

Ultra-processed foods: largest ever review shows many ill effects on health—how to understand the evidence

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Ultra-processed foods, such as cereals and fizzy drinks, have been linked to 32 harmful health effects, according to the largest review of the evidence [to date](#).

Globally, [1 in 5 deaths](#) are thought to be due to [poor diet](#), and the role of ultra-processed foods or UPFs has attracted much attention in many studies over recent years.

[UPFs were first defined](#) around 15 years ago to allow researchers to investigate the effect of food processing on health. This new study, called an "umbrella review", analyzed many recent studies, involving almost 10 million people, to bring together much of the available data to give an overall picture of how UPFs affect our health.

The results implicate the consumption of large proportions of UPFs in a diet with poor health outcomes and [early death](#) from a range of conditions, including heart disease, type 2 diabetes, obesity and poor mental health.

Diets containing high proportions of UPFs are undoubtedly bad for your health, and the new study supports the links to a wide variety of diseases. But questions remain about the specific mechanisms by which these foods make us ill.

Researchers have proposed [several mechanisms](#) over the years. These include poor nutritional quality, as some UPFs can be high in fat, sugar and salt, low in fiber and deficient in essential vitamins, minerals and antioxidants.

Other mechanisms include a [lack of structure and texture](#), which speeds up eating, increases blood sugar levels and is less effective at reducing appetite. Much attention has also [focused on food additives](#) and other chemicals, either added to food or as contaminants from packaging or the environment.

Quality of evidence varies

An interesting aspect of the current work is the fact that the strength of the results among the studies was varied, and some of the correlations were weak. This is probably in part due to the wide range of foods contained within the UPF category.

The definition identifies foods that may contain additives and chemicals and are intensely processed using refined and reconstituted ingredients, which consumers may not be familiar with. This covers foods as diverse as ice-cream, snacks, wholemeal bread, processed meats and low-fat spreads. These very different foods containing very different ingredients and nutrient contents are probably going to have very different effects on our health.

Another important factor to consider is that these studies are large, population-level studies, where thousands of people record their normal dietary intake and health status. The analysis takes into account ("adjusts for") various factors, such as age, gender and lifestyle, that can skew the figures.

However, the results can only show a relationship between dietary intake and health. They don't provide direct evidence of the mechanisms involved. We urgently need new research to understand how and why certain foods can cause ill-health.

Although some direct studies are possible, the long-term health effects of, for example, consuming high levels of food additives could be difficult and ethically questionable. But there is an opportunity here to investigate these effects in more detail using existing data. As more studies are published, the amount of data should surely allow us to focus on different forms of UPFs to identify the best and the worst.

Given the huge amount of data in the umbrella review, it would be interesting to extract some more precise data to help identify which

foods we should avoid.

Time to delve deeper

There is a huge range of foods contained within the UPF category, with an equally diverse range of nutrient contents. Commercial wholemeal bread is classified as a UPF as is ice-cream, doughnuts and fried snacks. So it is highly likely that different UPFs will have a wide range of health effects.

Also, mechanistic studies where [human subjects](#) are fed specific foods or ingredients in a controlled manner, as well as more detailed statistical analysis of the existing studies, should help us to identify which UPFs to avoid, which are safe, and which may even be beneficial as part of a healthy, balanced diet.

One thing is certain, these studies should help inform advice about curbing our consumption of UPFs that are clearly detrimental to health. Conversely, we should also aim to identify what aspects of these foods are the most dangerous, so that food manufacturers can eliminate them from our diets, as has been achieved with harmful ingredients such as [trans fats](#) and some [artificial colors](#).

Many people rely heavily on commercial, processed food products, and we need to ensure that in the future, these foods are safe and nutritious, particularly for poor and vulnerable groups.

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