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Hidden hunger in Europe: well fed yet undernourished

EU-funded researchers are exploring the issue of hidden hunger in Europe to understand why people who have enough food to eat may not be getting sufficient micronutrients to maintain good health.

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With nearly 30 years of experience in human nutrition research and teaching, Professor Kevin Cashman has dished out his fair share of nutritional advice to individuals, the media and government.

Now Chair of Food and Health at University College Cork, Ireland, Cashman is coordinating a wide-ranging EU-funded research initiative called Zero_Hidden Hunger_EU along with his colleague Professor Mairead Kiely, recent former head of the University's School of Food and Nutritional Sciences. The multinational research team they lead is exploring the issue of hidden hunger in Europe.

Hidden hunger is when a person may have enough to eat, but is not getting sufficient amounts of one or more of the crucial vitamins or minerals needed to maintain good health.

The research kicked off in January 2024 and will conclude in December 2027. It brings together experts from 10 EU countries, the UK and Switzerland, as well as the International Agency for Research on Cancer, the European Food Information Council and the European Public Health Alliance.

The researchers are working together to better understand how widespread the problem of hidden hunger is and to propose solutions that also increase the sustainability of our food system generally.

The need to source vitamins and minerals from sustainable food systems is central to the work being carried out. This is part of the EU's general push to promote production and processing practices that are environmentally friendly and resilient as part of its Food 2030 policy.

Hidden hunger, hidden impact

When you are not eating enough food, the signs of starvation are generally easy to spot. But if you are not getting enough micronutrients from the food you eat, the negative effects might go unnoticed until serious damage is done, and sometimes not even then.

The effects of most micronutrient deficiencies may not be outwardly visible. That is why the World Health Organization (WHO) has used the term “hidden hunger” to describe this particular form of malnutrition.

Cashman, a recent past member of the WHO’s expert group on nutrient requirements for infants and young children, has focused his research primarily on vitamins D and K, as well as diet and bone health.

“The symptoms of a micronutrient deficiency can be wide-ranging, but difficult to spot,” he said.

Some micronutrient deficiencies are more obvious. Not enough folate (vitamin B9) in the diet of pregnant women can lead to babies born with brain or spinal cord defects, for example. A global study suggests that one in five women of reproductive age in the UK may not be getting enough folate.

The impact of other deficiencies can be less immediately visible. If your body does not get enough micronutrients, this can affect the metabolism and multiple organs may slowly deteriorate. Children are especially vulnerable because their bodies are so demanding.

“Iron and zinc are crucial for growth and development. Vitamin D and calcium are also essential nutrients for supporting children as they develop,” said Cashman.

Increased health risk

Kiely, who has over two decades of research experience in human nutrition and health, stresses the relevance of hidden hunger in adults too.

“People might connect a lack of iron with anaemia or tiredness. But they don’t necessarily connect a lack of calcium with high blood pressure during pregnancy,” said Kiely. Calcium helps blood vessels tighten and relax when they need to, lowering blood pressure.

According to her, people can live for a long time with a low intake of essential nutrients, but over time, their cellular metabolism decreases. This affects all major organs, including the immune system, and can lead to an increased risk of disease.

“This can put them at risk of heart disease and stroke, or leave them more vulnerable to viral or bacterial infections,” she said.

Common deficiencies

The EU-funded researchers are focusing on nutrients of particular concern. This includes minerals like iron, calcium, iodine, selenium, magnesium, potassium and zinc. The main vitamins of interest include vitamin D, folate, vitamin B12 and vitamin A.

Certain parts of the population are more likely to suffer from deficiencies – the elderly, growing children and pregnant women, for instance. Altogether, they estimate that as many as 70% of the population are at risk of micronutrient deficiency.

Diet can also put some people at risk. People who follow a vegan diet are at greater risk of B12 deficiency, while those avoiding dairy may not get enough riboflavin, calcium or iodine. These are glimpses of a bigger picture, but important pieces of the puzzle are missing.

“The key problem is that we don’t know how prevalent micronutrient malnutrition is,” said Cashman.

Around 30% of children under 5 had iron deficiency, according to surveys in the UK. Cashman says that we do not know what the number is for the rest of Europe. These gaps in knowledge make it difficult for policymakers and politicians to decide how best to resolve the issue.

Nutrient-rich

One solution is for people to take supplements, but that is something that Cashman believes perhaps only a third of the population actually do.

“You can give nutritional guidance,” said Cashman, “but it is not always taken up enough to have an impact on the population’s health.”

Another option is to put micronutrients directly into common foods such as milk, cereals and bread.

There is a lot of variation in this approach within Europe and globally. South America, Australia, the US and Canada require certain foods to be enriched with folic acid (a synthetic form of vitamin B9), for example, while most of Europe takes a voluntary approach. A recent study in the Lancet showed the impact of these approaches on folic acid levels and health.

“Trying to improve the food system by putting more micronutrients into it has been shown to have the widest reach,” said Cashman. But it is ultimately up to the governments of EU countries to decide whether they want to adopt a food fortification strategy, he acknowledged.

Digging for data

Decisions by policymakers will be more straightforward once Europe better understands how widespread the problem of hidden hunger is and who is most impacted.

“The data gaps are massive. You have to fill them before you can make policy,” said Cashman.

Cashman attended the recent Nutrition for Growth (N4G) international summit in Paris, France, on 26 and 27 March 2025 to share what the team has learned so far about micronutrient deficiencies in Europe.

Held every four years, N4G gathers governments, international organisations, businesses and civil society to mobilise commitments and resources aimed at improving nutrition worldwide.

Cashman believes Europe can learn from countries in Africa and Asia, where problems of malnutrition are more widespread and where the impact of micronutrient deficiency on health and the economy has been more widely studied.

According to Cashman, the analyses carried out suggest that for every euro or dollar spent on improving nutrition, thousands can be saved in reduced healthcare costs. He hopes that the data from Europe will contribute to the combined effort to improve nutrition for all and increase the sustainability of food production.

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- Food 2030
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