

Food Fortification: Improving Diets and Health Understanding the Advantages, Drawbacks and Best Practices

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Description

The addition of micronutrients (vitamins and essential trace elements) to food is known as food fortification or enrichment. It can be done by food manufacturers or by governments as a public health policy to cut down on the number of people in a population who have dietary deficiencies. A region's predominant diet may be deficient in particular nutrients because of the soil there or because the staple foods themselves are deficient; In these situations, large-scale deficiency diseases can be avoided by adding micronutrients to condiments and staple foods.

Food Fortification Can Also Be Broken Down By the Stage At Which It Is Added

Fortification is defined as the practice of deliberately increasing the content of an essential micronutrient *i.e.*, vitamins and minerals (including trace elements) in a food to improve the nutritional quality of the food supply and to provide a public health benefit and to provide a health benefit with minimal risk, while enrichment is defined as synonymous with fortification and refers to the addition of micronutrients to a food which are lost during processing. The WHO and FAO have identified food fortification as the second of four strategies to begin reducing the global incidence of nutrient deficiencies. According to the FAO, cereals and products made from cereals are the most frequently fortified foods; dairy products, including milk; oils and fats; accessories for food; beverages other than tea; and formula for infants. It is anticipated that nutrient deficiency and undernutrition account for between 3 and 5 million annual deaths worldwide. Types Fortification can be found in common foods in two ways: Bringing back and adding. Because of the way grains are processed, flour loses its nutritional value; Iron, folic acid, niacin, riboflavin, and thiamine are added back into Enriched Flour. On the other hand, other foods that have been fortified contain micronutrients that are not present in nature but have been added to them. Orange juice, which is frequently sold with calcium added, is an example of this. Biofortification (breeding crops to increase their nutritional value, which can include both conventional selective

breeding and genetic engineering) Home fortification (example: wheat flour, corn meal, and cooking oils) vitamin D drops) the reason for this is that micronutrients play a crucial role in the growth and development of the body. These micronutrient deficiencies may result in malformations or even disease. Over 2 billion people worldwide suffer from a variety of micronutrient deficiencies, according to the WHO, FAO, and numerous other nationally recognized organizations. At the FAO/WHO International Conference on Nutrition in 1992, 159 nations made a commitment to assist in the fight against micronutrient deficiencies, emphasizing the significance of reducing the number of people lacking iodine, vitamin A, and iron. The discovery that approximately one in three people worldwide were at risk for either an iron, vitamin A, or iodine deficiency was a significant statistic that prompted these efforts. Food fortification is a step toward reducing the prevalence of deficiencies and the health conditions associated with them, despite the fact that it is acknowledged that this deficiency cannot be combated by itself. To ensure the nutritional equivalence of substitute foods such as to make butter and margarine similar in content, soy milk and cow's milk, *etc.* To act as a public health intervention to replace nutrients that were lost during product manufacturing (such as the manufacturing of flour) to make sure that foods made for special dietary needs (such as gluten-free, low-sodium, or other products made specifically for a person's special dietary needs) contain the right amount of vitamins and minerals. Food fortification has a number of advantages over other approaches to addressing nutrient deficiencies in populations. Among these are, but are not limited to: Treating a population without specific dietary interventions does not necessitate a shift in dietary habits, delivers nutrients continuously, does not require individual compliance, and has the potential to preserve nutrients more effectively when consumed on a regular basis.

Synthetic Micronutrients are Frequently Added to Foods as Fortification

Food companies have been criticized for indiscriminately enriching foods for marketing purposes, in addition to the criticism of government-mandated fortification. Concerns about

the safety of food led to legislation in Denmark in 2004 that restricted foods that were fortified with additional vitamins or minerals. The following items are prohibited: Rice Krispies, Shreddies, Horlicks, Ovaltine and Marmite. The fact that isolated nutrients added back into a processed food that has had many of its nutrients removed does not always result in the added nutrients being as bioavailable as they would be in the original, whole food is one factor that limits the benefits of food fortification. Skim milk, for instance, has had its fat removed and its vitamins A and D restored. Because vitamin A and vitamin D are both fat-soluble and water-soluble, people who consume skim milk without fats may not be able to absorb as many of these vitamins as they would if they consumed whole milk. On the other hand, the nutrient that is added as a fortificant may be more bioavailable than the nutrient that comes from food, as is the case with the folic acid that is used to boost folate intake. Cereal grain phytochemicals like phytic acid can also affect nutrient absorption, limiting the bioavailability of intrinsic and

additional nutrients and making fortification programs less effective. Different forms of micronutrients it is a concern that the legal definition of micronutrients does not distinguish between different forms, and that fortified foods frequently contain nutrients in a balance that would not be present naturally. For instance, food in the United States is fortified with folic acid, one of the numerous naturally occurring forms of folate, which only makes a small contribution to the folates found in natural foods. In many instances, like with folate, it is unknown whether this form of folic acid has any advantages or disadvantages. Even though other forms of micronutrients are safe at the same or much higher doses, certain forms can be actively toxic at sufficiently high doses. Both synthetic and naturally occurring vitamins exhibit this kind of toxicity. In comparison to other forms of vitamin A, such as beta carotene, retinol the active form of vitamin A is toxic at much lower doses. Menadione, a synthetic form of Vitamin K that is being phased out, is also known to be harmful.