**Topic 7. Human Nutrition**

**7.1 Diet**

**State what is meant by the term *balanced diet* for humans**

**Explain how age, gender and activity affect the dietary needs of humans including during pregnancy and whilst breast-feeding**

Balanced diet: A diet that contains all the main nutrients (carbohydrate, fats, protein, vitamins, minerals, fibre & water) in the correct amounts and proportions.

* Dietary requirements depend on your age, sex and activity;
* The amount of energy needed is provided by our carbohydrate and fat intake;
* Generally, males use more energy than females;
* And generally the energy demand increases as we get older until we stop growing;
* Someone doing physical work will use up more energy than an office worker;
* While children are growing they need more protein per kilogram of body weight than adults do;
* Pregnant women need extra nutrients for the development of the fetus.
* **breast-feeding**

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**Describe the effects of malnutrition in relation to starvation, constipation, coronary heart disease, obesity and scurvy**

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| *Disease* | *Cause of malnutrition* | *Symptoms and consequences* |
| Obesity | Too much food  | Heart disease, strokes, diabetes |
| Coronary heart disease | Too much saturated fat (causes high cholesterol levels in the blood) | Cholesterol sticks to the walls of coronary arteries, so not enough blood can get to the heart, leads to heart attack |
| Starvation (e.g. in anorexia nervosa) | Too little food (e.g. intense fear of gaining weight) | Weight loss, organ damage, death (depression, loneliness, insecurity) |
| Constipation  | Lack of fibre | Unable to defecate, pain |
| Scurvy | Lack of Vitamin C | Bleeding under skin & bleeding gums |

**List the principal sources of, and describe the dietary importance of the following….**

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| *Nutrient* | *Principle sources* | *Use in the body* | *Deficiency symptoms* |
| Carbo-hydrates | Rice, potato, yam, bread, millet | Source of energy |  |
| Fats | Butter, milk, cheese, egg yolk, groundnuts. | Source of energy; insulation against heat loss; constituent of cell membranes and some hormones |  |
| Proteins | Meat, fish, eggs, soya, milk | Growth; tissue repair; constituents of enzymes, some hormones, antibodies, hemoglobin, hair and nails |  |
| Vitamin C | Citrus fruits, cabbage, tomato, mango | Needed to make healthy skin and gums | Scurvy - bleeding under skin & bleeding gums |
| Vitamin D | Milk, cheese, egg yolk, fish-liver oil | Needed to maintain hard bones; helps in absorption of calcium from the small intestine | Rickets - soft bones that become deformed. |
| Calcium | Milk, cheese, fish | Needed to form healthy teeth and bones; and for normal blood clotting | Rickets; slow blood clotting |
| Iron | Red meat, liver, kidney, green veg | Needed for formation of hemoglobin in red blood cells | Anemia- tiredness and lack of energy |
| Fibre (roughage) | Vegetables, whole meal bread, fruit | It adds bulk to food passing through the intestines; helps to maintain peristalsis | Constipation; long term can lead to bowel cancer |
| Water | Drinks, fruits, veg | Forms blood & cytoplasm; helps to transport nutrients; removal of waste as urine ; cooling of body by sweating; enzymes only work in solution | Dehydration |

**Explain the causes and effects of vitamin D and iron deficiencies**

**Explain the causes and effects of protein-energy malnutrition, e.g. kwashiorkor and marasmus**