

# Fruity Lunch, Veggie Dinner

## Fruit with lunch and vegetable-based dinner lower mortality

*We all know we should eat plenty of fruits and vegetables. But does the time of day we eat specific foods matter? Can we be healthier based on the time of day we eat our spinach? This study, from the Journal of the American Heart Association, examined dietary patterns and found that the timing of our fruit and vegetable consumption as well as substituting certain foods for our snacks can help us to reduce our cardiovascular and all-cause mortality.*



### Abstract

- Background: Although accumulating evidence has demonstrated that consumption time of energy and macronutrients plays an important role in maintaining health, the association between consumption time of different foods and cardiovascular disease, cancer, and all-cause mortalities is still largely unknown.
- Methods and Results: A noninstitutionalized household population of the US 21 503 participants from National Health and Nutrition Examination Survey was included. Meal patterns and snack patterns throughout a whole day were measured using 24-hour dietary recall. Principal component analysis was performed to establish dietary patterns. Cox proportional hazards models were used to evaluate the association between dietary patterns across meals and cardiovascular disease (CVD), cancer, and all-cause mortalities. During the 149 875 person-years of follow-up, 2192 deaths including 676 deaths because of CVD and 476 because of cancer were documented. After adjusting for potential confounders, participants consuming fruit-lunch had lower mortality risks of all-cause (hazard ratio [HR], 0.82; 95% CI, 0.72–0.92) and CVD (HR, 0.66; 95% CI, 0.49–0.87); whereas participants who consumed Western-lunch were more likely to die because of CVD (HR, 1.44; 95% CI, 1.10–1.89). Participants who consumed vegetable-dinner had lower mortality risks of all-cause, CVD, and cancer (HR all-cause, 0.69; 95% CI, 0.60–0.78; HRCVD, 0.77; 95% CI, 0.61–0.95; HR cancer, 0.63; 95% CI, 0.48–0.83). For the snack patterns, participants who consumed fruit-snack after breakfast had lower mortality risks of all-cause and cancer (HR all-cause, 0.78; 95% CI, 0.66–0.93; HR cancer, 0.55; 95% CI, 0.39–0.78), and participants who consumed dairy-snack after dinner had lower risks of all-cause and CVD mortalities (HR all-cause, 0.82; 95% CI, 0.72–0.94; HRCVD, 0.67; 95% CI, 0.52–0.87). Participants who consumed a starchy-snack after main meals had greater mortality risks of all-cause (HR after-breakfast, 1.50; 95% CI, 1.24–1.82; HR after-lunch, 1.52; 95% CI, 1.27–1.81; HR after-dinner, 1.50; 95% CI, 1.25–1.80) and CVD (HR after-breakfast, 1.55; 95% CI, 1.08–2.24; HR after-lunch, 1.44; 95% CI, 1.03–2.02; HR after-dinner, 1.57; 95% CI, 1.10–2.23).
- Conclusions: Fruit-snack after breakfast, fruit-lunch, vegetable-dinner, and dairy-snack after dinner was associated with lower mortality risks of CVD, cancer, and all-cause; whereas Western-lunch and starchy-snack after main meals had greater CVD and all-cause mortalities.

*This study is interesting because it examined dietary patterns including the timing of food intake as well as what foods are eaten. The idea of chrononutrition, that meal timing impacts health is an emerging field of research that I find very interesting. I have written previously about intermittent fasting, which is a form of chrononutrition. These researchers studied the eating patterns of over 21,500 people who were followed for 149,875 person-years to determine if any dietary patterns developed for mortality from cardiovascular disease, all-cause, and cancer. They discovered that people who consumed a fruit-based lunch had a 34% decrease in cardiovascular death and an 18% decrease in overall mortality while people who consumed a typical Western lunch (refined grains, cheese, cured meat) had a 44% increased risk in cardiovascular mortality. Those who ate a vegetable-based dinner had a 23% decreased risk of cardiovascular death, a 31% decrease in all-cause mortality, and a whopping 37% decrease in cancer deaths.*

*What about snacking? The study found lower risks for cancer and all-cause mortality in people who consumed a fruit-based snack after breakfast and lower risk of cardiovascular disease and all-cause mortality in those who consumed a*

*dairy-based snack after dinner. Those who ate starchy snacks after meals had around a 50% increase in all-cause mortality and cardiovascular mortality.*

*Main meal patterns of fruit lunch and vegetable dinner were associated with decreased mortality from cancer, cardiovascular disease, and all-cause, whereas a typical Western lunch was associated with an elevated risk of cardiovascular and all-cause mortality. Snacks of fruit after breakfast and dairy products after dinner were associated with decreased mortality risks, whereas the starchy snack pattern after main meals was associated with greatly elevated mortality risks.*

*I would recommend a mainly plant-based dinner. There is never a bad time to eat vegetables but eating them for dinner seems to be especially important. Have some fruit for lunch and avoid processed foods. If you are going to snack, have a piece of fruit in the morning and a vegetable or dairy-based snack in the evening. The biggest thing is to avoid starchy snacks after meals. They are real killers...*

Wei W, Jiang W, Huang J, Xu J, Wang X, Jiang X, Wang Y, Li G, Sun C, Li Y, Han T. Association of Meal and Snack Patterns With Mortality of All-Cause, Cardiovascular Disease, and Cancer: The US National Health and Nutrition Examination Survey, 2003 to 2014. J Am Heart Assoc. 2021 Jun 23:e020254. doi: 10.1161/JAHA.120.020254. Epub ahead of print. PMID: 34157852.