

Nutrition 1

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- Nutrients are substances that are **not synthesized** by body in sufficient amounts and must be supplied in diet
- **Absence of essential nutrients**
 - Organ dysfunction
 - Growth impairment
 - Failure to maintain nitrogen balance
- **Energy providing food**
 - Proteins carbohydrates, fat

Vitamins, minerals, water

Factors affecting

- Age
- Genetic defects
- Intercurrent illness
 - Disease
 - Surgery
 - infection
- Premature infants

- Energy intake
 - 2600Kcal/ day M
 - 1800 Kcal F
- Energy intake = Energy output

Balanced diet

- adequate amounts of necessary nutrients required for a healthy growth and development of our body.
- both sufficient and nutritious food to ensure good health.
- sufficient amount of fiber and the other nutrients provide the appropriate amount of energy and adequate amounts of water.

Objectives

- healthy weight and energy balance
- provide essential nutrients
- high amount of fruits, vegetables, legumes, nuts and whole grains
- To avoid malnourishment and other nutritional deficiency diseases
- To avoid junk food
- Macro nutrients – Carbohydrates, fats, and proteins
- Micronutrients –Vitamins (A, B, C, D, E, and K) Water and other minerals – calcium, phosphorus, magnesium, selenium, zinc, etc

Proteins

- Non essential amino acids
- Essential amino acids

VERY ILL MP AT TATA HOSPITAL

VALINE

ISOLEUCINE
LEUCINE
LYSINE

METHIONINE

PHENYLALANINE

THREONINE
TRYPTOPHAN

HISTIDINE

0.8 gm /KG/ DAY

Biological value most for animal proteins,
legumes, cereals, roots

- Requirement increases in
 - Periods of growth
 - Pregnancy
 - Lactation
 - Rehabilitation after injury or malnutrition
- Requirement decreases in
 - Renal Failure
 - Cirrhosis of liver

Fats

- **Concentrated** source of energy
- Constitute **30-35 %** of calories
- Saturated fat and trans **fat** < **10%** of calories
- Polyunsaturated fat < **10%** of calories
- **Monounsaturated fat remainder of fat intake**

Carbohydrates

- Carbohydrates --- 45% to 55% of energy intake
- Brain ----100gm of glucose per day
- Other tissues 50 gm per day

Water

- **1000-1500ml/day**: Physical activity, sweating, solute load of diet

- Water loss:

- **Faeces** : 50- 100 ml/day
- **Evaporation**: 500-1000ml/day
- **Urine** > 1000ml/day

Fever 200ml/day/ degree centigrade

Severe diarrhea > 5L/ day

Heavy sweating, exercise, vomiting

Normal Kidneys can excrete 18 lit of urine

Factors affecting daily Recommended Intake

- Age
- Sex
- Growth rate
- Pregnancy
- Lactation
- Physical activity level
- Concomitant disease
- Drugs
- Dietary composition

Dietary assessment

- Screening for malnutrition
- Assessing the diet and other factors
- Planning and implementing nutritional therapy
- Reassessing intakes

- BMI < 19 or > 25
- Weight gain or loss of 5 Kg in six months.
- Diet
 - Acute setting(admitted)
 - Chronic setting(admitted)
 - ambulatory

Malnutrition

- 30-50% of hospitalized patients
- Poor wound healing
- Compromised immune status
- Impaired organ function
- Increased length of hospital stay
- Increased mortality

History

- Body weight
- Medical and surgical conditions
- Constitutional symptoms and signs
- Eating difficulties/ GI complaints
- Eating disorders
- Medication use
- Dietary practice and supplement use
- Influences on nutritional status

Examination

- BMI
- Weight loss
- Weakness/ loss of strength
- Peripheral edema
- Hair examination
- Skin examination
- Eye examination
- Perioral examination
- Extremity examination
- Mental/neurological examination
- Functional assessment

- suddenly or gradually
- mild, moderate or severe