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Editorial

Food fortification – should progressive nutritionists support it or not?

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There is only one way food fortification CAN be used to solve public health problems: it must be mandatory. The risks it can pose are real but rare. However, the benefits to the population as a whole when it is used to address public health problems related to nutrient deficiency far outweigh these risks. And the rare risks can usually be managed. These serious risks are actually, per se, not one of the two major problems that have given fortification a bad name: (1) in the general population, a lack of understanding of the concept of risk, and (2) among progressive nutritionists (and sometimes in laws or government policies), a lack of recognition of the implications of the differences between voluntary and mandatory fortification.

UNDERSTANDING RISK

To use a dramatic example related to the first case, millions of people worldwide take blood thinners. While on this drug, they could die from a serious bleeding event. But the odds of that happening are lower than the odds that they would die from a stroke otherwise.

Weighing competing risks in a case like this is a major underlying issue in mandatory food fortification. The common public failure to understand risk can be misused by food zealots to undermine fortification when it is being used as a public health measure – just like anti-vaxxers do. In both cases, an exaggerated fear of risk is often used to advocate for voluntary measures instead of mandatory ones. In both cases, this has several harmful effects at public health level, especially for low-income, rural, or poorly educated consumers.

Probably the major example of food fortification causing serious harm is when iodized salt is first introduced (or becomes mandatory for the first time). Older people suffering from mild to moderate iodine deficiency for years have developed larger, more efficient thyroids to compensate. After many years, their bodies can no longer adapt to the sudden availability of adequate iodine intake. The result is thyrotoxicosis. This causes a number of unpleasant symptoms, including difficulty sleeping, and can even be fatal (Todd et al. 1995).

How could this be managed? For many decades, European countries managed it through a rather heavy-handed approach: adding too little iodine to salt (or whatever vehicle they were using) to address the deficiency for the population as a whole. This is likely to have lowered the IQ of the entire deficient population to a small extent (Hetzel, 1989). (Iodine deficiency tends to cluster by geographic location.)

A better approach (and I have not seen examples of this, but would appreciate it if readers could flag for me any examples they know of) would be to alert primary health care in advance of the symptoms of thyrotoxicosis, ensuring that thyroid diagnostic tests are available at least at the district level. In addition, non-iodized salt should be available for these patients. Implementing voluntary fortification for everyone instead is not the way to do this!

In addition, I believe a large proportion of European governments have given in to food zealots' demands for not "adulterating" their food this way. Thus, these governments often do not mandate the fortification of any food or beverage with any nutrient. This is particularly sad in the case of folic acid, where a failure to fortify almost certainly leads to unnecessary instances of neural tube defects in newborns. Only Moldova and Turkey mandate folic acid fortification. The UK has recently done so, but this is not yet in effect.

VOLUNTARY VS MANDATORY FORTIFICATION

Let's move on to why fortification has gotten a bad name among progressive nutritionists. I believe this is mainly due to a failure to distinguish the policy implications of voluntary versus mandatory fortification.

One of the rational arguments used against mandatory fortification is the risk of excess intake of the nutrient(s) involved. For some nutrients (like vitamin B12), there is no such risk. For others, the upper reference intake level (UR) is so high that excess is highly unlikely. For others, excess causes no serious harm. For others, such as selenium, there is currently no basis for implementing food fortification, even if there is a moderate risk of deficiency in the population as a whole.

In the case of vitamin A in low-income countries, universal supplementation, beneficial where young child mortality is high, instead of being targeted to areas of high mortality, has continued to be implemented even where no longer needed, and, to prevent excess intakes in young children, the use of fortification is not considered (Greiner et al. 2019; Mason et al. 2015). Basically, this condemns the

commonly vitamin A-deficient pregnant woman to no access to any solution at the public health level. (High-level supplementation is not an option for them. They could supplement more often at lower levels but this is not a feasible approach at the public health level.)

The main case I am aware of where excess is fairly common and, in many cases, needs to be better managed is fluoride (usually using water as the vehicle). Wherever it is being implemented, the responsible authority should conduct regular monitoring. This could be achieved by conducting annual surveys that focus on the easily observable early signs of fluoride excess in children. Once a given threshold is passed, fluoridation levels should be decreased. This has actually occurred with respect to the recommended level of fortification in the US, which was reduced in 2015 from "up to 1.2 mg/L" to 0.7 mg/L.

A justifiable reason for being suspicious of food fortification is the food industry's love of it. But they love ONLY voluntary fortification. Indeed, in India, the salt industry is currently turning to the courts to convert the national mandate of salt fortification into a voluntary one (Sankar 2025).

Why does the food industry abhor mandatory fortification? It removes from their control a lucrative means of exploiting consumers through marketing and price manipulation. If all of a given product is fortified, touting the benefits fortification offers is a weaker argument for buying just their brand. They also cannot use fortification as an excuse for hiking up prices – the way the infant formula industry does for each new, inadequately proven substance they add to their product to make it "closer to breast milk." (Just like standing on a ladder makes you "closer to the moon.")

The most poignant example of price hikes undermining the public health benefits of fortification was what I witnessed in northwest Bangladesh. In 1989, fortified salt cost 7 taka compared to 5 for unfortified salt. Then the government and donor agencies made the huge mistake of promoting fortified salt while it was still not universally available. Over the next few years, its cost soared, eventually becoming twice as expensive as the commonly available (smuggled in from India) unfortified salt. Villagers would say things like "It was hard for me to pay 2 taka extra, but at least I bought it for my wife when she was pregnant and breastfeeding. But now I cannot afford to buy it at all."

In this case, because laws were involved, neither manufacturers nor retailers were responsible for the price hikes. Some shady, hard-to-locate "middleman" was the one taking advantage of the exploding demand for fortified salt.

Additionally, I believe it was a mistake to aim for the fortified salt to be of higher quality. This also increased its cost. Even poor quality (higher content of other substances, but especially moisture) local salt CAN be fortified, but several specific measures must be taken to ensure that this approach works.

CONFLICT OF INTEREST

None

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