NUTRITION IN THE LIFE CYCLE

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Session Objectives

- Characterize each stage in terms of nutritional needs
- Highlight specific nutritional requirements for different stages in the life cycle
- Outline challenges to attainment of good nutrition for specific life cycle phases

Introduction

- Poor nutrition starts in utero & extends throughout the life cycle.
  - Infancy and Childhood
  - Adolescence
  - Maternal nutrition – Preg & Lact
  - Elderly
  -

Nutrition during pregnancy

- Critical period of growth due to organ formation – rapid cell division.

- Adequate food intake is important for growth & development of foetus

Weight gain in Pregnancy

Ideal total weight gain =11-15kg

- Ist trimester – 2.3 –3.2kg
- 2nd trimester 4.5 – 6.4 kg
- 3rd trimester 4.2 – 5.4 kg

Nutrient needs during pregnancy

- Reference woman of 25-50 years old weighing 54 kg.

A**dditional nutrient needs/day**

- **Energy:** 300 extra Kcal = 2,400 Kcal/day.

(50-55% of energy = Carbohydrates)

- 30-35% from fats.

Protein needs in Pregnancy

- Requirement increase in 2nd & 3rd trimesters.
- Recommended addition of 30-60g above non pregnancy needs per day.
- Translates to 3- 4 servings of proteins/day.

Calcium

- Needs double over pre-pregnancy requirements.
- Inadequacies - bone re-sorption can occur.
- About 300mg is transferred to the baby.
- Food sources – Dairy products, legumes and green leafy vegetables.

Iron

- Prevents anaemia and increases resistance to infections.
- Requirements raised due to increased maternal blood volume and the need for fetal storage to support the post natal stage.
- An additional 30mg/day is required.
- **Sources**: Meat, liver dried fruits, whole grains.
- Iron supplementation during pregnancy is recommended.

Iodine

- For synthesis of thyroid hormone. Needs are increased due to increased basal metabolism.
- Inadequate intake interferes with growth, leading to cretinism, mental retardation etc.
- Best sources: iodized salt and sea foods.

Folic acid

- Water soluble vitamin impacting cell development in the embryo and fetus.
- Low levels associated with macrocytic anaemia and neural tube defects - involved in hemoglobin formation, cell growth and division.
- Additional 300-400 mcg/ day - pregnancy.
- Supplementation recomened following conception or
- **Sources** ; Liver, whole grain cereals, green leafy vegetables.

Vitamin A

- Vitamin A deficiency during pregnancy leads to congenital malformation.

- An extra 1,000 IU /day is needed during pregnancy.

Infant and Young Child Nutrition

Infant and childhood nutriton

- Undernutrition an important health challenge facing infants and young children.

- Direct causes – inadequate food intake and infections

- Nutritional status has significant implications on health, growth and survival of infants and young children.

- Magnitude of growth during the first year secondary only to rate of growth during intrauterine period.

- Nutrient requirements per kg body weight greater during infancy than at any other stage.

- Infants very vulnerable to nutritional inadequacy

Nutrient requirements

Proteins

- RDI is st at 2.2 g protein per kg body weight for first 6 months and 2.0 g/kg/day for 6 – 12 months.

- Essential amino acids for infants same for adults with established need to histidine and cystine.

Cont…

Fat

- Fat in the diet represents the high energy component and vehicle for fat soluble vitamins and fatty acids.

Carbohydrates

Caloric requirement per kg of body weight greater during infancy than at any other stage in the life cycle

Carbohydrates

RDI – 115 kcal/kg at birth and 105 kcal/kg at 12 months. Healthy well fed infants adjust caloric intake to their body needs.

Vitamins and minerals

- If maternal diet is adequate, then the vitamin and mineral content of milk will supply all the needs for the first 6 months.

END