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Position of the American Dietetic Association: Food and nutrition misinformation^{*}

ABSTRACT

It is the position of the American Dietetic Association that food and nutrition misinformation can have harmful effects on the health and economic status of consumers. It is the role of nationally credentialed dietetics professionals to advocate for and promote sound, science-based nutrition information to the public, function as primary nutrition educators to health professionals, and actively counter and correct food and nutrition misinformation.

In recent years, enormous advances have been made in the science of food and nutrition, leading to a fine-tuning of many recommendations about eating healthfully. Consumers have become increasingly aware of the nutrition-health link, increasingly responsible for changing their own diets, and increasingly reliant on nutrition information to do so. Unfortunately, these same conditions also create opportunities for nutrition misinformation to flourish. News reports rarely provide enough context for consumers to interpret the advice given, and preliminary or idiosyncratic findings often attract unmerited and misleading attention.

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Effective nutrition communication must be consumer-focused and presented with sufficient context to allow consumers to weigh the information and determine whether it applies to his or her unique needs. Consistent with its vision that members “are the leading source of food and nutrition services,” the American Dietetic Association (ADA) recognizes its responsibility to help consumers identify food and nutrition misinformation three different ways: First, ADA members need to be leaders in providing consumers with sound, science-based nutrition information and helping them to recognize and avoid misinformation. Second, ADA members need to be primary resources of sound nutrition information for the media and to inform the media when misinformation is presented. Third, ADA members must continue to work diligently with other healthcare practitioners, educators, policy makers, and the food and dietary supplement industry to responsibly address the medical and psychological, physiological, and economic effects of food- and nutrition-related misinformation.

POSITION STATEMENT

It is the position of the American Dietetic Association that food and nutrition misinformation can have harmful effects on the health and economic status of consumers. Nationally credentialed dietetics professionals working in healthcare, academia, public health, media, government, or the food industry are uniquely qualified to 1) advocate for and promote evidence-based nutrition information to the public, 2) function as primary nutrition educators to health professionals, and 3) actively counter and correct food and nutrition misinformation.

TYPES OF NUTRITION MISINFORMATION

Consumer interest in health and nutrition information is highⁱ, but while 43% consumers say they like to hear about new studies, 22% claim to be confused by such reportsⁱⁱ. Unfortunately, it is not always clear how to distinguish nutrition facts from nutrition misinformation. Nutrition facts result from scientific studies that have withstood peer review and which can be replicated. Nutrition misinformation, on the other hand, consists of erroneous, incomplete or misleading nutrition science. It can be formulated with malicious or self-serving intent (to sell products or to gain attention), or it can be innocently or even unknowingly done. The danger of nutrition misinformation is that it may be harmful to health and to general consumer welfare. Misinformation includes food faddism, health fraud, and misdirected claims.

Food fads involve unreasonable or exaggerated beliefs that eating -- or not eating -- specific foods, supplements, or combinations of foods may cure disease, convey special health benefits, or offer quick weight loss. The US Surgeon General's Report on Nutrition and Health defines the promotion of these foods as involving "false or misleading health or therapeutic claims"ⁱⁱⁱ. Although food fads can be exploitative and entrepreneurial, many people who promote these fads may themselves be victims of misinformation and may sincerely believe that they are providing accurate information.

Health fraud shares many of the characteristics of food faddism, except it is always deliberate and done for gain. According to the ADA's *Complete Food and Nutrition Guide*, "Health fraud means promotion for financial gain, a health remedy that

doesn't work—or hasn't yet been proved to work” and which is “. . . promoted to improve health, well being or appearance.”^{iv}

In addition to food faddism and health fraud, misdirected claims include those that wrongly lead consumers to make incorrect inferences or generalizations about the health benefit of a food. These occur, for instance, when a product advertised as “low in carbohydrates” is still very high in calories or when a cereal labeled as “made with whole grain” yet contains only a small amount and is low in vitamins and minerals or high in calories.^v In such cases, these claims misdirect consumers, and lead them to believe the products are more healthy than is actually the case^{vi,vii}. The Federal Trade Commission (FTC) has advocated providing adequate disclosures to correct advertising misinterpretations^{viii} and such disclosures can be important tools in qualifying misleading impressions from current claims^{ix}.

THE HARMFUL EFFECTS ON THE HEALTH AND ECONOMIC STATUS OF CONSUMERS

Given the increasing incidence of nutrition misinformation, it becomes important to understand why it is increasing. In identifying these causes of misinformation, it becomes clear that the costs to consumers and to society go beyond that of simply health and economic welfare.^x

Why is Misinformation on the Rise?

Because of increased awareness of the nutrition-health link, consumers are increasingly taking charge of their self-care^{xi}, and they may be increasingly vulnerable to nutrition misinformation and fraud. While this brings new promise to the role that sound nutrition information can play in one's life, it also makes people more vulnerable to nutrition misinformation and to health and economic considerations. This issue becomes even more critical as the population ages and as they spend increasing amounts of money on weight-loss solutions (\$43 billion in 2004)^{xii}.

In addition to an increased need for nutritional guidance because of aging and obesity, the rapid proliferation of functional foods and dietary supplements has led to a explosion of misinformation because their expansion of these products has outpaced federal regulations. Consumer spending on dietary supplements, natural/organic food, natural personal care products and functional foods totaled \$168 billion in 2004¹⁰. This wide range of herbal, botanical and sports supplements, now comprises over half the dietary supplement industry and has helped sales increase by over 60% to \$13.9 billion.^{xiii} The Dietary Supplement Health Education Act of 1994 established specific guidelines for health claims and the labeling of dietary supplements shifted the burden of proving the accuracy of claims, safety, and quality to the Food and Drug Administration^{xiv}. This shift towards having to prove harm rather than safety can potentially lend an undeserved air of credibility to misinformation or fraud simply because the federal government has not yet discovered or taken action against it.

The Short-term and Long-term Costs of Nutrition Misinformation

The health consequences of misinterpreting information by the media, consumers, and the food industry has both short-term and long-term costs. In the short term, physical harm can occur if there are unknown drug-nutrient interactions or toxic components in the foods. Such harm can also occur if the use of these products leads one to delay or to avoid seeking legitimate medical care, prevents one from continuing essential treatment, or interferes with sound nutrition education and practices. Economic harm can occur when purported remedies, treatments, and cures fail to work and when products are needlessly purchased. Because of the burden of proof now on the federal government, there are fewer roadblocks to developing costly but useless products. The true cost of health fraud is likely in the tens of billions of dollars, especially when considering the cost of purchasing products that may do no harm but also provide no benefit, whether purported or not.

In addition to these immediate short-term costs of nutrition misinformation, there are more insidious long-term psychological issues of trust and self-efficacy that can occur. Misinformation can lead consumers to lose faith in traditional sources of nutrition information and to provide less attention and credence to the results of new findings. This may even erode their perception of their ability to confidently manage an empowered nutrition-health lifestyle. When misinformation is common, it will become much more difficult to gain public trust for future initiatives to improve public health^{xv}.

SOURCES OF NUTRITION MISINFORMATION

Consumers receive nutrition information from a variety of sources. According to the ADA's *Nutrition and You: Trends 2002* survey² and to newer data from the Food Marketing Institute^{xvi}, consumers say the media is their most frequently used source of nutrition information, with magazines (47%), television (34%), books (29%), and newspapers (28%) being of key importance. Two other important categories of health information were the Internet (21%) and a general category which included information from product labels and from friends and family (18%). It is interesting, yet disheartening that two of the most capable sources of nutrition information, were two of the least commonly used: physicians provided 31% of the information and dieticians provided only 13%¹⁴. The general impact of the media, the Internet, the food industry, and friends and family will be discussed below.

The Misinterpretation of Scientific Studies in the Media

Scientific progress alone does not prevent or eliminate nutrition misinformation. The popular mass media can capitalize on preliminary research data in an effort to enhance audience and readership ratings. In addition, some marketers also quickly turn legitimate research findings into exaggerated, one-sided stories. Therefore, it becomes important that the universities and research groups that release research results to the media use particular caution when presenting their findings either in print or in interviews.

The International Food Information Council (IFIC) indicated that the most pervasive cause of misinformation among scientific reporting was in not providing sufficient context for consumers to understand the findings^{xvii}. For instance, when a food

or dietary choice was linked to a specific harm or benefit, only 13% of the stories mentioned how much to eat, and only 21% cited the reference. Many simply made a vague reference to “studies” or to “research.”

A recent content analysis of selected nutrition-related news stories from 2000-2005^{xviii} showed that four common forms of inaccuracy include the following, 1) mistaking correlation for causation; 2) generalizing to a population on which the study was not conducted; 3) exaggerating the size of an effect; and 4) using a single link in a chain of events to make predictions about downstream events. The latter might include the strained inference that red wine fights cancer because red wine lowers stress, lower stress reduces toxins in the blood, reduced toxins in the blood may reduce the risk of cancer.

News reports on food and nutrition rarely provide enough context for consumers to interpret the advice given. They often fail to note how much more (or less) of a food should be eaten, how often it should be eaten, or to whom the advice applies^{xix}. Both the news media and researchers must share responsibility for reporting accurate, balanced, and complete information to the public.

Misinformation on the Internet

The Internet is a burgeoning source of health and nutrition information. Forty-six percent of those participating in a 2005 Food Marketing Institute (FMI) survey said they used the Internet on a regular basis. Although people are increasingly relying on the Internet for nutrition information,¹⁰ consumers must be reminded that the accuracy of information appearing on Web sites is not governed by any regulatory agency. As a

result, sites featuring sound science-based content co-exist with sites containing questionable, inaccurate or alarming information promoted by individuals and groups espousing unscientific views. Chat rooms, blogs, list-serves, and unsupervised electronic bulletin boards can provide a forum for the exchange of inaccurate advice about nutrition and health. This popularization of electronic interaction has resulted in rapid and widespread dissemination of nutrition misinformation and “urban health myths,” such as the notion that Costa Rican bananas carry flesh-eating bacteria and that the fat substitute Olestra leads to lupus.

Several health organizations are addressing the proliferation of misinformation on the Internet. For example, the American Medical Association has issued guidelines for medical and health information sites on the Internet^{xx}. The Health On the Net Foundation sets ethical standards for Web site developers and strives to guide medical practitioners and consumers to useful and reliable online medical and health information. Figure 1 indicates 10 samples of Web sites that contain credible health-related information.

FIG 1: Ten Web-based Sources of Nutritional Information

American Dietetic Association	www.eatright.org
American Society for Nutritional Science	www.nutrition.org
Food and Nutrition Information Center	www.nal.usda.gov/fnic/
International Food Information Council	www.ific.org
Mayo Clinic Nutrition Center	www.mayohealth.org
Healthy Eating Information	www.healthyeating.org
Tufts University Nutrition Navigator	www.navigator.tufts.edu
Cornell University Nutrition Works	www.nutritionworks.cornell.edu
Illinois Nutrition Education	www.kidseatwell.edu

Misinformation from Industry

Nutrition misinformation is often disseminated by multilevel marketing companies that promote unproven products such as dietary supplements or weight loss products. These companies claim that their products can prevent or cure disease. Product literature may contain illegal therapeutic claims or product distributors may supply such information through anecdotes and independently published literature.

Advertising and testimonials also may spread misinformation. People tend to believe information that is reinforced by sports figures, celebrities, teachers, coaches, ministers, legislators, healthcare workers, media commentators, health professionals, and other persons they respect. When such public role models give scientifically unfounded testimonials about the benefits of specific nutritional practices, the effects can be far-reaching and potentially harmful. Thus, these role models should carefully examine the accuracy and reliability of any nutrition information they disseminate and sharpen their skills at making appropriate inferences from scientific reports. When they are uncertain about the scientific merit of nutrition products they are asked to endorse, role models should seek the advice of a dietetics professional. Dietetics professionals must be aware of the various sources and forms of nutrition misinformation and must be prepared to counter them with science-based information.

Misinformation from Friends, Family, and Culture

Cultural myths can lead some to believe that “Bee pollen boosts energy,” “Fish is brain food,” or “Eating grapefruit burns body fat.” Although some food beliefs that are

rooted in traditional cultures or religions are unsupported by scientific evidence, they can be respected as long as they do not result in possible harm and economic exploitation.

An example of such a cultural belief is the concept that Latinos and Asians have that “hot” foods (some grains, oils, and meats) and “cold” foods (citrus fruits and dairy foods) have different health properties that make them appropriate for different occasions. Despite a surprisingly high level of cross-cultural agreement as to whether a food is hot or cold, there are radically different cultural recommendations about which foods are most appropriate to eat under which circumstances. For instance, pregnancy is considered a “hot” condition during which many Latinos typically avoid “hot” foods, but the Chinese believe that pregnancy is a “cold” condition during which the expectant mother should avoid “cold” foods to keep herself in balance for good health.

COMMUNICATING EVIDENCE-BASED FOOD AND NUTRITION INFORMATION

The impact of nutrition communication on promoting healthful lifestyles depends on how effectively nutrition messages are communicated to consumers and how well consumers discern science-based advice^{xxi}. Nutrition information must be presented with sufficient context to allow a consumer to weigh the information and determine whether it applies to his or her unique needs^{xxii,xxiii}. For each of the key groups in the communication channel, strategies and tips are provided to help them decrease nutrition misinformation and increase the accuracy of what they communicate.

The Role of Dietetics Professionals

Qualified dietetics professionals and nutrition educators are prepared to deliver sound advice and news of scientific advances in nutrition. These professionals should be encouraged to take an active role in disseminating accurate nutrition and health information through the media and consumer-targeted books.

Initiatives such as the ADA's national media spokesperson program have helped in relaying accurate food and nutrition information to both local and national audiences and have helped position Registered Dietitians as the experts. Yet, a competitive field of celebrities, fitness experts, psychologists and others without nutrition credentials are frequent sources for nutrition-related interviews^{xxiv}. Dietetics professionals must be trained in critical research skills, as they have a responsibility to clarify and demystify consumer-targeted nutrition messages. Thus they can help interpret emerging research for media and consumers, and encourage consumers to look to credentialed dietetics professionals as nutrition experts. Figure 2 provides some strategies for dietetics professionals to use in interpreting and communicating nutrition information to the public

22, xxv .

FIG. 2: Strategies for Communicating Accurate Nutrition Information
(Adopted from Short 1994 and The Dietary Guidelines Alliance 1996)

- Keep tips consistent, positive, short, and simple.
- Avoid speaking in nutrition buzzwords.
- React continually to misinformation, but avoid being an alarmist. If you constantly proclaim danger about food, people will soon believe that

nothing is really dangerous.

- Avoid debates about inconclusive subjects
- Stay inside your area of expertise.
- Emphasize improvement, not perfection.
- Make the consumer benefit clear.
- Be specific; describe an action (where appropriate).
- Don't perpetuate the "good foods/bad foods" myth. Steer clear of labeling foods as "good," "bad," or "can't have." Show them how all foods fit into a healthy lifestyle.
- Don't over promise; show realistic outcomes.
- Include examples of foods and activities that reflect the lifestyle, preferences, and culture of your audience.
- Incorporate timesaving tips whenever possible.

The ADA provides support for members through its Knowledge Center, a leading source of scientifically based, objective food and nutrition information for dietetics professionals, the media, other health care providers, and researchers. Practical, positive nutrition information is provided to professionals and consumers by the Knowledge Center through recorded nutrition messages (1-800-366-1655), National Nutrition Month©, publications, and ADA's Web site (<http://www.eatright.org>) which offers a gateway to government agencies and many allied professional organizations that focus on nutrition and health.

The Role of Allied Health Professionals

Consistent nutrition guidance and messages from all sources reduce consumer confusion and reinforce the credibility of science-based nutrition information. For this

reason, allied health professionals are urged to collaborate with qualified dietetics experts to provide consumer-focused health education, to train medical and health personnel, and to implement community nutrition education outreach. Physicians, nurse practitioners, and other healthcare providers need to seek the knowledge, skills, and services of dietetics professionals.

Strategic partnerships between allied health professionals and related scientific and professional organizations and the nutrition community can help ensure the delivery of consistent nutrition and health messages to consumers. For example, the Food and Nutrition Science Alliance (FANSA) is a partnership of four professional scientific societies whose members have joined forces to speak with one voice on food and nutrition science issues. One collaboration resulted in the development of the “Ten Red Flags of Junk Science” (see Figure 3).

FIG 3: 10 Red Flags of Junk Science

(Adopted from Duyff 2002)

1. Recommendations that promise a quick fix.
2. Dire warnings of danger from a single product or regimen.
3. Claims that sound too good to be true.
4. Simplistic conclusions drawn from a complex study.
5. Recommendations based on a single study.
6. Dramatic statements that are refuted by reputable scientific organizations.
7. Lists of “good” and “bad” foods.
8. Recommendations made to help sell a product.
9. Recommendations based on studies published without peer review.
10. Recommendations from studies that ignore individual or group differences.

The Role of Government/Regulatory Bodies

Government agencies play regulatory and disseminating roles with nutrition information. Through the FDA's labeling programs, the government regulates nutrition information and health claims on food and dietary supplement labels. Federal agencies provide science-based nutrition, food, and health guidance (such as the Dietary Guidelines for Americans and My Pyramid) as well as sound nutrition and food safety information through publications and Web sites. Public-private partnerships, such as the *It's All About You*TM campaign, also communicate positive, simple, and consistent messages to help consumers achieve healthful, active lifestyles.

Many federal, state, and local government agencies employ dietetics professionals for their expertise in nutrition, food science, and nutrition education. Qualified dietetics professionals work in or collaborate with government bodies to help educate the media and the public. Nutrition experts also have a responsibility to share their professional expertise in the shaping of the public policy that relates to nutrition education and misinformation.

The Role of Media and Journalists

Consumers report the media is their most frequently used source of nutrition information¹⁴. Collaboration between dietetics professionals and media professionals is key to consumers receiving sound science-based information about nutrition and food safety issues. Through these joint efforts, the dissemination of nutrition misinformation can be minimized or avoided. Additionally, public understanding of emerging nutrition

science can be improved if journalistic reporting is accurate and balanced, offers a healthy skepticism, provides practical consumer advice, and presents reports that reflect sound scientific principles²¹. Part of addressing this is in the way nutrition studies are interpreted and in the way they are reported. Figure 4 provides insights on the types of questions that journalists can use when interpreting a new study, and may be used in the context of Figure 2, which provides tips on how such studies can then be reported to have the desired impact.

FIG. 4: Questions to Ask About a Research Report

(Adopted from Wansink 2006 and Harper 1988)

- Was the research done by a credible institution and by qualified researchers?
- Is this a preliminary study? Have other studies reached the same conclusions?
- Can the results be generalized to a larger population?
- Was the research population large enough? Was the study long enough?
- Who paid for the study? Might that affect the findings? Is the science valid despite the funding source?
- Was the report reviewed by peers?
- Does the report avoid absolutes, such as “proves” or “causes”?
- Does the report reflect appropriate context; for example, how the research fits into a broader picture of scientific evidence and consumer lifestyles?
- Do the results apply to a certain group of people? Do they apply to someone your age and gender and with your health condition?

The Role of Researchers

Researchers must realize that they must put their own findings into context by explaining the connection with other studies that may have shown different outcomes. Researchers can also lay the groundwork for ensuring that their findings are presented accurately by underscoring the difference between correlation and causation, by noting the context of the results and what size dose would be optimal for what type of effect. They should also emphasize the limitations of the findings, how they relate to contrary findings, and the populations with which they would be most effective or least effective.

Knowing the basic biases of journalists and the short-cuts they are likely to take in reporting research results can be useful for researchers in their interviews. Extra effort can be made to communicate findings in a way that does not lose the context of the findings and the implications for consumers. The guidelines in Figure 5 can be a helpful summary checklist in how to provide reporters with the information they should have.

FIG 5: Research Communication Tips for Researchers

- Put the findings of the study into context
- Communicate findings in simple language
- Discuss limitations or contradictory findings from other studies
- Disclose all key information about the study's findings
- State that scientific research is evolutionary, not revolutionary

The Role of the Food Industry

The American food industry can be the nutrition professional's ally when it comes to providing complete and reliable nutrition information to the public. The food industry can also help consumers understand emerging nutrition issues by providing accurate information and feedback. Many food companies employ dietetics professionals for their expertise in nutrition issues, communications, and consumer affairs. Qualified dietetics professionals need to continue to work with the food industry to help shape the public's food choices, knowledge of nutrition and health, and ability to think more critically about food and nutrition issues. Partnerships between the food industry and health-focused

associations, such as the *Home Food Safety: It's In Your Hands™* campaign, also communicate positive, simple, and consistent health messages for consumers.

Industry trade groups and organizations can provide reputable, evidence-based nutrition information to the public. Many of these more influential food industry Web sites can be accessed through many of the links provided by the Web sites in Figure 1.

The Role of Consumers

Consumers need to recognize qualified dietetics professionals as credible resources for nutrition information and for helping consumers make sound decisions that match their personal needs. Knowing how to access credible information through ADA's Web site, or other Web sites is one important skill. Figure 6 refers to questions that consumers, as well as qualified dietetics professionals, need to ask about research reports. In general, consumers need to learn how to recognize science-based nutrition and health advice, to critically examine what they read or hear, and to distinguish fact from fiction. When visiting less established Web sites that offer nutrition-related information the advice provided in Figure 6 can help scrutinize their content.

FIG 6: Web site Credibility check-up

- What is the background, credibility and affiliation of the researchers or sources?
- Does the Web site identify the publisher and any sponsors?
- Is there an editorial screening process?
- Is the information appropriately up-to-date?
- Does the information include credible references such as referred journals?
- Is the information balanced?

- Is the Web site designed to sell you something?
- Are there links to credible Web sites or article databases?

Many consumers may not even be aware that misinformation exists. To avoid being unknowingly influenced by misinformation, consumers need to scrutinize the claims used to sell a product and the qualifications of the authors and presenters, of nutrition-related advice. Additional information can be found by contacting local hospitals or universities for additional public resources, or by contacting the American Dietetic Association. The ADA's Consumer Nutrition Hotline (1-800-366-1655) and Web site (<http://www.eatright.org>) not only offer consumers a referral service to registered dietitians, but also provide sound nutrition information on timely issues.

SUMMARY

Food and nutrition misinformation can be a serious barrier to public health. Misinformed consumers may not only have a false sense of security about their health and well-being, but they may also delay appropriate, effective healthcare or replace it with products or behaviors that may be harmful to their health. Misinformation also may also result in unnecessary financial expenditure.

The ADA encourages its members take a proactive role in providing consumers with objective, science-based nutrition information and in helping them recognize and avoid following misinformation. Qualified dietetics professionals can positively shape the nutrition choices of Americans in many ways:

- Collaborate with the media to communicate science-based nutrition information to consumers and to counter misinformation.
- Direct reporters and consumers to responsible sources of nutrition information.
- Write letters to the editors of newspapers and magazines and the producers of electronic media to offer sound information that counters inaccurate and biased articles.
- Call and express professional concern to radio and television programs that interview nutrition extremists and other sources of misinformation.
- Encourage researchers to present their results with a balanced viewpoint and to provide an appropriate context for the study.
- Collaborate with the food industry to provide reliable nutrition information.
- Cooperate with other health practitioners to expose emerging misinformation, misbeliefs, frauds, and unmerited health halos before they are widely accepted.

The challenge of addressing food and nutrition misinformation is long-standing and persistent. Nationally credentialed dietetics professional, in partnership with other members of the healthcare team, educators, and representatives of the food industry, can be a forceful voice against food and nutrition misinformation while positively shaping food choices.

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