

Study associates higher mortality with eating lots of ultra-processed foods, red meat

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Loma Linda University Health researchers say high consumption of ultra-processed foods and, separately, high consumption of red meat may be important mortality indicators. Their recently published study adds to a growing body of knowledge about how ultra-processed foods and red meat impact human health and longevity.

Compared to past literature analyzing ultra-processed and animal-based foods' [health](#) impacts, this study included one of the largest cohorts, with over 77,000 participants. It also considered a diverse array of diets, including vegetarian and non-vegetarian. As a result, outcomes provided new insights about ultra-processed foods as a common denominator of mortality across vegetarians and non-vegetarians, says Gary Fraser, MBChB, Ph.D., a study author, and professor at Loma Linda University School of Medicine and School of Public Health.

"Our study addresses the question of what can make a [vegetarian diet](#) healthy or unhealthy," Fraser says. "It seems that the proportion of ultra-processed foods in someone's diet is actually more important with respect to mortality than the proportion of animal-derived foods they eat, the exception being red meat."

Fraser says the study exposes how it is possible to be a "bad vegetarian or a good non-vegetarian" because it isolates the [health impacts](#) of processed foods in the diet—whether it's vegetarian or not. Results revealed that vegetarians who ate a lot of processed foods as part of their diets faced a similar proportionate increase in mortality outcomes as non-vegetarians who ate a lot of processed foods in their diets.

The study, "Ultra-processed [food intake](#) and animal-based food intake and mortality in the Adventist health study-2," published in the *American Journal of Clinical Nutrition*, assesses the mortality risks of two dietary factors independent of each other:

- the proportion of the diet composed of ultra-processed foods as opposed to less processed foods; examples of ultra-processed foods include soft drinks, certain meat analogs, and candy.
- the proportion of the diet from animal-based foods (meats, eggs, and dairy) as opposed to plant-based foods.

Seven LLU researchers gathered data from an observational prospective cohort study in North America, recruited from Seventh-day Adventist churches, comprising of 77,437 female and male participants.

Participants completed a frequency food questionnaire including over 200 food items to describe their diets. They also provided other health-related and demographic information about themselves, including sex, race, geographic region, education, [marital status](#), rate of tobacco and alcohol use, exercise, sleep, BMI, and comorbid conditions with cardiovascular disease or diabetes.

Researchers then analyzed participants' health and [demographic information](#) in conjunction with their mortality data, provided by the National Death Index, for a mean timeframe of about seven and a half years. Next, researchers used a [statistical model](#) to help them consider each variable independently of others and produce a cause-specific mortality analysis.

They adjusted their statistical model to focus on ultra-processed food intake irrespective of other factors like animal-food consumption or age. In doing so, Fraser and co-authors found that people who obtained half of their total calories from ultra-processed foods faced a 14% increase in mortality compared to people who received only 12.5% of their total calories from ultra-processed foods.

Study authors report that high consumption levels of ultra-processed foods were associated with mortality related to respiratory, neurologic, and renal conditions—particularly Alzheimer's disease, Parkinson's disease, and [chronic obstructive pulmonary disease](#) (even when restricted to people who never smoked). However, high ultra-processed food consumption was not associated with mortality from [cardiovascular disease](#), cancer, or endocrine conditions.

Results did not reveal an association between mortality and dietary

intake of total animal-based foods. Once researchers parsed animal-based foods into sub-categories, however, they found a statistically significant 8% increase in the mortality risk associated with moderate (approximately 1 ½ oz per day) consumption of red meat compared to no red meat.

Overall, Fraser says the study demonstrated how greater consumption of ultra-processed foods was associated with higher all-cause mortality, even in a health-conscious Adventist population with many vegetarians. Such findings of ultra-processed [food](#) consumption and mortality provide a "helpful confirmation of what people expected," he says.

The study calls for further research into the specific health effects of ultra-processed foods consumption in humans. While research endeavors continue to deepen understanding of how ultra-processed foods impact our health, Fraser advises avoiding consuming them at high levels.

"If you're interested in living longer or to your maximal potential, you'd be wise to avoid a [diet](#) filled with ultra-processed foods and replace them with less processed or unprocessed foods," Fraser says. "At the same time, avoid eating a lot of red meat. It's as simple as that."

More information: Michael J Orlich et al, Ultra-processed food intake and animal-based food intake and mortality in the Adventist Health Study-2, *The American Journal of Clinical Nutrition* (2022). [DOI: 10.1093/ajcn/nqac043](#)

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