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Editorial

Fortification of Wheat Flour With Iron: A National Fortification Program in Iran

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Food fortification with iron can be an inexpensive, simple and effective strategy for controlling and preventing iron deficiency and anemia in many countries (1). Since iron deficiency was one of the main public health problems in Iran, the Ministry of Health and Medical Education (MOH&ME) started technical and pilot studies on subjects about 16 years ago (in 2001). Based on the results obtained and the consensus that bread, the national staple food, was an ideal vehicle for iron fortification, a 6-year pilot study was conducted with wheat flour fortified with 30 mg iron and 1.5 mg folic acid per kg, in Bushehr province in the south of Iran. The study was a success; therefore, the project was scaled up to the whole country as a national program in 2007(2).

Iron is crucially important for normal functioning of the human body. Therefore, the diet must contain sufficient iron; however, it is known that not only dietary iron deficiency, but also excess iron can lead to severe diseases (3-5). Although iron overload is less common than iron deficiency, it can result in serious medical problems as a result of oxidative stress (6-7). So, despite the fact that Iran's flour fortification program provides about 40% of the average daily requirement of the general population, which is 19 mg (8) and is not likely to cause problems even for non-anemic members of the community, a study was conducted to investigate the effects of consumption of iron-fortified flour (for a duration of 32 and 64 weeks) on the iron status and oxidative stress biomarkers in non-anemic 40- to 65-year-old adults (9). Based on the findings, it was concluded that not all the flour marketed should be fortified and that some non-fortified bread should also be always accessible to those who have a nutritionally acceptable iron status (10).

According to evidence gathered in Iran and other countries (11) it is recommended to:

- Reconsider the level of iron in the national flour fortification programs;
- Monitor the national flour fortification programs;
- Develop food fortification program to prevent and control deficiencies of micronutrients other that iron as well;
- Promote nutritional awareness of the community in regions where there are ongoing flour fortification programs;
- Encourage bakeries to use fortified flour for bread-making; and
- Design a special sign to be used in each bakery offering bread made from fortified flour.
- produce non-fortified flour in the market for special dietary restrictions and the elderly (risk of iron toxicity for men and elderly).

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