



MENUS CHANGE[®]

The Business of Healthy, Sustainable, Delicious Food Choices

TOOLKIT RESOURCE: WHAT BUILDS STRONG EVIDENCE ON DIET AND HEALTH?

HOW TO IDENTIFY SCIENCE SUPPORTING OPTIMAL FOOD CHOICES.



Culinary Institute
of America



SCHOOL OF PUBLIC HEALTH
Department of Nutrition

WHAT BUILDS STRONG EVIDENCE ON DIET AND HEALTH?

AS A CULINARY OR FOODSERVICE BUSINESS PROFESSIONAL EVALUATING DIETARY AND MENU GUIDANCE, LOOK FOR THESE MARKERS OF QUALITY IN THE RELEVANT STUDIES CITED AS EVIDENCE.

- 🐾 **Studies in humans with large numbers of participants.** Animals and test tubes differ from humans in many ways and often respond to diets differently. Large numbers of people are needed for reliable statistical conclusions.
- 🐾 **Outcome is health.** For making decisions about diet, it is important to study either disease outcomes like heart disease, diabetes, or cancer, or important health outcomes like quality of life.
- 🐾 **Participants followed over time.** Studies should measure diets of participants before they develop disease and then follow them over time; these are called cohort or prospective studies. Randomized trials in which participants are assigned to different diets and then followed over time would be desirable, but these are relatively few because of the challenges of keeping people on their assigned diet for long periods of time.
- 🐾 **Confirmation by other studies.** A single study should rarely be the basis for making changes; results that are confirmed by other studies are most reliable.
- 🐾 **Supportive evidence from controlled feeding studies with biochemical or physiological outcomes.** In controlled feeding studies, participants are actually fed different diets, usually for a few weeks, and the effects on blood pressure, blood cholesterol fractions, or other biochemical variables are measured. Consistent evidence from large cohort studies with disease outcomes and controlled feeding studies with biomarkers provide confidence that an observed relationship is causal, not just a correlation.
- 🐾 **Systematic reviews, sometimes including meta-analyses, by investigators knowledgeable about the topic.** When many studies have been conducted, a summary of the evidence can be valuable when the studies are selected in an unbiased, systematic manner. A statistical summary of the results, or meta-analysis, can provide an overall picture of the evidence. Because of the complexity of nutrition and human diseases, input of those with deep knowledge in the topic being summarized is needed to avoid misleading conclusions.
- 🐾 **Publication in top-tier journal.** Findings from high-quality, peer-reviewed journals like *New England Medical Journal*, *Lancet*, and *JAMA* are more likely to be reliable than findings in lower-level journals. However, this is not a totally reliable criterion, and confirmatory findings from other journals can be extremely important.



OFF THE RAILS: A CHECKLIST

A USER'S GUIDE TO SOURCES OF CONFUSION ABOUT DIETARY GUIDANCE

Changing food habits, making healthier food choices, and re-imagining menus is hard enough when chefs, operators, and their customers are well informed and have confidence in clearly defined dietary goals and strategies. Unfortunately, too often, a range of factors undermines the strength of that confidence, or throws our thinking off the track of sound science entirely. As you sort through the regular onslaught of news headlines touting the latest research, the release of government reports, and the opinions of diet books, TV commentators, bloggers, other media sources, friends, and colleagues, here is a short checklist of 12 “things to watch out for” in navigating this noisy landscape.

- ✓ **Poorly constructed studies.** These may be small, short-term, retrospective studies (diet is assessed after disease has been diagnosed). They are often found in obscure journals. Prospective studies, in which diet is assessed before disease has been diagnosed, are superior because they avoid effects of disease on what people eat or their recall of diet.
- ✓ **Outlier studies.** Results that are inconsistent with “established” evidence are often small, sometimes in animals or test tubes, and may be in extreme or unrepresentative groups of people (e.g., astronauts).
- ✓ **The train wreck of bad meta-analyses.** Summaries of available evidence are important, but these are often conducted by people not engaged in nutrition research who don't understand its complexities or the definitions of disease.
- ✓ **Research swayed by economic interests.** Individual companies and business associations can influence what research gets funded, and what gets reported. Though not always the case, this can often add spin to what is published.
- ✓ **Government policies, politics, and special-interest lobbying.** Powerful trade groups in agriculture and manufacturing strongly influence federal dietary guidelines.
- ✓ **Defending the status quo when the science has evolved.** Individuals and organizations can be reluctant to change positions, even when they are contradicted by available evidence.
- ✓ **The media opinions of untrained “experts” and diet book writers.** The media is overwhelmed with opinions of self-appointed authorities who have little or no nutrition education or research experience. Science writers often attempt to achieve “balance” using opinions on both sides of a story even when the evidence on one side is much stronger. One should be very skeptical of diet book writers, food bloggers, and celebrities who tout miracle diets or supplements.
- ✓ **“Compared to what?”** Because we unconsciously regulate our caloric intake, a single food or nutrient (e.g., saturated fat) cannot be evaluated in isolation. The effect of increasing or decreasing intake of a food or nutrient will depend in part on what it replaces or is replaced by.
- ✓ **Intentional or unintentional “half-truths.”** Because the replacement food is important, foods can contain both healthful and harmful components, and more is not always better, advice can be partially true but misleading. For example, high intake of refined carbohydrates can be harmful, but replacing this with red meat and saturated fats is not desirable.





- ✓ **Sensationalism distorts news coverage of research.** Scientists and institutional press offices sometimes overstate the importance of their findings, and the media is pressured to attract readers. Thus, “man bites dog” stories capture front-page attention but important, solid findings are often uncovered or buried on other pages. Further, both media writers and editors are generally averse to reporting on new studies that simply reinforce an earlier finding, or reproduce a previously published study, even though that is essential to do. For example, “New Study Finds Nuts Are Still Healthy, Just as the Research Has Already Shown” is an unlikely headline, while “New Study Finds Nuts Reverse Hair Loss” would be a likely headline.
- ✓ **The food environment, education, and health messages: lost in translation.** Many Americans have limited resources, and their daily reality is constant exposure to unhealthy processed foods, overly indulgent portions of restaurant food and sugary beverages, as well as to the aggressive marketing of these foods. Messages about healthier options may often seem irrelevant or simply not heard in that environment. Thus, special attention needs to be given to developing compelling, alternative messages and approaches that can break through and secure affordable, healthy, and delicious dietary patterns for all Americans.
- ✓ **Our brains: making our dietary beliefs fit our worldview.** All of us have absorbed cultural beliefs about foods, and this can make us resistant to new ideas or dietary change. However, over a period of years, changes in diet, both beneficial and harmful, are occurring worldwide, documenting that diets are modifiable, and that specific food choices have important consequences for our health, and the health of the planet.

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