

Processed Food: What Is the Purpose of Food Processing?

Why do we process food? | How are different foods produced? | 20 March 2017

In a [consumer study](#) carried out by EUFIC, we investigated the understanding of processed foods among participants from the UK. This Q&A summarises the topics explored in the study.

What is food processing?

Food processing is any method used to turn fresh foods into food products.¹ This can involve one or a combination of various processes including washing, chopping, pasteurising, freezing, fermenting, packaging, cooking and many more.² Food processing also includes adding ingredients to food, for example to extend shelf life.^{3,4}

What are the methods of food processing?

Food processing includes traditional (heat treatment, fermentation, pickling, smoking, drying, curing) and modern methods (pasteurisation, ultra-heat treatment, high pressure processing, or modified atmosphere packaging). Some of the common methods are described below:

Canning

The food is heated to a high temperature. This process is called pasteurisation. Then, the food is packaged and stored in an air-tight can. Check our infographic showing the processing steps for canned tomatoes.

Fermentation

The breakdown of sugars by bacteria, yeasts or other microorganisms under anaerobic conditions. This means, no oxygen is needed for the process to take place (apart from oxygen present in sugar). Fermentation is notably used in 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.

Freezing

Food temperatures are reduced to below 0°C to decrease the activity of harmful bacteria. The process can be used to preserve the majority of foods including fruits, vegetables, meat, fish, and ready meals. Do you know the steps needed to produce frozen peas? Check them out [here!](#)

Modified atmosphere packaging

Air inside a package is substituted by a protective gas mix, often including oxygen, carbon dioxide and nitrogen – gases that are also present in the air we breathe. They help to extend the shelf life of fresh food products - usually of fruits, vegetables, meat and meat products, and seafood.

Pasteurisation

Food is heated and then quickly cooled down to kill microorganisms. For example, raw milk may contain harmful bacteria that cause foodborne illnesses. Boiling it (at home) or pasteurising (on a large scale) is crucial to ensure it is safe to consume. Apart from dairy products, pasteurisation is widely used in preservation of canned foods, juices and alcoholic beverages.

Smoking

A process of heat and chemical treatment of food to help preserve it by exposing it to smoke from burning material such as wood. Smoked foods usually include types of meat, sausages, fish or cheese.

Additives

[Food additives](#) play an important role in preserving the freshness, safety, taste, appearance and texture of processed foods. Food additives are added for particular purposes, whether to ensure food safety, or to maintain food quality during the shelf-life of a product. For example, antioxidants prevent fats and oils from becoming rancid, while preservatives prevent or reduce the growth of microbes (e.g. mould on bread). Emulsifiers are used for instance in improving the texture of mayonnaise, or stopping salad dressings from separating into oil and water.

What are the reasons and consequences of food processing?

Makes food edible

Grain crops, for example wheat and corn, are not edible in their natural state. Processing techniques, such as milling and grinding, turn them into flour, after which they can be made into breads, cereals, pasta and other edible grain-based products. There are 3 types of flours depending on the processing level, choose wholegrain when possible. You can learn more about the journey of grain to bread in our 'Gain on grain' infographic.

Safety, shelf life, and preservation

Processing improves or even ensures food safety by removing harmful microorganisms. The main methods are pasteurisation, air-tight packaging, and the use of preservatives.

Nutritional quality

Food processing can affect the nutritional quality of foods in both ways: it can enhance it, for instance by adding components that were not present, like vitamin D (through '[fortification](#)'), or by lowering fat, salt or sugar. It can also cause some fibre and vitamins and minerals to be lost, for example through excessive refining, heating or freezing.

Convenience

Processing and packaging technologies help to answer modern day time-constraints by providing a range of convenient foods: ready meals, bagged salads, sliced and canned fruits and vegetables that take little time to prepare and can be consumed “on the go”.

Price

Food processing can decrease the cost of foods. For example, frozen vegetables have a similar nutritional value as fresh ones, but at a lower price, as they have already been prepared, do not contain inedible parts, can be bought in bulk, and can last longer. This way, processing increases the shelf life of food, and decreases the amount of waste, reducing thereby the overall costs of food production.

[More examples of the impact of food processing can be found in our infographic on the basics of food processing.](#)

How does processed food fit into a healthy diet?

A healthy diet means eating a variety of nutritious foods from different food groups, including fresh fruits and vegetables, grains and cereals (opting for wholegrains when possible), proteins, dairy and healthy fats. Most foods consumed nowadays are processed at least to some degree, but not all processed foods are the same. For example, fruit canned in fruit juice will be a better option than fruit canned in a sugary syrup. Therefore, when chosen mindfully, processed foods can be incorporated into a healthy and balanced diet.

Less processed foods such as frozen fruits and vegetables provide valuable sources of nutrition, with greater convenience and lower price. Chopped, frozen, and canned foods in natural juices (fruit) or water (veg or fish), are therefore good alternatives for busy people having limited time to shop for or cook from a fresh produce.

Some processed foods that contain less fibre, and higher levels of (saturated) fat, added sugar and salt, are best consumed occasionally. For example, canned savoury foods and cured meats are often high in salt. In fact, the World Cancer Research Fund advises to eat very little, if any, processed meat (such as ham, salami, bacon and some sausages, including frankfurters and chorizo). For more information, read our [science brief](#). Similarly, it helps to be mindful of foods like biscuits, chocolate bars, burgers, pizzas and alike, and make them an occasional addition to, rather than a basis of our diet.

For more information please see:



[EUFIC \(2016\). Understanding perceptions of processed food among UK consumers. A qualitative consumer study by EUFIC. EUFIC Forum n° 7.](#)

[EUFIC Review \(2010\) The greatest thing since sliced bread? A review of the benefits of processed foods](#)