

Measuring Dietary Intake

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Abstract

Newspaper articles routinely report the results of epidemiological studies of the relationship between what we eat and disease outcomes such as heart disease and various forms of cancer. One of the most-quoted studies is the Nurses Health Study, which follows the health outcomes 100,000 nurses and asks them questions about their dietary intakes. While there are exceptions, for the most part one can find a relationship between heart disease and diet, e.g., less fat, more fruits, etc. On the other hand, it is rare that prospective epidemiological studies of human populations find links between cancer and dietary intakes. Perhaps the most controversial of all is the question of the relationship between dietary fat intake and breast cancer. Countries with higher fat intakes tend to have higher rates of breast cancer, and yet no epidemiological study has shown such a link. The puzzle of course is to understand the discrepancy.

Obviously, the etiology of disease may explain why heart disease, with its intermediate endpoints such as serum cholesterol, has confirmed links to nutrition while the evidence is mixed with cancer. I will focus instead on a basic question of study design: how do we measure what we eat? Try this out: how many days per year do you eat apples? I am going to review the accumulating evidence that suggests that with complex, subtle disease such as cancer, with no good intermediate endpoints such as serum cholesterol for heart disease, finding links between disease and nutrient intakes will be the exception rather than the rule, simply because of the way diet is measured. I will close with remarks about the Women's Health Initiative Dietary Intervention Trial and two new cohort studies, along with my own views of the subject.