Food Additives and Healthy Food

- ## Introduction

A food additive is any substance added to food. Legally, the term refers to "any substance the intended use of which results or may reasonably be expected to result (directly or indirectly) in its becoming a component or otherwise affecting the characteristics of any food. This definition includes any substance used in the production, processing, treatment, packaging, transportation or storage of food. The purpose of the legal definition, however, is to impose a premarket approval requirement. Therefore, this definition excludes ingredients whose use is generally recognized as safe (where government approval is not needed), those ingredients approved for use by FDA or the U.S. Department of Agriculture prior to the food additives provisions of law, and color additives and pesticides where other legal premarket approval requirements apply.

Direct food additives are those that are added to a food for a specific purpose in that food. For example, Xanthan gum, it is used in salad dressings, chocolate milk, bakery fillings, puddings and other foods to add texture, it is a direct additive. Most direct additives are identified on the ingredient label of foods.

Indirect food additives are those that become part of the food in trace amounts due to its packaging, storage or other handling. For instance, minute amounts of packaging substances may find their way into foods during storage. Food packaging manufacturers must prove to the U.S. Food and Drug Administration (FDA) that all materials coming in contact with food are safe before they are permitted for use in such a manner.

- **Following are some reasons why food additives are added to foods:**

1. To protect or improve food quality:

a- Preservatives:

It is used to slow product spoilage caused by mold, air, bacteria, fungi or yeast. In addition to maintaining the quality of the food, they help control contamination that can cause food borne illness. For example: **Sodium Nitrate**.

b- Antioxidants :

It used to prevent fats and oils and the foods containing them from becoming rancid or developing an off-flavor. They also prevent cut fresh fruits such as apples from turning brown when exposed to air. For example: **Ascorbic acid**.

2. To Improve or Maintain Nutritional Value:

They are supplemented substances include vitamins and minerals, they are added to many foods to make up for those lacking in a person's diet or lost in processing, or to enhance the nutritional quality

of food. Such fortification and enrichment has helped reduce malnutrition in the U.S. and worldwide. For example: **Vitamin C** which added to fruit juices.

3- Improve Taste, Texture and Appearance:

1- Sensory Additives:

a- Spices, natural and artificial flavors:

For example: **Monosodium Gultamate**.

b- Sweeteners:

They are added to enhance the taste of food, for example: **Aspartame**.

c- Food colors:

They are added to maintain or improve appearance, for example: **Erythrosine.**

2- Emulsifiers, Stabilizers, Thickeners and Leavening agents:

Emulsifiers keep oil and water mixed together, thickening agents are natural or chemically modified carbohydrates that absorb some of the water that is present in food, thereby making the the food thicker and stabilizing agents (stabilize factory made foods by keeping the complex mixtures of oils, water, acids and soilds well mixed. for example: Xanthan gum used in seafood dressings, frozen pizza and packet dessert, they are give foods the texture and consistency consumers expect, leavening agents allow baked goods to rise during baking.

3- Acids, alkalies and neutralizing agents:

Some additives help control the acidity and alkalinity of foods.

- **Harmful Effects Of Some Food Additives:**

There are approximately 3000 substances used in food processing, and these make up less than 1% of the total weight of our food supply. These substances have useful effects but some of them have toxic effects on health and behavior, for examples:

1- **Nitrates** are used as a preservative in foods such as bacon, hot dogs, and luncheon meat. They help prevent the growth of bacteria that cause botulism and also stabilize the red color in cured meats. When nitrates combine with amines present in the stomach and meat, nitrosamine is formed. Nitrosamine has been found to cause cancer in animals. The formation of nitrosamine is inhibited by ascorbic acid (vitamin C), so many companies add ascorbic acid to their products. While nitrates introduce only a small cancer risk, they're still probably worth avoiding.

2- **Monosoudium gultamate** used as food flavors such as chicken broth, chicken stock, fish sauce, potato chips and many fast foods. Large doses of monosodium gultamate have toxic effects on body like general body fatigue, numbness in some places, the speed of heart palpitations and Flutter.

3- **Tartrazine** used as a artifical food colors has been scientifically proven that his health damage to human and its side effects have allergies, abdominal pain and dizziness and urticaria, arthritis and its impact on behavior, irritability and discomfort and irregular sleep and depression and the lack the ability to learn and the speed of focus anger.

4- **Saccharin** is sweeting agent, which causes depression, dizziness, blurred vision and the risk of insomnia and nervousness and pain in head and hyperactivity is difficult to control and is characterized in children behavior, impulsive, indifference and lack of attention and high motor activity and the inability to do the hard work.

☒ Prevention Of Food Additives Pollution:

Any substance added to food need to be identified and to know the acceptable dose intake (ADI) which are set by the Food and Drug Administration (FDA) and the World Health Organization (WHO) and this dose must be safe and not have any health effects; but proved that some additives shows its effects on health, after long periods of use, so it must be reduce the contamination with these elements, therefore the Environment Health Administration in the Environmental Quality Sector recommends the following:

- Eating healthy foods such as fresh vegetables, fruits, fish, meat and away from canned foods as much as possible in order to secure better health and the environment free from pollution.

- Don't buy food products (food, beverage, canned) from anonymous places which do not have any control from the Ministry of Health in order to use food additives by random manner without taking any consideration about (ADI) acceptable dose intake of these substances.

- Don't eat fortified food with these additives continously to avoid the accumulation effects in the body.

- Decrease excessive daily use of food additives, for example, industrial food colors used in the sweets to avoid harmful effects on health.

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