

How processed foods affect health, performance, and mission readiness

Processed foods often get a bad rap—labeled as unhealthy, low-quality, or even dangerous. But are those assessments accurate? The truth is, the term “processed” covers far more than cheese puffs and microwavable meals. It includes whole-wheat bread, homemade soup, and frozen vegetables—foods that can fit into a high-performance lifestyle. To sustain readiness and make informed choices for your health, it’s essential to understand what food processing really means.

What are processed foods?

The definition of processed foods varies widely depending on the source. In general, processed foods are those *that have been changed* through actions such as washing, cleaning, cutting, heating, cooking, freezing, fermenting, packaging, or other procedures that alter a raw agricultural commodity from its natural state.

Broadly speaking, processing includes any deliberate alteration to food that occurs between its point of origin (farm) and its point of destination (your home). By this definition, virtually all foods you eat are likely processed to some degree. If you do anything more than pull it out of the ground or off the tree and eat it right away, it’s been processed.

Common Food Processing Methods



Washing



Chopping



Heating



Freezing



Canning



Drying



Smoking



Packaging



Fermenting



Pasteurizing



Juicing



Adding additives

Food processing includes simple and traditional methods such as heating, fermenting, pickling, and smoking (techniques that can be done at home), as well as modern industrial methods such as pasteurization and modified atmosphere packaging (for example, filling chip bags with nitrogen gas to preserve freshness). Processing can also refer to

transforming ingredients into edible products, such as combining them to make homemade bread or pasta. Because processing occurs on a spectrum, it's helpful—and often necessary—to distinguish between degrees of processing.

A widely used system for classifying processed foods is the NOVA classification, which divides foods into 4 groups based on the extent and purpose of processing.



Some scientists argue that food processing (the use of processing methods) and food formulation (the use of ingredients and additives) are distinct concepts. They suggest that foods with excessive added ingredients should be called “ultra-formulated” to distinguish them from “ultra-processed.” However, classifying foods within these categories is not always easy, and governing bodies continue to discuss how to define ultra-processed foods.

Why do processed foods exist?

Food is processed for many reasons, and different processing methods offer both pros and cons, especially in relation to mission readiness.

Some benefits of food processing include:

- **Affordability.** Processed foods can provide a cost-effective way to meet nutrition needs without sacrificing quality. For example, canned vegetables may cost up to 20% less than fresh options while offering similar nutrient content, which can be critical for Service Members and families facing tight budgets or [low food security](#).
- **Nutrient availability and accessibility.** Processing helps ensure a consistent, reliable food supply anywhere in the world. It allows for year-round access to foods that might otherwise be seasonal and supports shelf-stable, nutrient-dense options essential for deployed environments or areas with limited grocery access. Reliable access to food directly supports readiness and mission success.
- **Fortification.** Food fortification—adding essential vitamins and minerals to food products—is a form of processing that helps prevent nutrient deficiencies and maintain force health. Examples include fortified milk and iodized salt, which have improved population health outcomes globally.
- **Food safety.** Processing techniques such as pasteurization, cooking, and drying destroy harmful bacteria and extend shelf life. These methods help ensure food safety during storage, transport, and field operations.
- **Reduced food waste.** Extending shelf life through processing minimizes spoilage and food waste, improving both logistical efficiency and sustainability—key priorities for military operations and installations.
- **Special dietary needs.** Processing foods enables the development and production of food items that meet special dietary needs, such as gluten-free, lactose-free, or plant-based alternatives. These options help Service Members with dietary restrictions meet mission nutrition requirements.
- **Convenience.** Ready-to-eat, frozen, or pre-chopped items save time and effort, which is important for Service Members balancing demanding schedules, families, and training requirements. Convenience doesn't have to mean poor nutrition when selections are made wisely.

However, food processing can also have undesirable effects. Some cons of food processing include:

- **Excess nutrients of concern.** Some processed foods contain high levels of sodium, added sugars, or saturated fats. Over time, consuming too much of these can increase the risk of high blood pressure, poor cardiovascular health, and fatigue—factors that directly affect health, mission performance, and long-term readiness.

- **Nutrient losses.** Certain processing methods can reduce the vitamin, mineral, or fiber content of foods. For example, during milling, grains are refined, removing fiber and B vitamins, while high-heat processing can destroy heat-sensitive nutrients.
- **Overconsumption of energy.** Ultra-processed foods can be energy-dense (high in calories but low in nutrients) and hyperpalatable (engineered to taste extremely rewarding) making them easy to overeat. Over time, excess calorie intake can negatively affect body composition and performance—key factors in maintaining mission readiness.
- **Formation of harmful compounds.** High-temperature cooking of some meats can create harmful chemical compounds that may increase the risk of certain diseases.
- **Unknown long-term effects.** Some food additives and ultra-processing techniques are still being studied for their potential long-term health effects. While these foods may be safe in moderation, relying heavily on them may pose unknown health risks and compromise operational longevity.

Processed foods exist on a spectrum of healthiness, and in many ways, food processing has improved our quality of life. However, some processed and ultra-processed foods can be low in essential nutrients and high in calories, nutrients of concern, and industrial additives. While it's not true that all processed foods are bad, eating large amounts of ultra-processed foods over time can reduce overall health and readiness.

The health effects of eating too many ultra-processed foods

A higher intake of ultra-processed foods, as defined by the NOVA classification, is associated with an increased risk of negative health outcomes such as overweight and obesity, type 2 diabetes, cardiovascular disease, certain cancers, inflammatory bowel disease, and depression. Ultra-processed foods *do not necessarily cause* these conditions, but research indicates a connection between them.

A primary concern with ultra-processed foods is that people eat too much of them. Ultra-processed foods are the main source (nearly 58%) of calories consumed in the United States, and up to 80% of dietary salt comes from processed foods. When most of your calories come from ultra-processed foods—high in added sugar, salt, and fat but low in essential nutrients—you're likely displacing **nutrient-dense**, minimally processed foods.

Ultra-processed foods are often hyperpalatable and calorie-dense, making it easy to overeat while still falling short on key vitamins and minerals. Over time, a diet high in ultra-processed, nutrient-poor foods exposes you to excessive additives and calories and increases the risk of nutrient deficiencies and malnutrition—a dangerous combination.

The bottom line

The healthiness of a food cannot be determined solely by how processed it is or by how many ingredients it contains. Processed foods are not inherently good or bad—they exist on a spectrum. In some cases, processing can make food less healthy (for example, by adding excess sugar, salt, or saturated fat). In other cases, it can make food healthier (such as pasteurizing milk to improve safety or fortifying it with vitamin D).

Many processed food options, such as frozen vegetables, fortified cereals, and shelf-stable proteins, play a vital role in supporting readiness by improving food safety, affordability, and access across diverse duty locations. However, you shouldn't ignore the health risks associated with the high-intake of ultra-processed foods. [Choosing minimally processed foods](#) is the best strategy for maintaining long-term health, performance, and mission readiness.

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