Media Think 10 Dietary Magic Bullets Will Prevent Half Of US Deaths

By Chuck Dinerstein, MD, MBA — March 8, 2017

Here we go again:

From Yahoo [1]: Bacon, soda & too few nuts tied to big portion of US deaths

From NBC [2]: These 10 Foods Affect Your Risk of Heart Disease the Most - Just 10 foods account for nearly half of all heart disease deaths in the U.S., researchers reported Tuesday.

From Reuters [3]: Poor diet tied to nearly half of U.S. deaths from heart disease, stroke, diabetes

From the Minneapolis Star Tribune [4]: Bacon, soda and too few nuts tied to big portion of U.S. deaths
You get my point; all four sites got the news wrong and it couldn’t have been by accident. Instead it was the usual stuff by organizations that consistently claim they should be the nation’s sources for science and health information. Even Naomi Oreskes has a hard time being that wrong.

Here is the actual ‘science’ found in a study in JAMA by Renata Micha, RD, Ph.D. et al. entitled Association Between Dietary Factors and Mortality From Heart Disease, Stroke, and Type 2 Diabetes in the United States [5]

They report on a mathematical model that attempts to determine what portion of cardiometabolic disease are attributable to specific nutrition. Their model incorporates four datasets:

- Our dietary habits from National Health and Nutrition Examination Surveys (NHANES) which involved two standardized 24-hour dietary recalls
- Ten dietary issues with “probable or convincing evidence” linking them to cardiovascular disease
- Data from meta-analysis “of prospective cohorts or randomized clinical trials evaluating direct associations of dietary factors with CHD, stroke, or type 2 diabetes by age.”
- Disease-specific deaths from the National Center for Health Statistics (NCHS)

The mathematics underlying the model are a bit complicated for me to describe, but in general they determine how much our diet (using the NHANES data) varies from the recommended or optimum diet and multiply that fraction by the actual number of disease-specific deaths to identify the fraction of these deaths ‘linked’ (at least using their mathematical model) to the dietary, shall we call them, indiscretions?

Now the percentage that our diets differ from the optimum is, in fact, a fuzzy number – by that I mean it is an estimate. Because most people can’t recall what they ate for lunch yesterday much less 10 years ago. Furthermore, multiplying the actual number of deaths by such a fuzzy diet number is an important underlying assumption of their model – this fraction represents the dietary contribution to our deaths. They know that these are estimates and use the kind of means to ‘quantify’ uncertainty that make statistics experts go crazy You really can’t quantify uncertainty because then it would be certain. Bottom line, the numbers are just a guess about the effects of diet on cardiometabolic mortality.

And what did they find?

First, let’s go with the lead the media used.

“When all 10 dietary factors were evaluated in combination, they were associated with 318,656 estimated cardiometabolic deaths, or nearly 1 in 2 (45.4%) of all US cardiometabolic deaths in 2012.”

Translation-If an individual had all ten dietary habits they had a 45.5% chance of dying from coronary artery disease (CHD), stroke, diabetes, and hypertension. I know what your thinking you can only die from one of these, so already the estimate is in trouble. I have tried to translate all of their findings into a table, a little complex, but I believe a faithful precis:
<table>
<thead>
<tr>
<th>Nutrient</th>
<th>CHD</th>
<th>Stroke</th>
<th>Hypertension</th>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased amounts of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td>9.5%</td>
<td>10.2%</td>
<td>10.7%</td>
<td></td>
</tr>
<tr>
<td>Processed meats</td>
<td>8.2%</td>
<td>12.3%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Sugary beverages</td>
<td>7.4%</td>
<td>10.8%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Decreased amounts of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuts</td>
<td>8.5%</td>
<td>14.7%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Omega 3 seafoods</td>
<td>7.8%</td>
<td>14.7%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>7.6%</td>
<td>-</td>
<td>21.9%</td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td>7.5%</td>
<td>-</td>
<td>21.9%</td>
<td></td>
</tr>
<tr>
<td>Whole grain</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>17.1%</td>
</tr>
</tbody>
</table>

Based on what I see, maybe we should tax salt instead of sugary beverages (Never mind, I just remembered the British tried that for other reasons in India and it didn’t work out) That aside, that 45% number in the headlines is nowhere to be found.

The authors go on to make a few more points missed in the media.

- Between 2002 and 2012, the total number of population adjusted US cardiometabolic deaths per year decreased by 26.5%. … Thus, absolute numbers of diet-related cardiometabolic deaths decreased for all dietary factors.
- Larger diet related proportional mortality was estimated in men than in women, consistent with generally unhealthier dietary habits in men. Suboptimal diet was also associated with larger proportional mortality at younger vs. older ages, among blacks and Hispanics vs. whites, and among individuals with low and medium education vs. high education.
- The study’s comparative risk assessment model does not prove that changes in these dietary habits reduce disease risk. Causality is different from identifying associations.

And here is there real conclusion of their paper which despite the fuzzy math, the quantified uncertainty, the combining of 4 modes of death into one has a relevant point to be made

Nationally, estimated cardiometabolic deaths related to insufficient healthier foods/nutrients remained at least as substantial as those related to excess unhealthful foods/ nutrients. These results inform strategies for prevention to reduce the health and economic burdens of cardiometabolic diseases in the United States. For example, positive messaging to patients, the public, and industry can emphasize maximizing the good (rather than simply reducing the harmful) food choices and products.
I think I got it now, eat less bad stuff, more good stuff, eat a balanced diet.

And forget expecting mainstream media to give you a diet of more than weak observational hot air.