



## Team Name: Golden Food Solution Providers

Group Members: Dawn Wannasin, Pegah Kargarghomsheh, Tatiana Daza Merchan, Kanon Kobata

### Class Assignment: Functional Foods for Improved Health

**Problem:** The modern food supply is leading to increases in many chronic diseases, including obesity, diabetes, heart disease, and stroke. These diseases are reducing the quality and length of people's lives, as well as putting huge economic burdens on the health care system.

**Assignment:** Consider the most common foods that may be contributing to this problem (see below). Select one of these foods. Discuss how you would create a healthier alternative.

**Your New Product Name: ICereal Plus™.**

#### ***Product Description***

- Briefly describe the characteristics of the new food product you will develop. How would it look, feel, taste? What are the beneficial nutritional attributes?**

Many US Infants and toddlers are well-nourished or even over-nourished. Despite an abundant food supply, some of them in this country can still be undernourished or deficient in Iron, which has an irreversible effect on their mental, motor, and behavioral functions. Thus, developing an easy-to-prepare product, fortified with Iron would help to decrease the iron deficiency prevalence in infants and toddlers.

In this regard we are going to launch a **Cereal-based complementary food product, fortified with iron and vitamin C**. Cereal (wheat and rice) is a highly effective resource for iron fortification for babies 6 months onwards and toddlers to meet their nutritional needs. This product not only contributes to providing the daily energy and nutrition for babies but also helps to meet their Iron daily needs ( 7-11 mg/day). According to nutritional recommendations Vitamin C increases iron absorption, so it is also added to the product to increase the absorption of iron in babies. The distinct flavor of iron is covered by baby-grade flakes of dried fruits as a flavour. This product will support the babies and toddlers to have enough daily iron intake and reduce the risk of mental health and visual issues, which are caused by iron deficiency.

#### ***Product Design***

- List the key factors you would consider when developing your new product.**
  - High prevalence of iron deficiency and anemia associated with iron deficiency in infants



## Team Name: Golden Food Solution Providers

Group Members: Dawn Wannasin, Pegah Kargarghomsheh, Tatiana Daza Merchan, Kanon Kobata

older than 6 months could reach levels of 40% .

- Iron deficiency anemia is considered preventable by supplementation.
- Iron supplementation by commercially available products presents barriers associated with poor taste and possible side effects (Powers et al., 2020).
- The daily recommended amount of iron for infants and toddlers (7-11 mg/day), one meal of this product (50 gr) can provide 4 mg/day of Iron.
- Ingredient that can assist in iron absorption -> Vitamin C
- Adding flake of fruits as natural flavors
- Powdered product packaged in cans (400 g/can)
- Easy to make product/ by adding water ( for milk allergen babies) or milk
- Marketing based on its nutritional value: “At least one meal per day can meet half of your toddlers Iron needs”
- We will advertise our product in magazines, TV programs, podcasts and such things which are more likely to be watched or heard by parents, in particular mothers.
- The color of the package should be representative of cereal ( like depicting rice or ear of wheat),

### **Product Marketing:**

- **Briefly highlight how you would market this product to consumers (what evidence would you need to make any claims on the label?)**

Our target group for this product is the infants (older than 6 months) and toddlers in low and middle income families which may not provide nutritious food for their babies because of lack of money and time in food making . Iron deficiency among infants and toddlers is one of the most serious health issues, causing numbers of them to not reach their potential growth in mental and behavioral aspects. The claim of this product would be “Iron plus C for supporting mental growth” and “ Smart Future with **ICereal Plus**™ “

We will market this complementary food as a nutrient meal, easy to make and no preservative product, and the name of ‘Plus’ is an indicator showing other than Iron and Cereal, this product includes other micronutrients like Vitamin C. We would need the daily recommended amount of iron information (7-11 mg/day), the amount of the iron in our product (4 mg/day), and the correlation between iron intake, mental health, and visual issues to make these claims.



## Team Name: Golden Food Solution Providers

Group Members: Dawn Wannasin, Pegah Kargarghomsheh, Tatiana Daza Merchan, Kanon Kobata

### Resources:

Top sources of calories in US Diet: Cakes, cookies, doughnuts, breads, chicken dishes, sugary beverages, pizza, alcohol, pasta, tortillas, burritos, tacos, beef dishes, dairy desserts, chips, burgers

**Food Fix, Mark Hyman (p. 133)**

- Marketing as an enriched product to prevent visual and cognitive retardation caused by iron deficiency
- Iron-fortified foods for infants 6 month onwards and toddlers
- Complementary fortified food
- Cereal-based product
- Vitamin C fortified to improve iron absorption
- Suitable for breastfeed Infants older than 6 months and toddlers
- Widely recommended for babies whose mothers work
- Naturally made/ No preservation/ Natural flavors

### References:

Abrams, S. A., Hampton, J. C., & Finn, K. L. (2021). A Substantial Proportion of 6- to 12-Month-Old Infants Have Calculated Daily Absorbed Iron below Recommendations, Especially Those Who Are Breastfed. *Journal of Pediatrics*, 231, 36-42.e2.

<https://doi.org/10.1016/j.jpeds.2020.10.071>

Poletti, S., Gruissem, W., & Sautter, C. (2004). The nutritional fortification of cereals. In *Current Opinion in Biotechnology* (Vol. 15, Issue 2, pp. 162–165).

<https://doi.org/10.1016/j.copbio.2004.03.002>

Lane, D. J. R., & Richardson, D. R. (2014). The active role of vitamin C in mammalian iron metabolism: Much more than just enhanced iron absorption! In *Free Radical Biology and Medicine* (Vol. 75, pp. 69–83). Elsevier Inc. <https://doi.org/10.1016/j.freeradbiomed.2014.07.007>

Powers, J. M., Nagel, M., Raphael, J. L., Mahoney, D. H., Buchanan, G. R., & Thompson, D. I. (2020). Barriers to and facilitators of iron therapy in children with iron deficiency anemia. *The Journal of pediatrics*, 219, 202-208.