

# Baby foods take center stage in push for more safety and quality

January 25 2023, by Daniela de Lorenzo

---



Along with breast milk, baby foods and formulas are key to infants' diets. Credit: Stephen Andrews on Unsplash

Researchers are joining forces with the food and health industries to tighten controls and improve nutrition for infants and children.

If we are what we eat, as the saying goes, [food quality](#) is key to our health. And as food production and trade increase in response to greater global demand, controls on safety and quality have become even more vital.

The impact of diet on health is hard to overstate. Obesity worldwide has almost tripled since 1975 and, in Europe, [affects almost 60% of adults and nearly one in three children](#). Diabetes is also on the rise and [Europe has a markedly high number of children with type 1—295,000 in 2021](#).

## Quality controls

Eating a varied and healthy diet can enhance overall well-being and reduce the risk of long-term illness. In addition, consumers are demanding greater food-chain transparency following [food-fraud incidents](#) such as the contamination of infant milk formula with melamine in 2008, the discovery of fipronil in eggs in 2017 and sporadic outbreaks of salmonella.

"Food safety systems in Europe are generally effective, but we believe that it is possible to further improve the safety and quality levels," said Dr. Erwan Engel, research director at the French National Institute for Agriculture, Food and Environment (INRAE).

Engel coordinates the [SAFFI](#) project that brings together major research organizations and infant-food producers from Europe and China. With babies, children and [young people](#) being more vulnerable and needing high-quality nutrition to grow, the project is investigating ways to ensure greater safety in production.

Other than breast milk, infant formulas and baby foods are the most important part of a child's diet in the first year of life. Preventing microbial or chemical contamination in the processing chain is a priority.

## 60 million mouths

SAFFI is addressing food for the EU's 15 million and China's 45 million children under the age of three. The partners are focusing on four popular infant-food lines: formula, sterilized mixed vegetables with meat or fish, infant cereals and fruit purees.

The project has carried out tests on the premises of five participating international infant-food companies—Netherlands-based FrieslandCampina, HiPP in Germany, Greek producer YIOTIS and two Chinese companies, Beingmate and YFFC.

The aim is to identify the main risks from both microbial hazards, including bacteria, and potential chemical contaminants in the food chain.

Chemical contaminants include environmental pollutants such as dioxins or lead, crop-treatment residues like pesticides and substances generated during processing including furan.

"We need to convince the industry that it is important to focus on chemicals too," said Engel. "Although the effects on health are not as immediate as for microbes, they can still be significant in the longer term."

SAFFI also aims to help food producers and authorities predict where potential problems could arise and, as a result, reduce the threat of contamination at every stage of production.

Classical processes based on thermal treatments, for instance, could be replaced with pulse combustion dryers, radio frequency heating and high-pressure processing, which are better at sterilizing foods while maintaining the optimal nutritional value of fresh products.

"We check the effectiveness of these innovative processing technologies to control the growth, inhibition and inactivation of pathogens, as well as their ability to slow food degradation and limit the integration of certain chemicals," said Engel.

## Healthy trade-off

The [food and drinks sector](#), which includes foods for infants, is a major contributor to the EU economy with exports of €110 billion in 2019. By investing in training and sharing know-how, SAFFI will help to improve [safety standards](#) in the EU and China and reduce potential barriers to trade.

It will cooperate with other research projects under the [EU-China Food, Agriculture and Biotechnology \(FAB\) Flagship Initiative](#), with all seeking continued improvement in food safety control.

Such cooperation can increase EU-China commerce and give European food companies greater opportunities to expand on the international market. In addition, the standards laid down by SAFFI in the infant-food sector could be extended to other food categories, according to Engel.

## Tailor-made diets

When it comes to health, food variety and quality also count. A balanced diet can help prevent illnesses from arising in the first place. It can also enable people with serious diseases to heal and have more stable lives.

However, people respond differently to the same foods or nutrients, depending on genetic and lifestyle factors. These include stress, exercise levels, individual microbiome composition and exposure to environmental toxins.

The [NUTRISHIELD](#) project has set out to create personalized diets tailored to individual biomarkers, with a particular focus on children with obesity and/or diabetes and on lactating mothers.

The project is analyzing a range of biomarkers related to nutrition and health disorders, taking into account the way each child responds to different nutrients and food types.

NUTRISHIELD involves research and clinical partners from across Europe. The project is coordinated by a Swiss company called Alpes Lasers, which has developed specialized mid-infrared laser technology for use in clinical settings.

## **Laser-sharp**

"Unlike current processes used to analyze body fluids, laser technology can work with very small samples of urine—a necessity when little patients can only produce minimal quantities," said Miltos Vasileiadis, business developer and project manager at Alpes Lasers.

The company has provided project partners with laser technology used to build analysers for urine, breath and human milk. Samples collected are analyzed at a molecular level, allowing nutritionists to give detailed, personalized and easy-to-follow advice.

This may include the amount of each food group an individual needs and how often, how much exercise and sleep are necessary and even which particular variety of fruit or grain is required for proper nutrition.

A study on young diabetes patients is running at the San Raffaele Hospital in Milan, Italy, while the Health Research Institute Hospital La Fe in Valencia, Spain is working with lactating mothers and newborns. Studies conducted at Radboud University in the Netherlands aim to

understand how nutrition can assist and enhance cognitive development in children.

The tools developed by NUTRISHIELD are designed to be portable and easy to use, making biomarker analysis faster and more cost-effective. In the longer term, these could be used in different medical settings to assist patients of any age.

## **FOOD 2030**

The EU's FOOD 2030 research and innovation policy aims to transform food systems and ensure everyone has enough affordable, nutritious and safe food to live a healthy life.

The initiative covers the entire food system, linking primary production sectors (such as agriculture and fisheries) to [food](#) processing, retail and distribution, packaging, waste and recycling, catering services and consumption.

### **More information:**

- [NUTRISHIELD](#)
- [SAFFI](#)
- [Food 2030: Research and innovation policy to make our food systems ready for the future](#)

Provided by Horizon: The EU Research & Innovation Magazine

Citation: Baby foods take center stage in push for more safety and quality (2023, January 25)  
retrieved 4 May 2024 from  
<https://medicalxpress.com/news/2023-01-baby-foods-center-stage-safety.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.