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Letter to Editor Open Access

Why Nutrition Science Is So Hard To Study?

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Letter to Editor

Is dairy good or bad for health? Is cholesterol evil? Does red meat kill or cure? Is the ketogenic diet a godsend or a health hazard? Can the vegan, vegetarian, piscatorial or raw food diets extend disease-free life? Nutrition is wrapped in multiple confusions. Why is it so hard to determine whether a food is good or bad for health? In medical science, proving any theory is difficult. The science of nutrition is not any different, but it also has some unique challenges. In this feature, we outline just some of these stumbling blocks. Despite the many issues that nutrition scientists face, understanding which foods benefit or harm health is essential work. Also, the public is growing increasingly interested in finding ways to boost health through diet. Obesity and diabetes are now highly prevalent, and both have nutritional risk factors. This has sharpened general interest further.

All areas of scientific research face the following issues to a greater or lesser degree, but because nutrition is so high on people's agenda, the problems appear magnified [1]. A changing world: Although the water is muddy and difficult to traverse, there are substantial victories within the field of nutrition research. For instance, scientists have determined that vitamin C prevents scurvy Trusted Source, that beriberi Trusted Source develops due to a thiamine deficiency, and that vitamin D deficiency causes rickets Trusted Source.

In all of those cases, there's a link between a selected compound and a specific condition. However, the picture is rarely so clear-cut. This is very true when investigating conditions wherein multiple factors are at play, like obesity, osteoporosis, diabetes, or heart condition. Also, nutrition-related conditions have changed over time: the foremost common threats to health wont to be deficiencies, whereas in Western countries today, overeating tends to be the first concern [2]. Understanding the role of food in health and disease is important and deserves attention. In this feature, we discuss some of the reasons that nutrition research seems to be so indecisive, difficult, and downright confusing.

In a perfect world, to know the health impact of a given food - goji berries, as an example - an experiment would go something like this: Scientists recruit 10,000 participants (both males and females, from a variety of nationalities and ethnicities) and house them during a laboratory for 10 years. The scientists feed everyone the precise same diet for the duration of their stay, with one difference: half the participants consume goji berries surreptitiously - perhaps blended into a mixed fruit smoothie [3].

Alcohol and tobacco are banned for the duration of the study: The participants must also exercise for an equivalent amount of your time each day; if some people exercised more, they might become healthier, no matter their goji berry intake. This would skew the data. Neither the researchers nor the participants are conscious of who is receiving the goji berry smoothie; if the participants knew they were receiving a "super food," they could benefit from the placebo effect. This so-called double-blinding is significant when running clinical trials.

During the decade-long study, the scientists monitor the participants' health intensively. This might involve running regular blood tests and medical imaging of course, the astronomical cost of this type of study is the very first stumbling block [4]. Also, ethics and good sense say that this is beyond impossible. In lieu of perfection: Nutritional research has got to make some concessions, because the perfect study is unachievable. So, in "observational studies," nutrition scientists search for links between what an individual consumes and their current or future state of health.

Observational studies can be incredibly useful. Using this method, scientists proved that tobacco causes lung cancer and that exercise is good for us. However, these studies are far from perfect. One issue with observational studies is that the researchers' reliance on self-reported food intake. They ask participants to notice down everything they eat for a group amount of your time, or to recollect what they ate within the past. This could ask yesterday or months earlier. However, human recall is far from perfect. Also, some people might purposely miss certain food items, such as their third candy bar of the day [5]. In addition, participants don't always know the precise size of their portions, or the complete list of ingredients in restaurant or take-out foods, as an example. Studies often ask questions on the long-term impact of a nutritional component on health. However, researchers tend to take dietary information at just one or two points in time. In reality, people's diets can change substantially over the course of a decade.

The issues associated with measuring nutrient intake are so ingrained that some authors have referred to self-reporting as a pseudoscience Trusted Source. The role of industry: These issues prompted a highly critical study, which appeared in the journal PLOS One Trusted Source, to pull apart data from the National Health and Nutrition Examination Survey (NHANES Trusted Source). The NHANES, which began in the 1960s, "is a program of studies designed to assess the health and nutritional status of adults and children in the United States." Experts use the findings to guide public health policy in the U.S.

The primary method of knowledge collection for the NHANES is 24-hour dietary recall interviews. Researchers use this information to calculate energy intake [6]. The authors of the critical paper conclude that "the ability to estimate population trends in caloric intake and generate empirically supported public policy relevant to diet-health relationships from U.S. nutritional surveillance is extremely limited."

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In an opinion piece, lead author Edward Archer pulls no punches, explaining that their paper demonstrated "that about 40 years and lots of many dollars of U.S. nutritional surveillance data were fatally awed. In nutrition epidemiology, these results are commonplace." Here, we meet the double-edged sword of industry: e PLOS One paper declares that funding for the critical study "was provided by an unrestricted research grant from e Coca-Cola Company."

Industry funding certainly doesn't invalidate the ndings of studies, but it should prompt us to wonder what the funder might gain from such research. In this case, a corporation that produces sugary drinks might enjoy destabilizing people's faith within the research that has deemed their products unhealthful. Perhaps this instance may be a little unusual; more commonly, an industry with a vested interest will fund studies that demonstrate the advantages of a product.

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Conflicts of Interest

e author has no known con icts of interested associated with this paper.

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