium iodide	
clean water	
Vitamin	
thiamine (B_1)	
riboflavin (B_2)	
nicotinic acid (B_3)	
pyridoxine (B_6)	
cyanocobalamin (B_{12})	
folic acid	
ascorbic acid (vit C)	
pantothenic acid (B_5)	
biotin	
retinol (Vit A)	
calciferol (Vit D)	
α-tocopherol (Vit E)	
vitamin K	