

## MARASMUS

### PEM (PROTEIN ENERGY MALNUTRITION) IN INFANTS AND CHILDREN / MARASMUS / KWASHIORKOR / STUNTING / WASTING

Protein Energy Malnutrition as the name suggests is lack of protein and energy resulting from poor nutrition.

Kwashiorkor is the oedematous form of protein- energy malnutrition; it is due to total deprivation of protein.

Marasmus is a form of PEM which is characterized by muscle wasting and shrunken appearance of the child.

Stunting is low height for their respective age.

Wasting is low weight for their respective age.

## CAUSES

- 1) Inappropriate weaning by a young mother. Occurs in second year of life when the child is weaned from the breast on to a diet low in protein.
- 2) Poor maternal nutrition.
- 3) Diet limited in protein and calories.
- 4) Malabsorption -intestinal diseases.
- 5) Gastroenteritis.
- 6) Measles.
- 7) Malaria.
- 8) Infections: most commonly gastro intestinal, respiratory, measles etc.
- 9) Under nutrition.
- 10) Breast-feeding, when amount of milk is markedly reduced.
- 11) More frequent in infants who are artificially fed.
- 12) Famines associated with climatic disasters.
- 13) Poor socioeconomic state.
- 14) Chronic infectious disease - diarrhoea or respiratory disease.

## MARASMUS

- a. Shrunken wasted appearance.
- b. Muscle wasting.
- c. Severe loss of subcutaneous fat.
- d. Weight and height low for age.
- e. Apathy and irritability.
- f. Diarrhoea.

### 2) DIETARY MANAGEMENT

#### 3) Avoid:

- a. Avoid crowded and unhygienic places.

#### 4) CONSUME

- a. The child should be given a diet providing sufficient quantities of calories and proteins, with an increase in amounts gradually without provoking vomiting or diarrhoea.
- b. It is suitable to initiate the feeding with a liquid formula gradually changing the consistency.
  - i. Give water drained from boiled green grams, Sugar cane juice, Fruit juices, Vegetables soups, Porridge of lentil and rice, Porridge of pulses and cereals, Milk, milk shakes.
  - ii. Make sure food is cooked properly.

- c. Sugar and vegetable oil should be added to increase the energy
- 5) content.
  - a. Continue breastfeeding if possible.
  - b. Along with breast feeding give appropriate and adequate complementary feeding, in weaning stage -
    - i. Give boiled and mashed vegetables and fruits, porridge of pulses and cereals, water drained from boiled green grams, Sugar cane juice Fruit juices.
  - c. a dose of 2 lakh IU of vitamin A should be provided to the child. Daily supplement of 60 mg/day of iron and 100 microgram/day of folic acid should be introduced in the diet.
- 6)
  - a. vitamin A: all yellow fruits and vegetables contain Vitamin A. Meat, eggs, fish, kidney and liver, liver oils of fish like cod, shark, and halibut are richest source of vitamin A.
  - b. Include Vitamin C, antioxidant:
    - i. Citrus fruits vegetable soups and vegetables- cabbage, broccoli, tubers- potatoes and sweet potatoes
  - c. Increase intake of vitamin E: foods of animal origin are low in vitamin E.
    - i. Oilseeds and vegetable oils like soy, cotton-seed and safflower oil.
    - ii. Wheat germ, whole grain, corns, cereals, pulses, nuts, dark green leafy vegetables, olives.
  - d. Another very good antioxidant selenium should be included in the diet: animal foods like - fish, shellfish, eggs, red meat, chicken and liver.
    - i. Grains, Brazil nuts, garlic, wheat germ and brewer's yeast are good source of selenium.
  - e. Add a pinch of turmeric to food; it will boost up your immunity.

### **CONSULT PHYSICIAN**

- a. Treat the cause.
- b. If you do not have complete knowledge of what to feed your infant during the weaning stage consult your physician.
- c. If it is complicated with infectious diseases consult your physician immediately.
- If your child has persistent diarrhoea vomiting see your physician at once.

**NOTE : PLEASE CONTACT WITH YOUR DOCTOR FOR EXACT DIET FOR THE HEALTH PRBLEMS YOU HAVE.THIS A SAMPLE DIET CHART TO GET THE IDEA OF YOUR DAILY ROUTINE FOOD INTAKE TO MAKE YOUR LIFE HEALTHY .**