

# A Literature Review on Ultra-Processed Foods and a New Lifestyle

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**Abstract:** Ultra-processed foods is one type of ready-to-eat products which contain a complicated processing and additives to make it more delicious and preserve the ingredients in the foods longer than cooked food. The purpose of this article mentions the features and benefits of ultra-processed foods, consequential drawbacks that people will receive from consuming a lot of ultra-processed foods and also trends of citizens consuming ready-to-eat foods behaviors in society. The study of ultra-processed foods found that, Nowadays, teenagers and young adults prefer to eat ultra-processed foods. Although they're convenient, affordable, packaging of products and sanitation, they play a major role in the human's serious health disorders. Therefore, people who have a hasty lifestyle might increase their ingestion of ultra-processed foods even though they know the disadvantages.

**Keywords:** Ultra-processed foods, lifestyle.

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## 1. INTRODUCTION

Ultra-processed foods are an explanation of changing natural foods with extracted substances serving as sugar, fats, hydrogenated fats and starches or also include additives such as stabilizer, unnatural colours or smells or flavors. These types of foods are ready-to-eat meals, frozen meals, soft drinks, fast food, snacks, cold cuts and noodle cups.(1)

In the past decade, a lot of new technology has been invented and its effect on communication, medicine, transportation and food which are in human's daily life. Colleges in Kamphaeng Saen Campus Kasetsart University who live in dorms usually eat frozen foods instead of cooking for themselves because of limited spaces in the campus, their income, various choices of foods and easily reachable at convenience stores.(2)

After Covid-19 pandemic, American people's eating lifestyle changed from before. They decline to eat foods that have plenty of nutrients and increase to eat shelf-stable foods to deal with the unpredictability of the widespread disease.(3)

Nowadays, In Thailand, many high school students can not make their own food since some of them live in dorms and don't have enough space for a kitchen or don't have enough time after finishing their class or assignments or don't know how to cook. As a result, it's forcing students in this society to dispatch with the imitation of time. Moreover, during the lockdown of Covid-19 pandemic many people who live in their house have ordered and bought a lot of canned or ready-to-eat foods to eat instead of fresh vegetables and meats. They might eat processed food for different purposes which depend on their lifestyle, choices, convenience, prices, taste and sanitation. The body of consumers who dine a lot of processed foods can risk absorbing less nutrients or being overweight. Otherwise, it can lead to terrible disease from contamination in these ultra-processed foods.

## 2. ULTRA-PROCESSED FOODS

### What are Ultra-processed foods

The definition of ultra-processed foods from NOVA food classification is described as a food which contains fat, sugar and salt to avoid achieving improvements in nutrient intakes.(4) This research shows new evidence links unitary-processed foods with a range of health risks by first study based in France and Brazil.As a result, rates of disease and degree of

processing were increased follow up from 2009 to 2018. Overall cardiovascular disease, coronary heart disease, and cerebrovascular disease (increase of 12%, 13%, and 11% respectively) have increased. Next is their second study in Spain. Results are the same as before.(5) Processed foods can be classified in terms of minimally processed foods, processed culinary ingredients foods, food industry ingredients foods and ultra processed foods. According to Technologists scientific review designated processing as "one or more of a range of operations, including washing, grinding, mixing, cooling, storing, heating, freezing, filtering, fermenting, extracting, extruding, centrifuging, frying, drying, concentrating, pressurizing, irradiating, microwaving, and packaging". Therefore, a nutritional value loss must be weighed against other advantages such as convenience. (6) Obviously, ultra processed food is one type of processed food which consists of salt, fat and sugar. Directly affects human's health and leads to treacherous diseases such as cardiovascular disease, coronary heart disease, cerebrovascular disease and depression.

### **How to classify processed foods**

Scientists developed the NOVA classification system. In accordance with the purpose of processing to label foods and beverages into one of four groups. There are unprocessed, processed culinary ingredients foods, food industry ingredients foods and ultra processed foods.(7)

Categorize from methods of food processing. There are 7 ways.

- 1.Canning, the food is packaged and stored in an air-tight can after being heated to a high temperature or pasteurised .
- 2.Fermentation, the production of alcoholic beverages such as wine, beer, and cider, and in the preservation of foods such as sauerkraut, dry sausages, and yoghurt, but also for raising dough in bread production.
- 3.Freezing, Food temperatures are reduced to below 0°C to decrease the activity of harmful bacteria.
- 4.Modified atmosphere packaging, Air inside a package is substituted by a protective gas mix, often including oxygen, carbon dioxide and nitrogen which help to extend the shelf life of fresh food products
- 5.Pasteurization, Food is heated and then quickly cooled down to kill microorganisms.
- 6.Smoking, A process of heat and chemical treatment of food to help preserve it by exposing it to smoke from burning material.
- 7.Additives, to preserve the freshness, safety, taste, appearance and texture of processed foods.(8)

According to NOVA classification, begin with unprocessed or minimally processed food which does not add a substance in food and aims to preserve nutrition in a food. Following by processed culinary ingredients foods that contain seasoning and cooking of group1 foods. Next, Processed foods which aims to make group1 foods more enjoyable. Finally, ultra processed foods is a formulation of unnecessary material and complexly involves multiple industrial steps. Students in korat include the ultra-processed foods in these daily meal times which are breakfast , lunch, dinner. This research illustrates that teenagers from 13 to 17 years old consume different types of foods.(9) These are the list of ultra processed foods that are found in the paper.

- 1.Breakfast, Dumplings, Streaming bun, Sausage, Ham
- 2.Lunch, Noodle cup, Soft drinks , Ice cream, Donut
- 3.Dinner, Pizza, Potato chips, Hamburger

### **Advantages of Ultra-processed food**

Most ultra processed foods are shelf stable and contained in packaging. So,they reduce consumer's spending time on groceries, which is portable, convenient and affordable. Canning foods are heated in high temperatures and create less harmful bacteria.(10) This snack made from a Thai brand contains calcium, silver and phosphorus which play a major role in metabolism inside human's cells, strengthening bones,creating hemoglobin in red blood cells. Moreover, this product puts in an aluminum foil which reduces harmful bacteria and chemicals. (11)

### **Disadvantages of Ultra-processed food**

Ultra processed foods contain unnecessary ingredients. When people regularly eat them. They can cause a serious effect on human's body systems. Worstly, they can lead to terrible diseases or death.(12)

From Latin America research paper displays that human health which includes chronic diseases, cancer and obesity is directly affected by the neoformed compounds and additives.(13)

For all reasons considered that Ultra Processed foods are created from vegetables or meats with industrial processing and add some redundant integrals to make consumers delightful. They have both benefits and harms toward purchasers.

### **Trend of eating ultra processed foods in the new generation**

In the present, people of many ages including children, teenagers, Adults and elders change their eating lifestyle. Therefore, the number of people who dine ultra processed foods has increased from the past.

In compliance with the Thai Food Association export to world from 2019-2021, the information provides that the number of Ready-to-eat meals sealed in units of tons increased from 8.5% in 2019 to 23% in 2021.(14)Based on Trends in Consumption of Ultraprocessed Foods Among US Youths Aged 2-19 Years, 1999-2018 research.

Illustrating the NHANES cycles from 1999 to 2018, the estimated proportion of energy intake from consumption of ultra processed foods has increased among teenagers in the US and has consistently comprised the majority of their total energy intake.(15)

Children's eating habits are also affected by Covid 19 pandemic. Foods with sustainability, longer keeping and low cost were purchased more than usual. Many children gain weight and some of them lack meals related to their families being low-income.(16)

In Bangkok, during Covid-19 pandemic, customers spent money on delivery food for 301-400 baht per time and preferred to buy frozen foods at supermarkets and shopping malls rather than street markets. (17)In summary, the trend of adolescents eating ultra processed foods has increased every year. Especially during Covid-19 pandemic.

There are 6 main Factors that directly affect ultra-processed food consumption.

Firstly, people's lifestyles have changed.Previous generations have different ways to cook and dine food since food technologies are not developed and people have less experience and knowledge about nutrition.People who live in Bangkok choose to buy frozen meals from their income and education levels which have a wide range of food nutrition knowledge and news as well as technology development, logo of the products, loyalty to each (18)

Secondly, ultra-processed foods have various choices. Ultra processed foods have different categories depending on methods and types of foods and beverages. Therefore, customers can choose and purchase the products related to their own lifestyle.This research shows that the customers prefer to buy takeaway food from convenience stores because of various options and convenience.(19)

Thirdly, convenience. The result from this shows ,in Thailand, every convenience store has processed food products so that people who live in apartments or don't have a market near their house can easily buy food products from convenience stores. Meanwhile, residents of personal houses and townhomes choose to make healthier foods. (20)

Next, prices of ultra-processed foods. Average price of ultra processed foods from neighborhood grocery is not expensive. Noodle cups cost between \$1.19 and \$2.30. Therefore, students can pay for it to dine as his or her meals.(21) Moreover, the customers compare the value of products and price. If the value is more than price, they will buy the products. (22)

Next, taste of the food. A lot of ultra processed foods contain sugar and other additives to create a lovely smell and taste for customers. Sometimes, it makes people enjoy eating rather than cooking for themselves.The package of cup noodles can preserve the quality of a food longer. (23) Furthermore, from study of the guidelines for using thai food flavoring agents to enhance perceived value and consumption experience of the thai consumers, as a result, smell additives help to control the quality of the foods and add different choices of products which make it look more delicious. (24)

Lastly, cleanliness of the food and packaging. Industrial processing is one of the steps to construct ultra processed foods. For that reason, the strong and protective seal or packaging doesn't decline the quality of the products but decreases harmful bacteria in the foods. According to the processing of frozen foods from this research, firstly, select and mix the ingredients then put them into the stream at 100 °C and quickly put them under 18 °C , finally, put the foods in the package and transfer them. (25)

### Health risks and problems caused from eating ultra processed foods.

From the participants who join the findings of a recent randomised controlled trial of unrestricted ultra-processed versus unprocessed diets shows the ultra-processed diet consumed an average of 508 kcal more a day than those on the unprocessed diet and gained a mean of 0.9 kg over two weeks and increased risk of non-communicable disease.(26) The research, Association of ultra-processed food intake with risk of inflammatory bowel disease: prospective cohort study, goal is evaluating the causation and correlation between intake of ultra-processed food and risk of inflammatory bowel disease (IBD). The result shows the relation of ultra-processed food intake and risk of IBD were assessed using Cox proportional hazard multivariable models. (27)

Proving that healthy eating has four factors which are firstly, psychological and physical encouraged behavior of eating, insight of consumer behavior and food, perceptions of contradictory food-related social pressures and acumen of healthy dining concepts. Given the increasing prevalence of obesity amongst adolescents, the need to reduce these barriers has become a necessity. Twelve focus group discussions of single-sex groups of boys or girls ranging from early to-mid adolescence were employed to identify key perceptions.(28)

S. aureus are microorganisms from meat, milk's products that cause a disease in many areas around the world, from research about Staphylococcus aureus risk assessment for ready to eat food in Bangkok shows that the possibility of human's sickness in one year are 1832 times per 100,000 people.(29)

In summary, from the research of ultra processed foods and eating behaviors, health diseases are related to eating habits, personal health and the ingredients in the ultra processed products which not only the nutrients but other additives are also included in the foods.

### Citizen's lifestyles in the city.

populations of people who live in the cities are growing fastest, Africa and Asia, which already have urban populations bigger in total than those in Europe, Latin America or North America. have been increasing their share of urban dwellers most in the last 70 years.

(30) There are many benefits and disadvantages of living in urban areas. Although individuals gain increasing salaries and opportunities for their jobs and dining choices, they have to pay a high cost for apartments and it lacks space. Most of them change their eating habits. Especially when people have to eat in a limited time, already have a mountain of bills so that buying ingredients and creating some meals is not the answer for their lifestyle.

There are 3 groups of students in Thailand that have different perceptions of ultra processed foods and it affects their own eating habits and body system.

1. aware of dangerous effects from ultra processed foods and strictly avoid consuming unhealthy foods.
2. aware some of the effects from ultra processed foods and still eating.
3. eating ultra processed foods without acknowledgement and consuming it often.

### 3. CONCLUSION

Citizens' eating behaviors have slightly changed from the past. Compared with a limited time, lacking space for cooking and paying for a high price of serving and products. Ultra processed foods are the best choice to solve these issues. On the other hand, these kinds of foods also cause diseases and destroy health protection from the chemicals that contain in the foods.

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