ASSIGNMENTS

1. Explain types of Carbohydrates and five functions of Carbohydrates in Human Body

* **Simple starch carbohydrates**

(E.g. sugar, honey, fruit, fruit juice). Simple carbohydrates have a ‘simple’ molecular structure and are made up of 1-2 sugar molecules. The simplest form of carbohydrate is glucose. Simple sugars that are found in foods include sucrose, fructose and lactose. Not all simple carbohydrates are bad. Natural simple carbohydrates in fruit and milk are perfectly healthy. Low-fat or non-fat dairy such as yoghurt, milk and cottage cheese are healthy food choices and rich sources of calcium. Although fruits and (fresh) fruit juices are healthy and packed with minerals and vitamins, it is probably best to eat them in moderation, as complex carbohydrates such as vegetables are a superior food source if [weight loss](http://www.superskinnyme.com/lose-weight.html) is your goal, especially if you are [carbohydrate sensitive](http://www.superskinnyme.com/carbohydrate-sensitve.html). Probably the best time to ingesting fruit is before and after your workouts.

* **Complex starch carbohydrates**

(E.g. rice, whole meal pasta).Complex carbohydrates are also made up of sugars but the sugar molecules are strung together to form longer more complex chains. Complex starch carbohydrates include whole grains, peas & beans which are rich in vitamins, minerals & fibers. The problem with complex starch carbohydrates is that often they are refined. Refined carbohydrates are foods where machinery has been used to remove the high fiber parts (the bran & the germ) from the grain. When a complex carbohydrate is refined, it loses it complex structure & thus all the properties that made it a healthy choice. Instead it takes on the properties of a simple carbohydrate & is processed by the body in the same way. White rice, white flour, white bread, sugar cereals, pasta, noodles & pretty much anything made from white flour are all examples of refined carbohydrates. One should stay away from refined carbohydrates as much as you should stay away from sugar.

* **Complex fibrous carbohydrates**

(E.g. most vegetables). Fibrous Carbohydrates are rich sources of vitamins, minerals, photochemical & other nutrients tend to be green vegetables. These are full of fiber, which is the indigestible portion of plant material .This means that much of the food passes straight through the gut & is not absorbed thus they are great “colon cleansers’ & are essential for keeping the digestive process running clean & healthily. Besides, fibrous carbohydrates are very low in calories & it’s virtually impossible to overeat on green vegetables. Some vegetable are so low in calories they contain less than it requires to eat

1. a)--For the following nutrients, can you say why they are important and name three sources

* Proteins🡪these are necessary for life & should represent between 10-15% of the daily calorific value. They are composed from a mixture of amino acids some of which are considered “essential”
* Fats (lipids)🡪This improves the energetic density of the food. They supply the essential fatty acids (predominantly in vegetable oils) & facilitate the absorption of fat soluble vitamins such as vitamin A & E. The improves fluidity of a dish as well improve the taste
* Carbohydrates🡪these foods constitute the main source of nutritional energy in the developing nations. The source is above all through the consumption of cereals & tubers. These foods rich in energy should normally be cooked in water especially before giving to children. The water is absorbed by the starch & considerably diminishes the energetic density of the cooked foods.

b) ---Are these foods micronutrients or macronutrients?

* Carbohydrates🡪macronutrient
* Proteins🡪macronutrient.
* Fats🡪macronutrient
* Oils🡪micronutrient

1. What nutrient deficiency do the following clinical signs/symptoms indicate?

(a) Pallor---------------🡪Iron, Vitamin B12 & Folate deficiencies

(b) Goitre ---------------🡪Iodine deficiency

(c) Bitot’s spots ----------🡪Vitamin A deficiency

(d) Bilateral pitting oedema 🡪Proteins deficiency

(e) Severe visible wasting--🡪Proteins & carbohydrate deficiencies

1. a) What is the impact of malnutrition on communities?

Just as malnutrition has many causes, its effects are also multidimensional in nature.

* ***Increased risk of disease and death***

Malnutrition, sub-optimal infant feeding practices, and vitamin A deficiency, significantly lower the resistance to infections and dramatically increase the risk of illnesses and death. Millions of children die of severe acute malnutrition each year.

* ***Low productivity of the malnourished individuals***

Stunting has a serious impact on the productivity of individuals. Stunted children grow up to become less productive adults. Studies show that labour productivity declines as severity of stunting increases. Iodine deficiency also significantly reduces the productivity of an individual.

* ***Poor school performance and attendance***

Proper nutrition is essential for mental and physical development and for school performance. Malnutrition reduces children’s learning ability, school performance and attendance.

Iodine deficiency lowers the ability of children to think and become creative and productive adults. Iodine is necessary for the normal development of the brain of the fetus during pregnancy.

* ***Poverty perpetuation (a vicious circle)***

Malnutrition affects children, women, and communities and will prevent them from reaching their full mental and physical capacity. As stated earlier on, a malnourished child will grow to a malnourished adult. The productivity of the adult will be decreased and poverty will continue.

* ***Intergenerational cycle of malnutrition***

As seen earlier, malnutrition has an intergenerational cycle. A malnourished mother will give birth to a low birth weight baby; the low birth weight baby will grow as a malnourished child, then to a malnourished teenager, then to a malnourished pregnant woman, and so the cycle continues.

b)--How can you help prevent some of the negative effects of malnutrition?

* ***Basic education***:

This is a very important for improving child nutrition and care. Therefore advocacy should be done to promote equal chances of education for both boys and girls since this is important to enable them to become better parents themselves.

* ***Healthy environment***:

Availability and easy access to safe and adequate water for drinking, cooking and cleaning are important aspects of each person’s development and the maintenance of their health.

* ***Maternal and childcare***:

Prevention of prematurity, proper antenatal care and promotion of good feeding practices are important interventions that may help to decrease malnutrition within a community.

* ***Healthy social and family life***:

Strong family planning services may help families to limit the number of children they have; social integration and communal care may support orphans and children with special needs.

* ***Proper agriculture***:

Diversification through planting the right number of different kinds of seeds should be promoted, and food distribution at household level should be equitable, giving children and pregnant mothers priority.

* ***Public health measures****:*

These include prevention and treatment of maternal infections during pregnancy and delivery. Immunizations against preventable diseases as well as an emphasis on growth promotion and monitoring activities are also important public health strategies to prevent malnutrition in the community. Part of my role includes working with other professionals and community leaders to help promote these strategies and help improve the nutritional status of people living in my community.

1. a)---Who are the individuals most vulnerable to;
2. Vitamin A deficiency----🡪Infants, Children under 5 years, pregnant & Lactating mothers.
3. Iodine deficiency disorder-🡪All ages & sexes but mostly fetus, children under 5 years, pregnant & lactating mothers.
4. Iron deficiency anemia in your community🡪Low birth weight infants, children from 6-24months,adolescent girls, pregnant & lactating mothers & people with chronic condition e,g,HIV/AIDs

b) ---- Imagine you have identified people in your community who are suffering from vitamin A deficiency, iodine deficiency disorder and iron deficiency anemia. What can you do to address these problems?

#### Strategies for the prevention of Vitamin A deficiency

#### -Promotion and support exclusive breastfeeding up to six months of age

#### -Vitamin A supplementation (VAS)

#### -Dietary fortification

* **Strategies for the prevention of Iodine deficiency disorder.**

-Universal iodization of salt for human and animal consumption

-Supplementation of iodine capsules to populations in areas where iodine deficiency is very common

* **Strategies for the prevention of iron deficiency anaemia**

**-**Supplementation of iron and folic acid for pregnant and lactating women

**-**Supplementation of Iron to children and adolescents

1. Identify at least four ways in which fiber helps us maintain a healthy digestive system.

* ***Digestive Health***

Dietary fiber keeps the digestive system functioning efficiently. It prevents constipation and encourages regular, comfortable bowel movements. Fiber can also prevent diverticular disease and irritable bowel syndrome. Soluble fiber can remedy mild diarrhea by binding water in the colon and firming the stool. Constipation often responds especially well to insoluble fiber

* ***Blood Cholesterol***

Soluble fiber is a powerful weapon against low-density lipoproteins, the “bad” variety of cholesterol that clogs arteries. Along with choosing healthy fats, eating soluble fiber is a first-line dietary strategy to improve cholesterol levels. Soluble fiber binds with dietary cholesterol in the gut, preventing it from entering into blood stream.

* ***Moderates Blood-Sugar Levels***

Fiber is a superstar when it comes to keeping blood glucose stable. It helps prevent blood-glucose spikes following carbohydrate consumption and allows Type 2 diabetics to maintain tighter control of their blood-sugar levels. However, everyone benefits from stable blood sugar, which provides consistent energy.

* ***Fitness Remedy.***

Weight-loss diets often trumpet the benefits of fiber, claiming that it helps dieters feel full and promotes weight loss. While fiber won’t cause a substantial weight loss all on its own, adding fiber to once diet is still a terrific choice to complement other weight-loss efforts. Instead of taking fiber supplements, the fiber from tasty plant-based foods such as vegetables, fruits, whole grains and legumes. These foods are not only fiber rich but also packed with water, vitamins,, minerals and photochemical to protect the overall health and well-being.