

- Convenience foods

## RAW DATA REQUIRED

### How bad are ultraprocessed foods, really?

Bangkok Post · 21 May 2024 · 4 · ALICE CALLAHAN

In the mid-1990s, Carlos Monteiro, a nutritional public health researcher in Brazil, noticed something alarming. Obesity rates among children in his country were rising rapidly.



To understand why, he and his colleagues at the University of São Paulo scrutinised data on the food buying patterns of Brazilian households to see if they had changed in recent years. The researchers found that people were purchasing less sugar, salt, cooking oils and staples such as rice and beans, and more processed foods such as sodas, sausages, instant noodles, packaged breads and cookies.

To describe that second category of food, Monteiro said, the team introduced a new term into the scientific literature — ultraprocessed foods, or UPFs — and defined it. They would later link UPFs to weight gain in children and adults in Brazil.

Since then, scientists have found associations between UPFs and a range of health conditions, including heart disease, Type 2 diabetes, obesity, gastrointestinal diseases and depression, as well as earlier death.

That's concerning, experts say, since ultraprocessed foods have become a major part of people's diets worldwide. They account for 67% of the calories consumed by children and

teenagers in the United States, for example.

But many questions remain. What are ultraprocessed foods, exactly? And how strong is the evidence that they're harmful? We asked experts to answer these and other questions.

### WHAT ARE ULTRAPROCESSED FOODS?

In order to study foods based on how they were processed, Monteiro and his colleagues developed a food classification system called Nova, named after the Portuguese and Latin words for new. It has since been adopted by researchers across the world.

The Nova system sorts foods into four categories:

- Unprocessed or minimally processed foods, such as fresh or frozen fruits and vegetables, beans, lentils, meat, poultry, fish, eggs, milk, plain yoghurt, rice, pasta, corn meal, flour, coffee, tea and herbs and spices.
- Processed culinary ingredients, such as cooking oils, butter, sugar, honey, vinegar and salt.
- Processed foods made by combining foods from Category 1 with the ingredients of Category 2 and preserving or modifying them with relatively simple methods such as canning, bottling, fermentation and baking. This group includes freshly baked bread, most cheeses and canned vegetables, beans and fish. These foods may contain preservatives that extend shelf life.
- Ultraprocessed foods made using industrial methods and ingredients you wouldn't typically find in grocery stores — such as high-fructose corn syrup, hydrogenated oils and concentrated proteins like soy isolate. They often contain additives such as flavourings, colourings or emulsifiers to make them appear more attractive and palatable.

Think sodas and energy drinks, chips, candies, flavoured yoghurts, margarine, chicken nuggets, hot dogs, sausages, lunch meats, boxed macaroni and cheese, infant formulas and most packaged breads, plant milks, meat substitutes and breakfast cereals.

“If you look at the ingredient list and you see things that you wouldn't use in home cooking, then that's probably an ultraprocessed food,” said Brenda Davy, a nutrition professor at Virginia Tech in the US.

The Nova system notably doesn't classify foods based on nutrients such as fat, fibre, vitamins or minerals. It's “agnostic to nutrition”, said Maya Vadiveloo, an associate professor of nutrition at the University of Rhode Island.

That has led to debate among nutrition experts about whether it's useful for describing the healthfulness of a food, partly since many UPFs — like whole grain breads, flavoured yoghurts and infant formulas — can provide valuable nutrients, Vadiveloo said.

### ARE ULTRAPROCESSED FOODS HARMFUL?

Most research linking UPFs to poor health is based on observational studies, in which researchers ask people about their diets and then track their health over many years. In a large review of studies that was published in 2024, scientists reported that consuming UPFs was associated with 32 health problems, with the most convincing evidence for heart disease-related deaths, Type 2 diabetes and common mental health issues such as anxiety and depression.

Such studies are valuable, because they can look at large groups of people — the 2024 review included results from nearly 10 million — over the many years it can take for chronic health conditions to develop, said Josiemer Mattei, an associate professor of nutrition at the Harvard T.H. Chan School of Public Health. She added that the consistency of the link between UPFs and health issues increased her confidence that there was a real problem with the foods.

But the observational studies also have limitations, said Lauren O'Connor, a nutrition scientist and public health researcher who formerly worked at the US Department of Agriculture and the National Institutes of Health. It's true that there is a correlation between these foods and chronic diseases, she said, but that doesn't mean that UPFs directly cause poor health.

O'Connor questioned whether it's helpful to group such “starkly different” foods — such as Twinkies and breakfast cereals — into one category. Certain types of ultraprocessed foods, such as sodas and processed meats, are more clearly harmful than others. UPFs such as flavoured yoghurts and whole grain breads, on the other hand, have been associated with a reduced risk of developing Type 2 diabetes. Clinical trials are needed to test if UPFs directly cause health problems, O'Connor said. Only one such study, which was small and had some limitations, has been done, she said.

In that study, published in 2019, 20 adults with a range of body sizes lived in a research hospital at the National Institutes of Health for four weeks. For two weeks, they ate mainly unprocessed or minimally processed foods, and for another two weeks, they ate mainly UPFs. The diets had similar amounts of calories and nutrients, and the participants could eat as much as they wanted at each meal.

During their two weeks on the ultraprocessed diet, participants gained an average of 0.8kg and consumed about 500 calories more per day than they did on the unprocessed diet. During their time on the unprocessed diet, they lost about 0.8kg.

That finding might help explain the link between UPFs, obesity and other metabolic conditions, said Kevin Hall, a nutrition and metabolism researcher at the National Institutes of Health, who led the trial. But the study needs to be replicated, which Hall is in the process of doing now.

#### WHY MIGHT UPFS BE HARMFUL?

There are many “strong opinions” about why ultraprocessed foods are unhealthy, Hall said. “But there's actually not a lot of rigorous science” on what those mechanisms are, he added.

Because UPFs are often cheap, convenient and accessible, they're probably displacing healthier foods from our diets, Hall said. But he and other scientists think that the foods could be having more direct effects on health. They can be easy to overeat — maybe because they contain hard-to-resist combinations of carbohydrates, sugars, fats and salt, are high-calorie and easy to chew. It's also possible that resulting blood sugar spikes may damage arteries or ramp up inflammation, or that certain food additives or chemicals may interfere with hormones, cause a “leaky” intestine or disrupt the gut microbiome.

Most researchers think there are various ways the foods are causing harm. “Rarely in nutrition is there a single factor that fully explains the relationship between foods and some health outcome,” Vadeloo said.

#### WHAT SHOULD WE DO ABOUT ULTRAPROCESSED FOODS?

In 2014, Monteiro helped write new dietary guidelines for Brazil that advised people to avoid ultraprocessed foods.

Other countries such as Mexico, Israel and Canada have also explicitly recommended avoiding or limiting UPFs or “highly processed foods”. The US dietary guidelines contain no such advice, but an advisory committee is currently looking into the evidence on how UPFs may affect weight gain, which could influence the 2025 guidelines.

It’s difficult to know what to do about UPFs in the United States, where so much food is already ultraprocessed and people with lower incomes can be especially dependent on them, Hall said.

“At the end of the day, they are an important source of food, and food is food,” Mattei added. “We really cannot vilify them.”