

What is food fortification?

Food fortification, sometimes called ‘enrichment’, refers to the addition of one or more vitamins or minerals to a food product. In Canada, addition of these nutrients to food is regulated by Health Canada under the *Food and Drug Regulations*. Adding vitamins and minerals to foods helps to maintain and improve the nutritional quality of Canada’s food supply and can correct or prevent nutritional problems in the population. For example, in Canada, fluid milk fortified with vitamin D has almost eliminated childhood rickets (softening of bones), and fortification of salt with iodine has decreased the occurrence of goiter. Mandatory fortification of white flour, enriched pasta and cornmeal with folic acid has occurred in Canada since 1998 in response to evidence that folic acid reduces risk of babies being born with neural tube defects.

Existing regulations state that food products such as bread, cereal, pasta and skim milk may be fortified with vitamins and minerals in amounts lost during processing. Other products may be enriched to similar vitamin or mineral levels of foods for which they commonly substitute. For example, vitamins and minerals may be added to soy beverages, to obtain amounts that are similar to those in milk. Food fortification is also used to make sure that foods that are used for special dietary purposes contain appropriate nutrients in appropriate amounts. Examples of such foods include meal replacements, nutritional supplements, low sodium foods, gluten-free foods, formulated liquid diets and sugar-free foods

Under the *Food and Drug Regulations*, vitamins that can be added to foods include A, D, E, K, C, thiamin (B1), riboflavin (B2), niacin, vitamin B6, folate, vitamin B12, pantothenic acid, and biotin. Minerals that can be added to foods include sodium, potassium, calcium, phosphorus, magnesium, iron, zinc, iodide, chloride, copper, fluoride, manganese, chromium, selenium, cobalt, molybdenum, tin, vanadium, silicon and nickel.

Are there any health risks connected to food fortification?

Just as eating too little of a vitamin or mineral can lead to a deficiency, eating too much of a vitamin or mineral may cause health problems. For example, too much vitamin A can cause birth defects, too much folate can hide symptoms of a vitamin B12 deficiency which can result in permanent damage to the nervous system, and too much calcium can lead to kidney problems.

Through the *Food and Drug Regulations*, Health Canada regulates “mandatory” food fortification, to make sure that Canadians receive adequate amounts of nutrients, and it controls the upper limits of nutrient fortification, to ensure that Canadians do not consume unsafe amounts. The regulations also list the foods to which vitamins and minerals may be added, the vitamins and minerals permitted and the levels at which they may be added. Foods fortified to levels other than those approved under the *Food and Drug Regulations* may not be sold in Canada.

Since 1995, scientists in Canada and the United States have been working together to develop new nutrient recommendations based on the latest research. These new recommendations are called Dietary Reference Intakes (DRIs). DRIs are recommended amounts of vitamins, minerals and other important dietary components that individuals need to prevent deficiencies and to lower their risks of chronic disease. As part of the DRIs, Tolerable Upper Intake Levels (UL) have been established for most nutrients. A Tolerable Upper Intake Level for a specific nutrient is the maximum daily amount of this nutrient that is safe to consume. Continuing intakes above this amount pose a risk of adverse health effects - the higher the excess intake, the higher the risk to an individual’s health. The UL is now being used to set an upper limit for nutrient intakes in fortification regulations. To determine whether it is advisable to fortify specific foods with a particular nutrient, Health

Canada conducts a scientific assessment to determine how much of the nutrient Canadians are consuming from various foods in a typical day. Once this is known, a risk assessment can reveal whether fortifying specific foods with a particular nutrient will result in continuing daily intakes above the UL – which can be hazardous to health.

What are the new policy recommendations?

Health Canada has proposed some changes to update, expand and improve national food fortification policies. This means that a number of previously unfortified foods will have vitamins and minerals added in safe amounts, giving consumers more alternatives to meet their nutrient requirements. However, only foods that already have some nutritional value will be considered for fortification. Also under these new recommendations, more types of special purpose foods will be made available to consumers in order to meet the nutritional needs of specific segments of the population.

How does food fortification relate to nutrition labelling?

On January 1, 2003 new nutrition labelling regulations took effect and will require most labels on prepackaged foods to have a Nutrition Facts table in a standard form. The new regulations also update requirements for nutrient content claims and allow, for the first time in Canada, diet-related health claims to be made about foods. Added vitamins or minerals in fortified foods must also be declared on this label. Improved nutrition labelling on most prepackaged foods together with science-based health claims and nutrient-content claims can help consumers make informed choices about the foods they buy and eat.

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For more information on food fortification or other food safety topics, please call the Food Safety Network toll-free at 1-866-50-FSNET or visit our website at www.foodsafetynetwork.ca

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