The Link Between Ultraprocessed Food and Cognitive Decline

Ultraprocessed foods are linked to a fast rate of cognitive decline. However, the amount of food needed to cause the effect may surprise you.

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12 hr ago

STORY AT-A-GLANCE

- Research presented at the 2022 Alzheimer's Association International Conference showed that people who ate 20% of their diet from breakfast cereal, frozen food and soda had a 28% faster rate of cognitive decline and a 25% faster rate of decline in executive function
- Cognitive decline may likely be related to the high level of omega-6 linoleic acid from vegetable and seed oils found in junk food; these can trigger mitochondrial dysfunction and cell apoptosis in the brain, which uses nearly 25% of the body's energy supply

- Multiple studies show people in the U.S., Britain and Canada eat junk foods at levels ranging from 48% to 57%. Dr. Chris Van Tulleken increased his total junk food to 80% for one month and experienced multiple health effects, including gaining 15.4 pounds in four weeks
- Ultraprocessed foods are also associated with obesity, reduced gut microbiome diversity, poor immune health, stunted bone growth and an increased risk of fracture
- As you consider the looming food shortages and choices you make to stock up on shelf-stable food, also eliminate ultraprocessed foods from this list. The food choices you make have an enormous impact on your health and resilience

Research presented at the 2022 Alzheimer's Association International Conference demonstrated that eating breakfast cereal, frozen foods and soda could lead to cognitive decline and increase your risk of Alzheimer's disease. [1] The researchers were encouraged that the data confirmed past information demonstrating nutrition has a significant impact on brain health.

NOVA (a name, not an acronym) is a food classification system that organizes foods according to the extent they are processed. [2] Studies assessing the impact of ultraprocessed foods regularly use this system. Ultraprocessed foods are industrial formulations with five or more ingredients, including sugars, fats, salt, stabilizers and preservatives.

These are ingredients that are only found in ultraprocessed foods and are not commonly used in culinary preparations. The purpose of these is to “imitate sensory qualities” with ingredients that either enhance flavors or disguise undesirable taste in the final product. Many ultraprocessed foods also go through industrial processes for which there is no equivalent in the home, such as molding, extrusion and preprocessing for frying.

Multiple studies have demonstrated that the amount of ultraprocessed food consumed in the U.S. is high. One 2016 study [3] found 57.9% of calories study subjects consumed were from ultraprocessed foods. Another 2018 study [4] found that 58.5% of calories consumed from 2007 to 2012 came from ultraprocessed foods. An 18-year study [5] published in 2021 found the average consumption of ultraprocessed foods rose from 53.5% in 2002 to 57% of the diet in 2018.

As a side note, one prospective study conducted in France [6] and published in 2019 in JAMA Internal Medicine [7] found something significantly different. In 44,551 participants, only 14.4% of their diet in grams was ultraprocessed food.

Yet, despite this dramatic drop, the researchers also found "a positive association between increased ultraprocessed foods consumption and all-cause mortality risk." Researchers noted that the study's participants were already "more health conscious than the general population," which might lead to less consumption of ultraprocessed foods and lower mortality rates, and that this study's results should not be generalized to other populations.

Even so, the fact that ultraprocessed foods make up 14.4% of the diets of "more health conscious" people should send a message that ultraprocessed foods are being consumed in historic amounts.

Against this backdrop of mounting scientific evidence [8] that ultraprocessed foods increase your risk of disease and early death, organizations like the American Heart Association promote a plant-based diet including "convenient meatless foods you like, such as veggie burgers and vegetarian microwavable meals, on hand for a quick, meatless lunch." [9]

The current meatless, plant-based burgers are the very definition of ultraprocessed foods. For example, Impossible Foods has filed 263 global patents on food [10] and as Seth Itzkan, cofounder of Soil4Climate wrote: [11]

> *"Impossible Foods should really be called Impossible Patents. It's not food; it's software, intellectual property — 14 patents, in fact, in each bite of Impossible Burger with over 100 additional patents pending for animal proxies from chicken to fish."*

According to Impossible Foods their ingredients are derived from plants. [12] In other words, they are not plants, just derived from plants, in the same way that soy protein concentrate, seed oils and corn chips are naturally derived from plants. Although the ingredient is "plant-derived," it doesn't account for the processing used before it reaches the final form.

Study: Cognitive Decline Linked to Ultraprocessed Food

The study presented at the International Conference in San Diego looked at 10,775 people living in Brazil over an eight-year period. The data showed that there was a correlation between an individual's "high consumption" of ultraprocessed food and a decline in memory and executive function. [13] [14]

However, instead of using 50% or 60% of the daily caloric intake of ultraprocessed food as high consumption, this study defined high consumption as "more than 20%." This could mean a mere 400 daily calories for women or 500 calories for men. Lynetta Smith is a clinical dietitian with Citizens Memorial Healthcare in Bolivar. She commented on how meal planning and eating foods prepared and cooked at home could help prevent cognitive decline, saying: [15]

> *"There's a beautiful synergy in our foods, and when we look at dietary patterns that have particular cognitive benefits, they're ones that have also had a lot of research for cardiovascular benefits.*
>
> *As people take time to prepare healthy meals at home, it's a cognitive activity: You have to come up with meal plans, you have to think about your ingredients and measuring and preparing them in a way that uses them well, so you're using your budget well. Often with meal preparation, you're working with others so you get that social factor that goes into our brain health."*

Dr. Jean Guan, a geriatrician with CoxHealth, pointed out [16] that while the study analyzed the effect of frozen food on cognitive decline, it didn't mean that frozen foods were inherently unhealthy. She offered the advice of preparing large amounts of heart-

healthy foods and freezing them in individual portions. Although it's still a frozen meal, it's not manufactured or ultraprocessed frozen food.

The loss of cognitive function was not insignificant. In the study, [17] men and women who ate the most ultraprocessed foods had a 28% faster rate of cognitive decline and a 25% faster rate of decline in executive function as compared to those who ate the least.

One of the study's scientists pointed out to CNN that in Brazil, up to 30% of the total calorie intake comes from ultraprocessed foods. This is nearly half the amount recorded in the U.S. Additionally, the researcher noted that ultraprocessed foods make up 56.8% of the British diet and 48% of the Canadian diet.

The study did not identify whether there was a dose-dependent effect. In other words, they only looked at whether eating greater than 20% of the daily caloric intake in ultraprocessed foods would affect cognitive decline. If a person ate nearly three times that amount, would the rate of cognitive decline be greater?

The Effect of Ultraprocessed Foods in One Month

Dr. Chris Van Tulleken, BBC television presenter of "What Are We Feeding Our Kids?" [18] was curious about how ultraprocessed foods affect the body. Over a one-month period the 42-year-old increased his daily intake from 30% of ultraprocessed products to 80%, which mimicked how 20% of the U.K. population eats. By the end of four weeks, Tulleken experienced a myriad of changes, including: [19]

- Poor sleep
- Heartburn
- Anxiety
- Sluggishness
- Low libido
- Unhappy feelings
- Hemorrhoids (from constipation)
- Weight gain of 7 kilograms (15.4 pounds)

"I felt 10 years older, but I didn't realize it was all [because of] the food until I stopped eating the diet," Tulleken told the BBC. [20] This is significant since the physician recognized that he had purposely changed his diet, and yet he did not recognize that feeling 10 years older after only four weeks was associated with the food he was eating.

This may help explain how difficult it might be to convince others that the way they're feeling is related to the chemicals they are consuming. These were the symptoms that Tulleken identified without any testing. During the one-month period, he also underwent several measurements that demonstrated there were significant changes from only four weeks of eating ultraprocessed foods.

Brain scans showed the diet had created new links in the brain from areas responsible for rewards to areas that drive automatic and repetitive behavior. This is a similar neurological response to individuals who consume classically addictive substances, such as alcohol, drugs and tobacco. The scans showed that the brain changes Tulleken experienced in four weeks were not permanent. [21]

Yet, it is not possible to make the same assumption if an individual follows a diet high in processed foods for months or years. Tulleken also pointed out "if it can do that in four weeks to my 42-year-old brain, what is it doing to the fragile developing brains of our children?" [22]

Ultraprocessed Food Triggers Hunger and Disease

Tulleken found that he ate approximately 500 more calories each day during that month. [23] This information was consistent with the results of a study [24] from the National Institutes of Health (NIH) in which the researchers compared two diets that were matched for macronutrients, sugar, salt and fiber content.

The difference was that one diet was 80% ultraprocessed products and the other was an unprocessed diet. The group ate the ultraprocessed diet for two weeks and then switched to the unprocessed diet while they were admitted and monitored at the NIH Clinical Center. When participants were eating the ultraprocessed diet they ate more carbohydrates but not more protein and they gained approximately 2 pounds.

During the two weeks they ate the unprocessed diet, they lost 2 pounds. The researchers also measured hormonal biomarkers responsible for feeling hunger and satiety, finding that while participants were eating the ultraprocessed products, ghrelin, the hormone responsible for hunger, increased and leptin, the hormone responsible for feeling full, decreased.

Tulleken had the same experience as his ghrelin level increased by 30% during the month that he ate ultraprocessed foods and he found himself craving food more often and eating more quickly. [25]

As Tulleken experienced, and many studies have shown, eating a diet high in ultraprocessed foods increases your risk of obesity. This in turn increases your risk for many serious diseases, including: [26]

- Premature death
- Changes in cholesterol levels
- Type 2 diabetes
- Stroke
- Heart disease and high blood pressure
- Gallbladder disease
- Low quality of life
- Sleep apnea and breathing problems
- Mental illnesses such as depression and anxiety
- Osteoarthritis
- Many types of cancers
- Pain and difficulty functioning

Ultraprocessed Food Seed Oils May Drive Cognitive Decline

Data from the featured study showed that despite eating enough calories, participants experienced a decline in cognitive function. The key factor in this study was the consumption of ultraprocessed foods, also called junk food. A major component in the production of junk food is vegetable oil [27] and vegetable and seed oils are high in the omega-6 fatty acid linoleic acid (LA). [28]

Historically, it has been noted that as Americans consumed greater amounts of vegetable and seed oil high in LA, there was an increase in the concentration of LA in subcutaneous fat tissue, which correlates with an increase in the prevalence of asthma, obesity and diabetes. [29]

Additionally, the buildup of LA in fat tissue and platelets is also linked to coronary artery disease (CAD). By comparison, higher levels of omega-3 fat in platelets are inversely associated with CAD, which is compelling evidence that LA promotes heart disease. [30]

I believe the primary factor behind many diseases in the Western world relates to the high consumption of LA and this is the basis of a book I am currently writing. While many understand the ratio of omega-6 to omega-3 fatty acids is very important, it's important to realize that LA damages your body's ability to generate energy in the mitochondria.

Depending on the organ, your mitochondria work better with different kinds of fatty acids. Your brain prefers the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). [31] When there are higher amounts of LA than EPA and DHA, it can damage the mitochondria and trigger apoptosis.

In addition to cell damage, your brain is a high-energy consumer. While it makes up only 2% of the body's weight, it uses up to 25% of the energy. [32] This combination of high energy consumption funneled through the mitochondria and damage to the mitochondria by LA may be a key factor in the development of cognitive decline associated with the consumption of ultraprocessed foods.

Ultraprocessed Foods Trigger Additional Damage

Past studies have linked ultraprocessed foods with a higher risk of metabolic syndrome, obesity, high blood pressure and cardiovascular diseases. The basis for these metabolic changes may reside in the negative effect junk food has on your gut microbiome. Reasons for the change in your gut microbiome are likely related to the lack of fiber in junk foods [33] and the high levels of refined sugar — something the French scientists also noted in the study I cited earlier. [34] [35]

A diverse gut microbiome is better able to support a healthy immune system. Tim Spector, professor of genetic epidemiology at King's College in London, found this to be increasingly important during the COVID-19 pandemic. Writing in The Conversation, Spector says: [36]

> *"As well as mounting a response to infectious pathogens like coronavirus, a healthy gut microbiome also helps to prevent potentially dangerous immune over-reactions that damage the lungs and other vital organs. These excessive immune responses can cause respiratory failure and death ..."*

A 2021 animal study [37] demonstrated that ultraprocessed foods also influence skeletal development. There were two study groups: One received a diet similar to the standard Western diet and the other a standard rat diet. The results revealed that weight gain was lower and total body and leg lengths were also significantly shorter in the experimental group when compared to the control group.

Although the experimental group was underdeveloped, the animals ate significantly more calories. This suggested that the ultraprocessed diet stunted growth, but it was not related to a caloric deficiency. The researchers also examined the vertebral and femoral bone properties and found that the animals in the experimental group had inferior bone parameters when compared to the control group.

The findings indicated there was an increased risk of fracture from poor bone development. Although this animal study demonstrated poor structural development during growth before sexual maturity, it's important to note that bone formation continues in a human until peak mass is achieved from age 30 to 40 years. [38] This raises the additional question of how ultraprocessed foods could affect the risk of osteoporosis in older adults.

Scientific evidence continues to mount demonstrating the multiple negative effects that ultraprocessed foods have on health. The link to cognitive decline is yet another nail in the coffin. It is crucial to eliminate junk foods from your diet. As you consider the looming food shortages and choices you make to stock up on shelf-stable food, also eliminate ultraprocessed foods from this list. The food choices you make have an enormous impact on your health and resilience.

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31 Comments

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cms72 9 hr ago · *edited 9 hr ago*

In looking over the foundations of a nutritional hygiene emanating from Rudolf Steiner´s Spiritual Science, Gerhard Schmidt discusses vegetarian nutrition from an anthroposophical perspective.

He says that “for human beings to be able to draw all their necessary nutrients exclusively from plant foods, we require certain inner forces that may need to be awakened within us. When these forces are awakened, however, they make us more capable of work and thought, and allow man to regulate his life and existence from a freer and higher point if view, and achieve this rapid thinking, this rapid comprehension, by virtue of his nourishment from the plant world.”

http://www.waldorfhomeschoolers.com/steiner-was-a-vegetarian

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7 replies

Guillermou 9 hr ago

There is evidence that during the early phases, where man was developing the great brain characteristic of our species, the diet was plant-based including meat and saturated fat and DHA. The development of tools and weapons and of a social structure to hunt animals was necessary to become an omnivore. Gut bacteria help produce brain-derived neurotrophic factor, which is necessary for the development of new brain cells and is essential for plasticity and learning. Two requirements for the evolution of a large brain: sociability: executive functions, self-control, altruism are frontal lobe functions for the most part. The second requirement is DHA. Gut bacteria help produce brain-derived neurotrophic factor, which is necessary for the development of new brain cells and is essential for plasticity and learning

Later came the fire, agriculture and groupings in villages that made life more sedentary, with greater exposure to diseases, which worsened with industrialization.

The adoption of agriculture, especially cereals, had clear disadvantages. With agriculture came social inequalities, disease. Cavemen enjoyed more abundant fresh food. They did most of the work without the power of oil and machines, with their sweat, no rest in the daily struggle, to find wild foods and avoid starvation, to defend themselves against animals and other tribes. We left this stage only 10,000 years ago, when people in various parts of the world began to domesticate plants and animals.

A healthy diet, live food, not getting vaccinated, avoiding drugs and environmental contamination and exercise is the basis for not suffering from diseases and increasing quality of life. Saturated fats, which are healthy, have been attacked, when in fact it is ultra-processed foods, loaded with sugar and omega 6 fatty acids, that are oxidized and cause all kinds of pathologies.

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