

(1A) Functional foods are foods that have an additional function by adding new ingredients or more of existing ingredients.

(1B)-Conventional foods: these are natural Whole Foods that have not been fortified.

-Modified foods: these are foods that have been fortified or enriched with additional ingredients.

-Medical foods: these are foods that are taken under the supervision of a medical professional.

-Food for special dietary use: these are foods used to fortify the normal or usual diet, they're not taken under the supervision of a medical professional and can be gotten commercially.

(1C) Clinical implications of functional foods include:

-They promote optimal health and help reduce disease risk; example is oatmeal because it contains soluble fiber that can help lower cholesterol levels

-It reduces the risk of osteoporosis ; an example is orange juice that has been fortified with calcium.

-It reduces the risk of heart diseases; example is fish oil with omega-3 fatty acid

-It reduces the risk of iron deficiency ; example is infant formula with iron.

(2a) Nutritional status assessment is a measurement of health status by anthropometrics, biochemical data, dietary history, etc.

(2b) Anthropometric technique of nutritional assessment is used to evaluate both under and over nutrition, it is used to measure, body height, weight and proportions. Anthropometric techniques can be applied in mid-arm circumference, skin fold thickness, head circumference and head/chest ratio.

(3) Nutrition is the process of providing or obtaining the food necessary for health and growth in relation to the different life stages which are pregnancy, infancy, childhood, adolescence and adulthood.

(a) Pregnancy: A varied diet, providing adequate amounts of energy and nutrients, is essential both before a woman becomes pregnant (pre-conception) and during pregnancy. During pregnancy, folate is needed for rapid cell division and growth in the foetus that takes place during pregnancy. It has been shown to reduce the chance of neural tube defects, such as spina bifida, in the unborn baby. Foods that are good sources of folate are green leafy vegetables, oranges and bread.

(b) Infancy: The process of producing breast milk is called lactation. Breast milk provides all the energy and nutrients a baby needs for growth and maintenance during the first 4 to 6 months of life. 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 special proteins, antibodies and white blood cells, which help to protect the baby against infection.

(c) Childhood: 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. Nuts and deep sea fish are foods to avoid during childhood.

(d) Adolescence: The demand for energy and most nutrients are relatively high. Boys need more protein and energy than girls due to their later growth spurt. Adolescents should have plenty of energy in their diet for rapid growth.

(e) Adulthood: Nutritional requirements do not change much between the ages of 19 to 50, except

during pregnancy and lactation. A poor diet can lead to diseases such as obesity, cardiovascular diseases, cancer and type-2 diabetes. Therefore adults should always take proper balanced diet to avoid these problems.