

Processing How Modern Foods & Beverages are Made

If you open your pantry, peek inside your fridge, or sift through your freezer, you may be surprised to find out many of the foods, beverages, or ingredients there are processed in some way. Use this guide to break down the different types of processing as well as the unique purposes and benefits of each.



WHAT IS A PROCESSED FOOD OR BEVERAGE?

Any food or beverage that has been altered from its natural state.¹

What is the purpose or value of processing foods or beverages?

- Ensuring food safety
- Extending shelf life
- Enhancing taste, aroma, or texture
- Maximizing nutritional benefits¹

The most widely used methods of processing foods include:

FERMENTATION

Natural process for food preservation that converts carbohydrates into alcohols or acids.²

Benefits:²

- Improves digestibility
- Increases nutrient availability
- Promotes growth of probiotic bacteria, which have been associated with improved digestive & immune health
- Acids contribute to unique flavor, aroma, & texture



FERMENTED product examples:

Yogurt, sourdough, cheese, wine



PASTEURIZATION

Food preservation method using heat treatment to kill harmful bacteria & microorganisms to improve food / beverage safety & shelf life.³

Benefits:³

- Improves food safety & prevents foodborne illnesses
- Extends shelf life by slowing spoilage
- Preserves quality of taste, texture, & nutritional value

PASTEURIZED product examples: Milk & dairy, eggs, fruit juices



MILLING

Process of grinding grains (such as wheat, corn, and oats) to make flour & other bread products.⁴

Benefits:⁴

- Improves digestibility
- Improves shelf life
- Intensifies flavors & aromas



MILLED product examples: Pasta, oatmeal, bread, grain snacks



FORTIFIED product examples: Breakfast cereals, bread, milk / milk alternatives, fruit juice

FORTIFICATION

Addition of nutrients such as vitamins, minerals, or protein to foods or beverages. Nutrients commonly added to fortified foods include: folic acid, vitamins A, B6, B12, C, E, D, calcium, iron and iodine.⁵

Benefits:

- Improves nutritional quality of foods
- Restores nutrients that may have been lost during processing
- Public health reduces rates of nutrient deficiencyrelated illnesses

DEHYDRATION

Food preservation method using heat (hot air or other methods) to remove moisture / water content from a food.⁷

Benefits:⁷

- Extends shelf life
- Maximizes availability year-round
- Prevents growth of harmful bacteria
- Intensifies taste and texture
- · Reduces weight / bulk of food for convenience



DEHYDRATED product examples:

Dried fruit, meat jerky, dried herbs

References:

- 1. Dwyer JT, Fulgoni VL 3rd, Clemens RA, Schmidt DB, Freedman MR. Is "processed" a four-letter word? The role of processed foods in achieving dietary guidelines and nutrient recommendations. Adv Nutr. 2012;3(4):536-548. Published 2012 Jul 1. doi:10.3945/an.111.000901
- 2. Ritchie ML, Romanuk TN. A meta-analysis of probiotic efficacy for gastrointestinal diseases. PLoS One. 2012;7(4):e34938. doi:10.1371/journal.pone.0034938
- 3. Helmenstine AM. What Is Pasteurization? ThoughtCo. Updated Nov 25, 2019. Accessed Nov 22, 2024. https://www.thoughtco.com/what-is-pasteurization-4177326 4. North American Millers' Association. What Is Milling? Accessed Nov 22, 2024. https://namamillers.org/consumer-resources/what-is-milling/
- 5. Olson R, Gavin-Smith B, Ferraboschi C, Kraemer K. Food Fortification: The Advantages, Disadvantages and Lessons from Sight and Life Programs. Nutrients. 2021;13(4):1118. Published 2021 Mar 29. doi:10.3390/nu13041118
- 6.De Wals P, Tairou F, Van Allen MI, et al. Reduction in neural-tube defects after folic acid fortification in Canada. N Engl J Med. 2007;357(2):135-142. doi:10.1056/NEJMoa067103
- 7. Jayas DS. Food Dehydration. In: Reference Module in Food Science. Elsevier; 2016. ISBN 9780081005965. https://doi.org/10.1016/B978-0-08-100596-5.02913-9.