



Nova group:

What are ultra-processed foods?

Food processing generally refers to any action that alters food from its natural state, such as drying, freezing, milling, canning, or adding salt, sugar, fat, or other additives for flavor or preservation.^{1,2} Most foods are processed in some way before purchase or consumption. Broadly speaking, the term “processed foods” encompasses everything from washed and peeled vegetables to canned, cooked beans to candy and sodas. Researchers developed the NOVA classification system³ to categorize foods into one of four groups according to the extent and purpose of processing:

1 Unprocessed or minimally processed

Foods unaltered or altered by processes such as removing inedible parts, drying, grinding, cooking, pasteurization, freezing, or non-alcoholic fermentation. No substances are added to the original food. Processing aims to increase food stability and enable easier or more diverse preparation.

Examples: fresh or frozen fruits/vegetables, pulses, grains, flours, nuts, pasteurized milk, chilled/frozen meat

2 Processed culinary ingredients

Substances obtained directly from group 1 foods or from nature, created by industrial processes such as pressing, centrifuging, refining, extracting, or mining. Processing aims to create products to be used in preparation, seasoning, and cooking of group 1 foods.

Examples: butter, vegetable oils, other fats, sugar, molasses, salt

3 Processed foods

Products made by adding ingredients from group 2 to group 1 foods and preserved via methods such as non-alcoholic fermentation, canning, or bottling. Processing aims to increase stability and durability of group 1 foods and to make them more enjoyable.

Examples: canned vegetables in brine, fresh cheeses, freshly made breads, cured meats

4 Ultra-processed foods

Formulations of edible ingredients (low-cost, derived from group 1 foods) containing substances not used in home kitchens (e.g., protein isolates) and/or cosmetic additives (e.g., flavors, colors, emulsifiers). Multi-step processing can include intense physical, chemical, or biological processes (e.g., extrusion, hydrogenation). Manufactured to be convenient, durable, tasteful (often hyper-palatable), and profitable (using cheap ingredients).

Examples: packaged crisps, puffs, cookies/biscuits, instant soups/noodles, ready-to-eat/ready-to-heat meals, candy, soft drinks



UPFs (Nova group 4) are not simply foods that have been modified by cooking or adding ingredients, rather edible formulations that have been transformed from food-derived substances, along with additives that heighten their appeal and durability. UPFs contain low-cost ingredients, have long shelf-lives, are hyper-palatable, and are highly branded and aggressively marketed to consumers. UPFs are often high in calories, free sugars, refined starches, saturated and trans fats, and sodium.⁴ Scholars are increasingly recognizing and calling attention to the addictive qualities of certain UPFs.⁵⁻¹²

