

Fruit And Veggies Beneficial For Heart Health, But Carbs Aren't. What?



By Ruth Kava — September 1, 2017



Basket of Health? [1]

What to believe? The headlines are all over the place — “ Low-fat diet could kill you, major study shows; International study shows moderate consumption of fats and carbohydrates best for health; High carb diet worse than high fat: study.” And all these refer to the very same study. Let’s untangle things a bit.

A very large international study, the Prospective Urban Rural Epidemiology (PURE) study included over 135,000 people from 18 countries in North and South America, Europe, Africa, and Asia. As is usually the case with this type of epidemiological study, various aspects of the results were reported and published separately, although the reports were based on the same data. [One report](#) [1] on fruit, vegetable and legume intake and their association with cardiovascular disease (CVD) and death, was published in *The Lancet*, as was the [second report](#), [2] linking dietary nutrients, i.e. carbohydrates, proteins and fats, with those outcomes.

In both reports, investigators relied on validated food-frequency questionnaires, completed at the baseline (initial) interviews for information about participants’ diets. In addition, the participants were weighed and measured, and demographic characteristics, socioeconomic status, physical activity and family history were also determined.

In a nutshell, the report on fruit, veggie and legume (FVL) intake found an inverse association between higher intakes of those foods and major CVD endpoints such as heart attacks, major CVD, cardiovascular mortality and total mortality. When the statistical model was adjusted for multiple participant characteristics (e.g., age, sex, energy intake, smoking status, and others), only the associations between intake and lower risk of total mortality and non-CVD mortality were

statistically significant.

The investigators found that the risk for total mortality was lowest (0.78) when participants consumed 3 to 4 servings of FVL per day, compared to those who reported eating fewer than one serving per day. That risk wasn't any lower in people who consumed more than 4.

A major conclusion of the researchers was that higher FVL intake is associated with a lower risk of non-cardiovascular and total mortality with a non-significant trend towards reduction of cardiovascular mortality. They also noted that dietary recommendations in Europe and North America for these foods range from 400-800 grams per day — an amount that's out of reach in much of the developing world. However, their finding of a significant risk reduction with less than that could mean that such recommendations might be lowered.

In the second study, data from the questionnaires was analyzed to determine consumption levels of macro-nutrients — fat, protein and carbohydrates — and any association with CVD and mortality. Intakes of these nutrients were divided into 5 groups — quintiles — and the association between the levels of consumption and the risk of CVD and mortality was determined.

For carbohydrate consumption, they found a 28 percent significantly increased risk of total mortality for the highest quintile of consumers compared to the lowest; but there was no such association with either CVD or CVD mortality. Conversely, when they looked at consumption of fats, the investigators found very different results.

Those in the highest quintile of consumption of total fat, saturated, unsaturated and polyunsaturated fats, compared to those in the lowest quintile, had lower risks of total mortality (anywhere from a decrease of 14 to 33 percent). In addition, a higher intake of saturated fat was associated with a 21 percent lower risk of stroke. Total, unsaturated and unsaturated fat intake wasn't significantly associated with risk of heart attacks or CVD mortality, however. Authors of the report commented "Our findings indicate that limiting total fat consumption is unlikely to improve health in populations, and a total fat intake of about 35% of energy with concomitant lowering of carbohydrate intake might lower risk of total mortality."

Current [Dietary Guidelines for Americans](#) [3] already agree to some extent with these authors in that while they recommend a 10 percent of caloric intake from saturated fats limit, they do not recommend that dietary fats be replaced by carbohydrates. The finding that a higher intake of saturated fat was associated with decreased mortality risk but not CVD mortality was intriguing, considering that it's been widely recognized that restriction of saturated fats might help lower LDL cholesterol.

While impressive in its scope and amount of information provided, there are limitations to the PURE study. As we have noted before, such epidemiological studies don't and can't prove cause and effect. The finding that a particular outcome, say CVD, is more likely to happen in people who consume the highest levels of carbohydrates, can't be interpreted to mean that those nutrients caused CVD.

Further, all the dietary data are self-reported, and thus subject to any errors individuals might make in estimating usual intakes. Also, dietary intakes were measured only at the initial interviews,

and later statistics thus had to assume these intakes didn't change over the follow-up period (median of 7.4 years). Whether they did or not might depend on which country one lived in, as well as one's economic status.

Will the results of this study and others like it drive a paradigm shift — changing the zeitgeist from a 'fats bad carbs good' to the opposite? The American Dietary Guidelines are due for an update in 2020, and it will be intriguing to see the extent to which it will or won't reflect such data.

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[1] [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32253-5/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32253-5/fulltext)

[2] [http://www.thelancet.com/journals/landia/article/PIIS2213-8587\(17\)30283-8/fulltext?elsca1=tlxpr](http://www.thelancet.com/journals/landia/article/PIIS2213-8587(17)30283-8/fulltext?elsca1=tlxpr)

[3] <https://health.gov/dietaryguidelines/2015/guidelines/chapter-1/a-closer-look-inside-healthy-eating-patterns/#other-components>