mental/physical health

The Overconsumption of Ultra-Processed Foods in the United States

Summary+

The consumption of ultra-processed foods (UPFs) in America is at an all-time high, with over 50% of daily calories eaten being sourced from UPFs. The increase of consumption of UPFs is due to the growing population, urbanization, and industrialization. UPFs lead to declines in the physical health and mental health of the US population, as those who consume higher amounts of UPFs are more likely to be depressed, overweight, and have a higher all-cause mortality risk. The production of ultra-processed foods also disrupts the health of the climate due to unsustainable farming and livestock practices. The best practices for alleviating the overconsumption of UPFs include responsibility at a public policy level. Government legislation on UPFs is an effective avenue for regulations to be placed on a largely unchecked food processing and distribution industry.

Key Takeaways+

- UPFs currently make up over half of the calories in the American diet.¹
Increased consumption of UPFs leads to increased risk for all-cause and cause-specific mortality, cardiovascular disease, overweight and obesity, increased fat deposition, diabetes, cancer, and gastrointestinal diseases.\(^2\)

For every 10% increase in calories consumed as UPFs per day, adults experience an 11% higher risk of depression.\(^3\)

Producing UPFs encourages the unsustainable practices of industrial factory farming and mono-crop cultivation, as well as producing harmful emissions and runoff.\(^4,5\)

Multi-component intervention, including change in policy, is the most effective way to improve nutrition inequalities.\(^6\)

Key Terms+

**Additives**—Any of various chemical substances added to processed foods, or other foods produced on an industrial scale, to improve safety, increase the amount of time a food can be stored, or modify sensory properties of food.\(^7,8\)

**All-cause mortality**—All-cause mortality is the death rate from all causes of death for a population in a given time period.\(^9\)

**BMI**—BMI is an estimate of body fat that is measured by dividing weight by height squared. It is used as a gauge for health, especially at the population level.\(^10\)

**Cardiovascular disease**—Cardiovascular disease (CVD) is a general term for conditions affecting the heart or blood vessels. It is usually associated with a build-up of fatty deposits inside the arteries and an increased risk of blood clots.\(^11\)

**Cause-specific mortality**—Cause-specific mortality is the death rate representing a specified cause of death in the absence of other causes of death.

**Deforestation**—Deforestation is the purposeful clearing of forested land, usually to make space for agriculture or animal grazing land.\(^12\)

**Hermetic bottling**—Hermetic bottling is a bottling process that is sterile and airtight, gas can neither enter nor escape the sealed bottle.\(^13\)

**Industrial factory farming**—This is the lay term for a concentrated animal feeding operation (CAFO). CAFOs are classified as facilities that keep a very large number of live animals confined for more than 45 days per year and bring food into their enclosures rather than allowing them to graze. Numbers of livestock are typically at least 1,000 beef cattle, 700 dairy cows, 2,500 large pigs, or 82,000 egg-laying hens, for reference.\(^14\)
Mono-crop cultivation—Monocropping is the agricultural practice of growing a single crop year after year on the same land, in the absence of rotation through other crops, or growing multiple crops on the same land.\textsuperscript{15}

Non-communicable disease—Non-communicable diseases are diseases that are not spread through infection or through other people, but instead are typically caused by unhealthy behaviors.\textsuperscript{16}

Slash-and-burn farming—Slash-and-burn farming is a method of cultivation in which forests are burned and cleared for planting crops different from the ones that were already growing there.\textsuperscript{17}

Shelf stable—Shelf stable foods are foods that can be stored for long periods of time in ambient conditions without spoiling.\textsuperscript{18}

Context

Q: What are ultra-processed foods?

A: Ultra-processed foods (UPFs) are foods that are typically high in sugar, salt, and fat while being low in fiber and micronutrients.\textsuperscript{19} Some examples of UPFs are foods such as candy bars, hot dogs, chips, granola bars, chicken nuggets, and other similar foods made for convenience and taste.\textsuperscript{20,21} “Ultra-processed” is a technical term for these types of foods that is part of a food classification hierarchy called the NOVA classification system. The NOVA system classifies all types of food, starting with a tier for “minimally processed” foods.\textsuperscript{22,23} This first category includes foods that are either whole or have undergone processes that change their original state but do not add anything to the original food. These processes include drying, freezing, pasteurization, roasting, boiling, drying, or vacuum packaging.\textsuperscript{24,25} The second category is “processed culinary ingredients,” which are also minimally processed because they have undergone processes to extract them from their original form. They are typically considered “ingredients” and used to season and cook foods from the first group. Sugar, oil, spices, and salt would all fit in this category.\textsuperscript{25,27} The next group is “processed” foods, and includes canned foods, bread, jam, and yogurt. These foods are typically the result of processes that combine foods from the first two categories to create a new food.\textsuperscript{28,29} Finally, ultra-processed foods are products of industrial processes and ingredients derived from whole foods. The ingredients and processes used to create these foods cannot be recreated at home and often include many additives, in fact, UPFs would not be possible without food additives.\textsuperscript{30}
These additives and processing techniques allow ultra-processed foods to have increased shelf stability because they help eliminate the presence of harmful microorganisms from the products that would otherwise rapidly decay food.³¹

Q: Who is affected by the prevalence of ultra-processed foods?

A: The United State’s food system is dominated by ultra-processed foods.³² Seventy-three percent of the food on the grocery store shelves in America is ultra-processed and the US is currently the top-ranked country for UPF consumption in the world, alongside the UK.³³,³⁴ The American population consumes over half of its calories from ultra-processed food sources on a daily basis.³⁵ Although overconsumption trends persist across all ages, genders, and demographic groups, at-risk populations consume UPFs at a higher rate.³⁶ These populations include non-Hispanic white and Black populations, people with less education, younger people, and low-income families.³⁷ Furthermore, migrant populations, Indigenous peoples, elderly populations, pregnant and lactating women, young children, young adults, and other vulnerable groups are more at risk for food insecurity, poor nutrition status, unhealthy diets, and diet-related Non-communicable diseases, which are all linked to excessive consumption of ultra-processed foods.³⁸,³⁹

Q: When did the overconsumption of UPFs become a significant concern?
The creation of ultra-processed foods occurred as technology developed because UPF production requires large-scale factories and industrially produced additives, which were not created until recently. Food processing has existed throughout history, as ancient peoples dried, froze, and otherwise preserved their food in many ways. More advanced food processing technology began in the 19th century with techniques such as pasteurization and hermetic bottling. Processes such as these made food much safer, but they had not yet reached the use of complex chemical additives, large-scale production levels, or automation required for ultra-processing that is seen today.

The onset of the First World War created an increased demand for these industrial technologies as soldiers and the American population needed shelf-stable, high-calorie, fortified foods that could be shipped and stored without spoiling during wartime. One such example of new industrial developments in processing was trans-fats, which had been invented in 1902 and were able to help increase shelf stability and the amount of calories in food. Trans-fats were included in new foods such as hot dogs, crisco, mayonnaise, and Oreo, which became popular in the 1910s. Trends in food processing technology development continued with candy bars in the 20s, Kraft Mac and Cheese in the 30s, and all the way up to today where UPFs have taken over the market. Although ultra-processed foods were created about a century ago, their production did not become a significant concern until recently.

The NOVA classification system mentioned earlier was created by a group at Brazil's University of São Paulo Centre for Epidemiological Studies in Health and Nutrition in 2009, during which time they coined the term "ultra-processed." The onset of this system sought to provide terminology for a rising trend in diet in Brazilian homes. The group noticed that although people were buying less sugar and oil than ever before, their consumption of both was rising. The researchers figured out that this increase in sugar and oil was a result of the rising consumption of processed, ready-to-eat foods, or UPFs. They compared the trend in rising UPF consumption with rising trends in obesity and cardiovascular disease and found a correlation significant enough that it raised concern in Montiero and his colleagues. These findings led to the creation of the NOVA classification system, introducing a new concern to the academic and medical world. As they

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raised awareness about the issue, concern spread across the globe and took hold in the U.S. Since 2009, there have been over 18,000 articles published on Google Scholar about ultra-processed foods in America, while articles in 2008 and before largely lack the term "ultra-processed foods."\textsuperscript{53,54} As such, concerns about ultra-processed foods are relatively recent, confined largely to the 21st century.

Q: How is overconsumption in the US compared to other countries?

A: America specifically struggles with overconsumption of UPFs, in part, because it is an developed, industrialized country.\textsuperscript{55} Industrialization helps to predict if a country will be able to facilitate the production of UPFs, as it requires large-scale factories and industrially produced additives.\textsuperscript{56} Other countries with similar socioeconomic statuses and industrialization to the US, such as the UK and Canada, are also consuming similarly high amounts of UPFs.\textsuperscript{57} The British and Canadian populations also consume over half of their calories in the form of ready-to-eat foods, which are considered ultra-processed foods.\textsuperscript{58,59} This trend can be further observed through rates of obesity because research found that UPF consumption and obesity were correlated.\textsuperscript{60} A BMI over 30 is considered obese and America, Britain, and Canada all have similar obesity rates that range between 28–36% of the population with an average body mass index over 30.\textsuperscript{61} There are Westernized countries with lower obesity and UPF consumption rates. In Italy, for example, the obesity rate is 19.9%, and the percent of calories that come from UPFs is only 17.9%.\textsuperscript{62,63} Additionally, French populations get around 31.1% of their calories from ultra-processed foods and the obesity rate sits at around 21%, demonstrating the correlation between obesity and UPFs. These countries have lower rates of UPF consumption because the food culture and prevalence of the Mediterranean diet are negatively correlated and incompatible with UPFs.\textsuperscript{64}

Contributing Factors

Growing Population
The exponentially growing population has led to an increase in UPF consumption because UPFs are cheaper to produce and can produce more food than traditional food production. Before the population was as large as it is today, traditional, preindustrial diet patterns and food production methods such as family farming, sharecropping, subsistence farming, and small community living were able to support the population. This traditional living meant that people were out working in the field all day in an effort to get by with enough food for their families. This lifestyle changed quickly with advancements in medicine that allowed people to suddenly start living longer and surviving diseases that were once thought to be fatal. Germ theory, for example, was proposed in the 19th century and led to such developments as handwashing and the vaccine, both of which saved millions of lives. As these advancements in medicine changed the world, the population grew, and traditional patterns of farming were left behind as they eventually lost their ability to sustain the population.

Only about 200 years ago, in 1800, the population of the world was 1 billion. As of 2023, the world population is pushing 8 billion people. As the global population continues to swell larger and larger, producing food for such a large amount of people becomes increasingly pressing. This growth becomes a problem as the number of people currently on the planet is far too many for each person to have enough land or resources to cultivate their own food. Currently, there are 7.9 billion acres of arable land in the world, and for every person, it would take 3.25 acres to feed them the typical Western diet. This statistic means that to support the over 8 billion people on the planet, it would require over 26 billion acres, or the equivalent of almost 3 planet Earths. This strain on natural resources necessitated a transition towards readily available and accessible food like UPFs.

Since there are simply not enough resources for every family in the world to raise their own crops now, science and technology have filled the gap. UPFs can be created, shipped, stored, and sold all while remaining safe and preserving appealing taste. They are cheaper, shelf-stable, and high in calories, which makes them the perfect solution for a growing population that needs to be fed. For example, for every 100 calories, UPFs cost $0.55 to produce, while unprocessed foods cost $1.45. Thus, in order to support a 2,000-calorie per-day diet with unprocessed foods, it would cost $29, compared to $11 with UPFs. Most importantly, UPFs are more calorie-dense than whole foods. For example, a 100-gram serving of potato chips contains 545 calories, while a plain baked potato of the same weight only contains 95 calories. Because of their convenience and perceived calorie benefit, UPFs make a quick, easy, cheap, and filling option for feeding a growing population.
Urbanization increases UPF consumption as more of the population lives far away from rural areas and easy access to home-grown food. Beyond just population growth, the location of the population has shifted toward urban areas and influenced UPF consumption. Only 5.1% of the US population lived in cities and urban areas in 1790, but now over 80% of the American population lives in cities and urban areas.\(^81,82\) As more people migrate to urban areas and away from rural areas, cities have higher population densities.\(^83\) For example, the population density in New York City is 29,302.66 people per square mile, while the population density in the most rural county in New York is 2.6 people per square mile.\(^84,85\)

With such high clusters of people congregated in small, urban areas, there are obstacles to keeping people in the city properly fed.\(^86\) In fact, when compared to their rural counterparts, people living in urban environments are more likely to be malnourished.\(^87,88\) Food for the people living in urban areas needs to be able to survive the long trip from farm to store (most food has to travel 1500 miles between farm and store) while maintaining food safety standards.\(^89,90\) Food also needs to be available in large amounts in order to support the size of the population.\(^91\) UPFs meet these needs and serve as a way to feed the large numbers of people living in urban areas and away from farms.

International studies confirm that people in urban areas consume more ultra-processed foods.\(^92\) Beyond just living far from farms, people in urban areas also have a lifestyle with needs that differ from rural needs, and reflect a busy, city life. Ultra-processed foods are easily able to support urban food needs because they are shelf stable and can stay fresh on the shelves in cities for extended periods of time. Additionally, people living in cities do not have as much time to prioritize grocery shopping or cooking.\(^93\) Among the top 30 largest cities in the US, the average work week is 42 hours, compared to the overall average work week in the US of 34.3 hours (measured in October 2023).\(^94,95\) This comparison shows that people in cities tend
to work more hours, leaving fewer hours for other activities such as cooking a homemade meal. A study of low-income American households found people struggle to eat healthy, home-cooked meals because they lack the time to prepare them, so they rely on ultra-processed foods because UPFs are faster to prepare.\textsuperscript{96} The ease of grabbing food while on your way to and from work is paramount for a lot of people, and UPFs on the shelf provide a quick and easy solution.\textsuperscript{97} Thus, because of the distance from rural areas and the speed of urban life, urbanization is a contributing factor in the overconsumption of ultra-processed foods.

Industrialization

Another contributing factor in the rise of UPFs is industrialization because it enabled the creation of food processing technology and also plays a significant role in what foods are available to the public. Industrialization's role in the creation of the technology needed to create UPFs was discussed previously with developments in food processing like trans-fats, which were later discovered to increase the risk of heart disease. In fact, a 2% increase in calories from trans-fats leads to a 23% increase in the incidence of heart disease.\textsuperscript{98} The second part of the industry's role stems from the influence the food industry has over which products are sold in stores, as well as the influence on individual consumer choices. The factors that lead to which food people buy off the shelves are complex.\textsuperscript{99}

Although it may seem like consumers have full agency over the choices they make while shopping for food, this is not the case.\textsuperscript{100} Research illustrated that multiple factors interacted with one another to determine healthy eating, with the largest scope of influence being global factors, and the least significant factor being individual choice.\textsuperscript{101} Global factors influence the decisions and policies enacted by the government, which in turn affect industry and market factors, community environment factors, and sociocultural influences, all of which have a more significant impact than an individual choice on food selection.\textsuperscript{102} This influence means that the food industry has a strong and cascading influence on all the factors that fall
under it, including individual choice. So, when 73% of the food on shelves in America are UPFs, American consumers have three-quarters of their consumption choice made for them by what the food industry has chosen to produce. The magnitude of this industry push for UPFs was obvious in 2017 when there was a 139.5% increase in the prepared food category at supermarkets when compared to the previous year. While individual choice plays a role in the overconsumption of UPFs, it is only a small portion when compared to the influence of the food production industry.

This huge increase in industry interest related to ultra-processed foods stems from the opportunity to make money doing so. The ultra-processed food industry was valued at $143.51 billion in 2020 and is estimated to reach $235.67 billion by 2028. The food industry and related agricultural sectors also accounted for 10.4% of total US employment in 2022. With such staggering size, the term "Big Food" is now being used when referencing super-sized food conglomerates like General Mills, Pepsi-Co, and Mondelez International. The industry is huge, and as its size grows, the amount of UPFs on the market increases with it. This magnitude means that there are more opportunities for consumers to buy UPFs, further increasing the levels at which they are being over-consumed in America.

**Consequences**

**Impact on Physical Health**

Ultra-processed food consumption has been linked with a host of major health outcomes because of its physical effect on the body. As mentioned previously, UPFs are high in sugar, salt, and fat while being low in fiber and micronutrients. This combination activates the reward center of the human brain and releases dopamine, making it very easy to over-consume. Over-consumption of UPFs means that a person is likely to eat more calories than they need while also missing out on fiber and micronutrient
needs. Over time, this trend leads to weight gain and other adverse health outcomes.

These health outcomes are not isolated to a specific health condition, but rather a group of chronic Non-communicable diseases *including all-cause and cause-specific mortality, cardiovascular disease (CVD), overweight and obesity, body composition and fat deposition, diabetes, cancer, and gastrointestinal and other diseases.* As the frequency of UPF consumption increases in an individual’s diet, the risk of all-cause mortality also rises, even when studies control for other variables smoking, physical activity, or poverty level. Similarly, consumption of ultra-processed foods at the level Americans are consuming them was associated with 45%, 52%, and 63% higher risk of total, abdominal, and visceral obesity, respectively. These outcomes do not only affect adults but can begin as early as childhood. Chronic disease and adverse health effects such as these play a major role in people’s quality of life and ability to function on a daily basis.

Ultra-processed foods affect the body and its processes in many ways. The high energy density of many UPFs promotes a change in body composition that trends towards higher adiposity and weight. Other mechanisms by which UPFs can influence physical health are, spikes in blood sugar from simple carbohydrates, increased blood lipid levels from processed sources of fat, and low levels of fiber. Repeated, intense spikes in blood sugar are the beginning steps for the development of type 2 diabetes. As the body mounts an insulin response to these spikes, the body may eventually become insulin resistant, which leads to type 2 diabetes over time. Increased blood lipid levels play a role in the development of cardiovascular disease because they increase circulating levels of cholesterol. Elevated cholesterol can then go on to influence the development of CVD. Low levels of fiber decrease the feeling of fullness and therefore encourage people to eat more until they do feel full. This eating pattern means that people end up eating more calories but feeling less full when they consume UPFs. As people consume more calories, they are more likely to develop obesity and other weight-related Non-communicable diseases. UPFs also have a correlation with gastrointestinal problems and poor gut health. For instance, research indicates they may be correlated with the recent rise in irritable bowel syndrome. Low levels of fiber continue to play a role here as fiber is needed for optimal health of the gut microbiota, which subsists off of these molecules. Poor gut health may cause complications such as autoimmune disorders, skin rashes, sleep disturbances, or food intolerances. Ultra-processed foods play a large and multifaceted role in negatively influencing the physical health of those overconsuming them.
Impact on Mental Health and Well-being

Ultra-processed foods also play a role in people's mental health and well-being, as UPF consumption increases the prevalence of mental health disorders. Mental disorders are the leading cause of disability on a global scale, and their prevalence is only continuing to rise. Research revealed that one of the many factors that played a role in these rising trends was UPF consumption. For example, UPFs have the capacity to exacerbate or incite the onset of conditions like depression. The relationship between UPFs and depression is so significant that for every 10% increase in calories consumed as UPFs per day, adults experience an 11% higher risk of developing depression. Alternately, a dietary intake high in unprocessed foods like fruits and veggies is associated with protection against psychological stress and depressive symptoms. Even when adjusted for sociodemographic characteristics and lifestyle or health-related behaviors, people with the highest consumption of UPFs were more at risk for elevated levels of psychological distress compared to those with the lowest consumption. This research highlights that it is not the connection with poverty, high BMI, or possible individual choices associated with UPF consumption that are playing into the negative relationship with mental health and well-being, but rather an aspect of UPFs that is causing the issue.

The specific pathways that these foods are able to interact with mental health and well-being are complicated and still largely unknown. A few hypotheses that are prominent currently involve a lack of nutrients, the gut microbiome, and inflammation. In regard to nutrient deficiency, people who consume large amounts of UPFs tend to be nutrient-deficient. People who lack nutrients are more at risk for developing depression, so consuming more UPFs leads to a higher likelihood of developing depression. As for the gut microbiome, it is a complex system made up of trillions of microorganisms living in the gastrointestinal tract that play an important role in human health. Specifically, the gut and its host of microorganisms produce 95% of the body's serotonin, a neurotransmitter that plays a role in creating a stable mood.
As people consume UPFs at higher and higher levels, the health of the gut microbiome is jeopardized, and their mental health waivers. The way that inflammation plays a role in mental health and well-being is still unknown, but research shows a connection between chronic inflammation from dietary choices and mental illness. For example, inflammation markers measured in the blood were found to be significantly and specifically elevated in those with major depressive disorder, autism spectrum disorder, post-traumatic stress disorder, bipolar disorder, and schizophrenia. Altogether, UPFs play a multifaceted role in the declining mental health of Americans facilitated by their overconsumption.

**Impact on the Planet and Climate**

UPF cultivation and production directly harms the health of the Earth and climate because it encourages unsustainable farming and livestock practices such as industrial factory farming, monocrop cultivation, deforestation, or slash-and-burn farming. Large-scale, industrial farming uses a great deal of water, land, pesticides, herbicides, fertilizers, and energy. For instance, 11% of US emissions come from the agricultural industry. UPFs specifically encourage these unsustainable farming patterns because they are typically high in ingredients like corn, wheat, sugar, or processed meat, meaning they increase demand for high-yield crops and livestock.

As mentioned previously, the agriculture industry produces a great deal of emissions, but it also uses a lot of valuable land and water. Specifically, livestock has a negative impact on the climate as growing food for their consumption takes up 35% of total cropland on the planet along with 20% of blue water. Furthermore, they use 26% of ice-free land for grazing, during which time they create over 14% of greenhouse gas emissions. Although it might seem like high-yield crops could help combat the effects of emissions from livestock, they actually pose another serious problem with decreases in agrobiodiversity. Agrobiodiversity is the variety and variability of the agricultural system. As industrial
crops such as corn, wheat, soybeans, rice, and potatoes dominate, the demand for more diverse crops falls. This loss of traditional and native varieties severely diminishes agrobiodiversity simply by decreasing the variation of crops being grown worldwide. As a result, there is a reduction in crop genetic diversity that not only undermines the resilience to pests and disease but also hampers the adaptability of crops to changing environmental conditions. For example, blight is a type of fungi that infects many different crops, but in the early 1900s, a specific strain of Chestnut blight was able to wipe out almost every American chestnut tree in the country. Although the American population is not reliant on a yearly chestnut harvest, they are reliant on the food that comes from monoculture crops. The same thing that happened to the chestnuts would happen to all the monoculture crops if it were not for heavy pesticide use, and the effects would be devastating. The diversity in the food grown is what protects the world from this possibility, and UPFs have begun to unravel that safety net.

On top of unsustainable farming and livestock practices, UPF production, even after farming, creates problems for the climate during the time they spend in a factory, and then being shipped. UPFs are far from their finished product after crops leave the field and still require even more energy for production to be complete. Shipping and factory processes use a great deal of energy, increase industrial additives, and create harmful emissions. Emissions such as carbon dioxide, methane, and nitrous oxide, are known to be harmful to the climate as they create an incubating effect on the globe. Today, food systems are responsible for 26% of global greenhouse gas emissions, of which UPFs make up a significant portion. Runoff from factories and the food additives used in them have also become a growing threat to water systems. Runoff is currently the leading source of decreased water quality in rivers and streams and accounts for 80% of marine pollution. Together, these unsustainable practices resulting from UPF production are creating harmful effects on the Earth and its climate.

Practices

Government Involvement

The government helps lower UPF consumption because its policy is able to mitigate personal choice by removing some UPF options from the shelves. Personal food choices and eating habits are typically difficult to alter because there are so many layers to the reasons people choose to eat what they eat.
The government is the factor with the widest scope of influence because it has the most control over other factors influencing food choices. As mentioned earlier, research indicates that individual food choice is influenced by a number of nesting factors, with government being one of the outermost layers.\textsuperscript{165} Governmental policy and action encompass other factors such as industry, food environment, sociocultural factors, and individual choices as they are able to dictate what food products are produced and sold, create guidelines, or implement regulation laws.\textsuperscript{165} The best practice for the American government would be to engage with food industries to promote corporate responsibility in the production of food.\textsuperscript{167} This engagement could include encouraging them to reduce the use of additives, preservatives, and excessive amounts of sugar, salt, and unhealthy fats in their products.\textsuperscript{168} Legislators could also implement policies that support healthier food environments, like zoning regulations to limit the number of fast-food outlets in certain areas, or policies to increase the availability of healthy food options in public spaces.\textsuperscript{169,170}

Impact

The American government has the ability and power to alter foods being produced and sold in America. A study that reviewed the impact of policies to reduce dietary trans fats found that government policy was an effective, feasible, and impactful intervention for removing ultra-processed ingredients, like trans fats, from our food.\textsuperscript{171} This review compiled the findings of 26 different studies and found that when policies were implemented to reduce the amounts of trans fats, their presence in food significantly decreased.\textsuperscript{172}

Another study found that after regulation through government policy, 72% of margarine and butter, 77% of cookies and cakes, and 78% of savory snacks were free of trans fats.\textsuperscript{173} Similar success occurred when the US entirely banned certain items. For example, the US banned Kinder Eggs in 1997, and afterward, the sales of Kinder Eggs reduced to zero.\textsuperscript{174,175} The same treatment was given to sassafras oil, which now cannot be sold in the US.\textsuperscript{176} The US government holds significant power in regard to what is manufactured and sold, so this same treatment can be applied to regulating UPFs through policy and legislation.
Gaps

Although implementing legislation to regulate UPFs is a step in the right direction, it faces numerous challenges, with one significant obstacle being the considerable influence of industry lobbying. The web of economic interests and political pressures can undermine the efforts aimed at curbing the production and marketing of these foods. Industry stakeholders may resist changes that impact their profit margins, making it difficult to create and enforce effective policies. In fact, there is evidence that lobbyists have been able to skew the government’s official dietary recommendations in the past. Policymakers must then navigate this problem, finding a balance between public health imperatives and political and economic considerations. Ideally, lobbyists and companies would be kept out of public policy altogether.


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United States

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