**Food Fortification and Supplementation**

Food Fortification

Food fortification or enrichment is the process of adding micronutrients to food. It can be carried out by food manufacturers, or by governments as a public health policy which aims to reduce the number of people with dietary deficiencies within a population. As defined by the World Health Organization (WHO) and the Food and Agricultural Organization of the United States (FAO) , fortification refers to "the practice of deliberately increasing the content of an essential micronutrient, ie. vitamins and minerals (including trace elements) in a food, so as to improve the nutritional quality of the food supply and to provide a public health benefit with minimal risk to health", whereas enrichment is defined as "synonymous with fortification and refers to the addition of micronutrients to a food which are lost during processing”

Adding micronutrients to common staple foods can significantly improve the nutritional quality of the food supply and improve public health with minimal risk.  The foods most commonly fortified are salt, wheat, corn, rice, bouillon cubes, soya sauce and other condiments.

Types of food Fortification

* Biofortification (i.e breeding crops to increase their nutrias value which includes both plant breeding and genetic engineering)
* Microbial biofortification and synthetic biology (i.e addition of probiotic bacteria)
* Commercial and industrial fortification (i.e flours, rice, oils)
* Home fortification (e.g vitamin D drops)

Advantages of food fortification

* Providing certain nutrients simultaneously in the same food improves utilization of certain vitamins and minerals eg vitamin C enhances the absorption of iron.
* Providing nutrients through the regular food supply and distribution system reduces cost.
* Does not affect organoleptic properties.
* Benefits every individual in life.

Disadvantages of food fortification

* Shelf life of fortified milled cereals is reduced.
* Regular quality control is essential.
* Prolonged cooking of fortified foods leads to roughly 90% loss of vitamin C.
* Fortified commodities are more expensive.

Supplementation

Supplements are pills or drinks containing substances people usually get from food that are given to patients who do not weigh enough or who are not able to take in enough of these substances in food. A supplement can provide nutrients either extracted from food sources or synthetic, individually or in combination, in order to increase the quantity of their consumption. The class of nutrient compounds includes vitamins, minerals, fibers, fatty acids and amino acids. Dietary supplements can also contain substances that have not been confirmed as being essential to life, but are marketed as having a beneficial biological effect, such as plant pigments or polyphenols.