19/MHS06/031

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MEDICAL LABORATORY SCIENCE.

BCH 206.

Q1. What is functional food.

Functional food is a food giving an additional function (often one related to health promoting or disease prevention) by adding new ingredients or more existing ingredients.

b. Describe the different types of functional food.

i) Conventional foods: They are the most basic of the functional foods because they haven’t been modified by enrichment or fortification, they are still in their natural state.

ii) Modified food: They are foods that have been enriched, fortified or enhanced with nutrients or other beneficial ingredients. example "calcium fortified orange juice"

iii) Medical food: They are defined as the food which is formulated to be consumed or administered naturally under the supervision of a physician and which is intended for the dietary management of disease.

iv) Food for special dietary use: These are similar to medical foods but they are available commercially and don’t require the supervision of a health care provider.

c. With relevant examples, give the clinical implications of functional foods.

- Antioxidants: food such as wine and chocolate might aggravate other health problems. For example, Ginko biloba acts as a blood thinner and if people are presently taking blood thinners could experience serious health risks.

- Obscuring the boundaries between food groups (normally defined by the specific selection of nutrients that foods in each group provide). This inevitably influences the ease with which simple and practical dietary advice can be formulated.

Q2. What is nutritional status assessment?

This is the measurement of nutritional status that is produced by balance between requirements and intake of food, quantity, quality and physical health.

b. Describe anthropometric techniques of nutritional assessment and its application.

It is the measurement of body height, weight & proportions.

It is an essential component of clinical examination of infants, children & pregnant women.

It is used to evaluate both under & over nutrition.

The measured values reflects the current nutritional status & don’t differentiate between acute & chronic

changes.

Application

Height:

The subject stands erect & bare footed on a stadiometer with a movable head piece.

The head piece is leveled with skull vault & height is recorded to the nearest 0.5 cm.

WEIGHT MEASUREMENT

Use a regularly calibrated electronic or balanced-beam scale. Spring scales are less reliable.

Weigh in light clothes, no shoes

Read to the nearest 100 gm (0.1kg).

Nutritional Indices in Adults

- The international standard for assessing body size in adults is the body mass index (BMI).

- BMI is computed using the following formula: BMI = Weight (kg)/ Height (m²)

Waist/Hip Ratio

- Waist circumference is measured at the level of the umbilicus to the nearest 0.5 cm.

The subject stands erect with relaxed abdominal muscles, arms at the side, and feet together.

The measurement should be taken at the end of a normal expiration.

Q3. Describe nutrition as it relates to life stages.

Nutrition is the process by which living organism receives material and uses them to promote its vital activities. Living organisms require certain quantity and a varied diet in respect to various life stages to maintain good health through life.

Pregnancy

A varied diet, providing adequate amounts of energy and nutrients, is essential both before a woman becomes pregnant (pre-conception) and during pregnancy.

The mother’s diet can influence the health of the baby.

Infant feeding.

In the first three days after birth, the mother produces a special form of breast milk called colostrum. It contains less fat, more protein and more protective factors than the breast milk produced later.

Breast milk provides all the energy and nutrients a baby needs for growth and maintenance during the first 4 to 6 months of life.

Childhood

The energy requirements of children increase rapidly because they grow quickly and become more active.

This means they have a high energy requirement for their size.

A good supply of protein, calcium, iron, vitamin A and D, as part of a healthy, balanced diet, is essential.

Calcium is needed for healthy tooth development, and together with vitamin D, help develop strong bones.

Adolescence.

It is recommended that teenage girls and women require 14.8 mg of iron each day, while adolescent boys only need 11.3mg of iron per day, but this reduces to 8.7 mg of iron daily for men aged 19 or above.

Adulthood

Nutritional requirements do not change much between the ages of 19 to 50, except during pregnancy and lactation.