

# What are ultra-processed foods and how do they impact our health?



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# Are ultra-processed and health

- As a group, “Ultra-processed foods” are consistently associated with negative health outcomes (increased risk of cancer, cardiovascular health, metabolic health including diabetes and obesity) even though some food in these categories, e.g. ultra-processed whole grain foods, buck the trend.
- Public health authorities in most countries including Canada and Germany emphasize consumption of minimally processed plant foods (fruit, vegetables, whole grains, pulses) and a reduced consumption of “processed” or “ultra-processed” foods.
- The NOVA classification is a system for grouping foods based on the extent and purpose of industrial food processing. This criteria that is used in most studies are imperfect and disputed but the correlation holds nevertheless.
- “If a food is wrapped in plastic and has at least one ingredient that you don’t find in a domestic kitchen, then it’s probably an ultra-processed food”



# On the NOVA criteria on ultra-processed foods

- What is likely correct: To categorize food not on the basis of what it is composed of but how it gets to the consumer. This is a paradigm shift and a shift for the better!
  - What is likely incorrect: The sentiment that what happens in industry is bad while what happens in the household is good.
- **Some examples:**
  - I bake the perfect loaf of sourdough bread and enjoy it just fine but: if I carry the same loaf to the supermarket for sale, it is ultra-processed and damages health?
  - Why would canning of beans (= 20 min at 121 °C) be any worse than overnight soaking and 2 – 3 h of cooking?
  - Fermentation is a unit operation in food processing but not a processing step?



# Food choices and all-cause mortality (U.K.)

	Q1 (lowest)	Q2	Q3 (typical)	Q4	Q5 (highest)
Whole grains	1	0.78 (0.74–0.81)	0.77 (0.73–0.8)	0.82 (0.78–0.86)	0.82 (0.79–0.86)
Vegetables	1	0.95 (0.9–0.99)	0.94 (0.9–0.98)	0.92 (0.87–0.96)	0.93 (0.89–0.97)
Fruit	1	0.88 (0.84–0.91)	0.84 (0.79–0.89)	0.85 (0.81–0.89)	0.86 (0.82–0.9)
Nuts	1	0.82 (0.76–0.89)	0.91 (0.8–1.03)	0.89 (0.73–1.08)	0.81 (0.2–3.24)
Legumes	1	0.91 (0.83–0.98)	1.02 (0.87–1.21)	1.02 (0.6–1.72)	0.72 (0.1–5.11)
Fish	1	0.97 (0.92–1.02)	0.96 (0.92–1.00)	1.03 (0.98–1.09)	0.99 (0.94–1.03)
Egg	1	0.82 (0.73–0.93)	0.85 (0.78–0.93)	0.90 (0.83–0.96)	1.08 (0.95–1.23)
Milk	1	0.99 (0.85–1.16)	0.98 (0.85–1.13)	0.95 (0.82–1.1)	0.93 (0.8–1.08)
Refined grains	1	1.20 (1.12–1.28)	1.17 (1.11–1.23)	1.23 (1.18–1.28)	1.16 (1.11–1.21)
Meat, red	1	1.02 (0.95–1.09)	1.05 (0.99–1.13)	1.18 (1.07–1.29)	1.21 (1.08–1.37)
Meat, processed	1	1.02 (0.96–1.08)	1.13 (1.06–1.2)	1.25 (1.14–1.37)	1.47 (1.27–1.69)
Meat, white	1	0.97 (0.90–1.04)	0.91 (0.85–0.98)	1.00 (0.88–1.15)	0.97 (0.71–1.33)
Sugar-sweetened beverages	1	0.91 (0.83–1)	1.02 (0.9–1.16)	1.22 (0.98–1.52)	1.59 (1.1–2.31)

Red = higher risk of all-cause mortality  
Green = lower risk of all-cause mortality

For example, those who consume the most vegetables (Q4 and Q5) have a lower risk of all cause mortality  
Those who consume the most red meat or sugar-sweetened beverages have a higher risk of all cause mortality

Where is Waldo? The difference between whole grain products and refined grain products is not the level of processing but the degree of fractionation / purification?



In the U.K. (and in Canada), whole grain products are mostly whole wheat products and mostly classified as “ultra-processed”

### **Nature’s Own Bread (2013)**

Unbleached wheat flour (wheat flour, malted barley flour, niacin, iron, thiamin, riboflavin, folic acid), water, sugar, fiber, wheat gluten, yeast, salt, soy flour, soybean oil, cultured wheat flour, dough conditioner (contains sodium stearoyl lactylate, mono- and diglycerides, calcium peroxide, DATEM, ethoxylated mono- and diglycerides, enzymes, ascorbic acid), vinegar, guar gum, citric acid, soy lecithin, natamycin



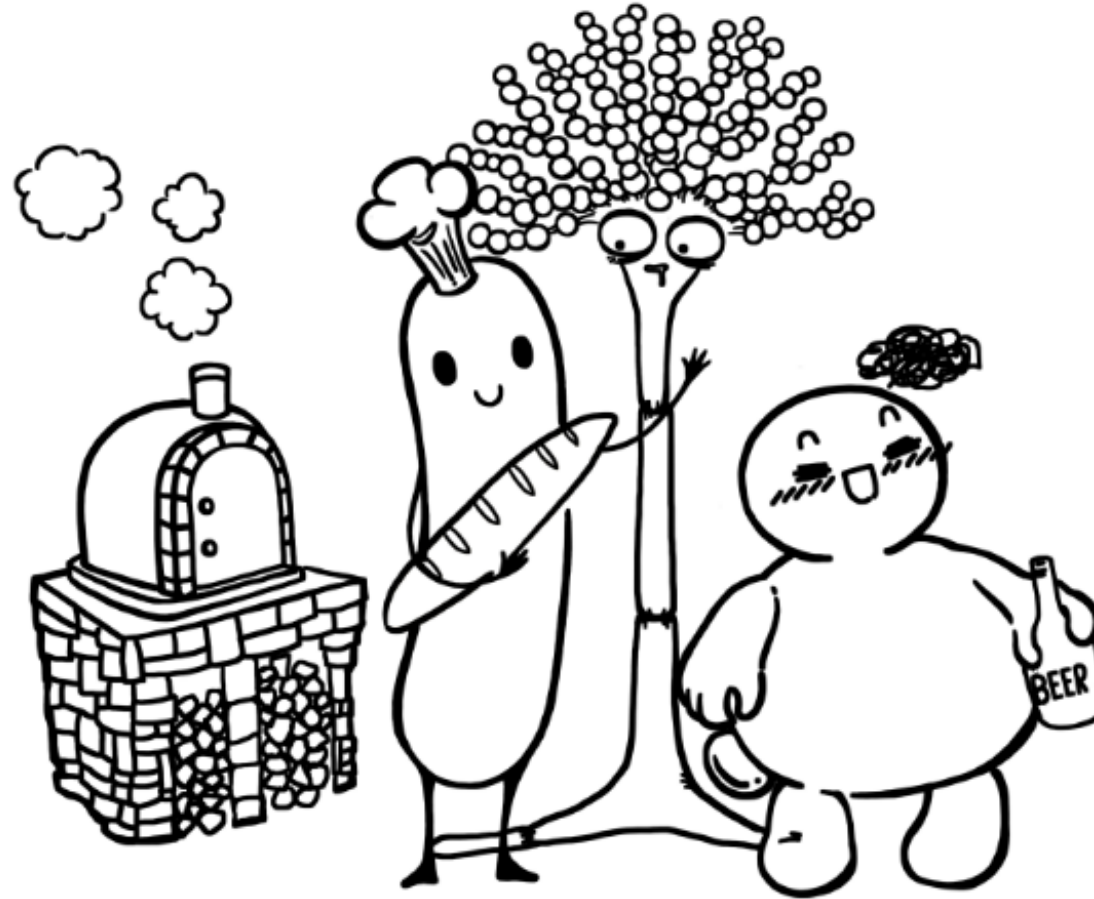
There are alternatives  
but we'll take time to get  
there (and then, as per  
NOVA criteria, it still is  
industrially produced  
and “ultra-processed”)



**Whole wheat bread:**  
Whole wheat flour, water, salt.



**... and we need help.**





# Summary

The correlation of consumption of “ultra-processed foods” to negative health outcomes / all-cause mortality is fairly convincing – this won’t go away.

The NOVA criteria to determine which foods are ultra-processed and which are not are critically flawed.

In the correlations, the heavy hitters (sugar-sweetened beverages, processed meats, refined grains) outweigh the “ultra-processed” whole grains, legumes and vegetables.

We are a few clinical trials short of getting to the bottom of this but there is hope.



# Thanks to the team in the Food Micro Laboratory and the funding agencies!

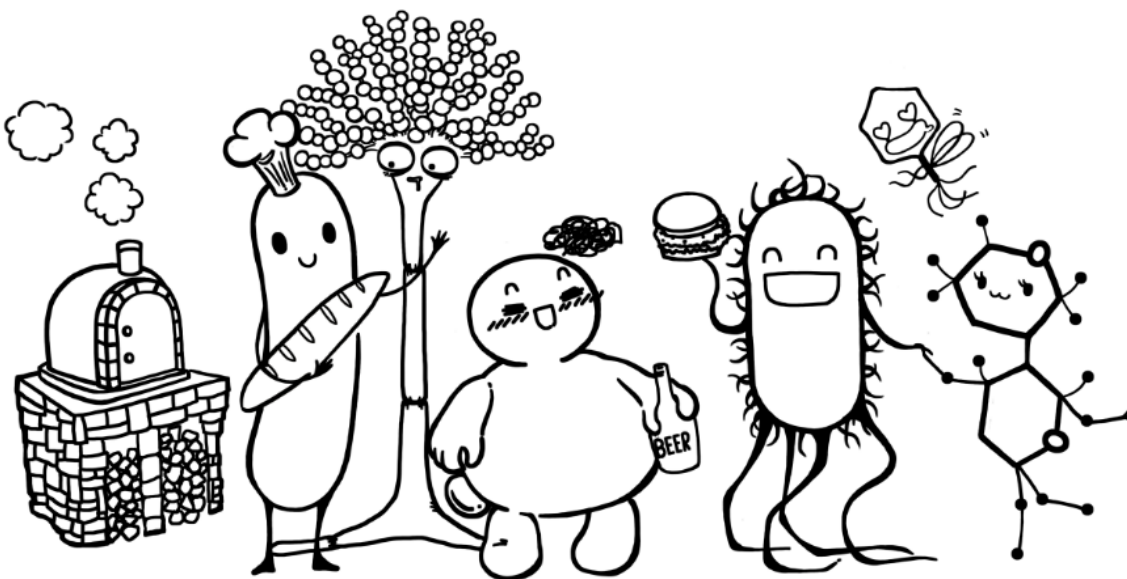
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