

# Going Behind the Headlines: When Food and Facts Collide

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“Going Behind the Headlines” is a self-study module produced by the Calorie Control Council, an accredited provider of continuing professional education (CPE) for dietetic professionals by the Committee on Dietetic Registration. It provides 1.5 hours of level 1 CPE credit for dietetic professionals. Directions for obtaining CPE credit are provided at the end of the module.

## CPE Performance Competencies and Indicators

- 1.1 - Identifies with and adheres to the code of ethics for the profession.
- 2.1 - Utilizes appropriate communication methods and skills to meet the needs of various audiences.
- 4.2 - Reflects, integrates and evaluates using critical thinking when faced with problems, issues and challenges.
- 5.3 - Demonstrates ethical and professional behavior when using technology.

The competencies and performance indicators supported by this module include:

1.1 - Identifies with and adheres to the code of ethics for the profession.

1.1.2 Recognizes and manages conflicts of interest.

1.1.3 Understands the impact of personal values and beliefs on practice.

2.1 - Utilizes appropriate communication methods and skills to meet the needs of various audiences.

2.1.2 Identifies barriers to effective communication.

2.1.3 Tailors message to meet the needs of the target audience.

2.1.4 Uses a variety of media to deliver information.

2.1.7 Delivers information and opinions in a respectful and professional manner.

2.1.8 Delivers accurate and credible messaging.

4.2 - Reflects, integrates and evaluates using critical thinking when faced with problems, issues and challenges.

4.2.2 Reflects on own values, beliefs and biases.

5.3 - Demonstrates ethical and professional behavior when using technology.

5.3.5 Demonstrates professional behaviors and boundaries when using social media platforms.

Suggested learning need codes for “Going Behind the Headlines: When Food and Facts Collide” are:

1040 Cultural sensitivity

1050 Ethics

1070 Leadership, critical and strategic thinking

1090 Media skills

1130 Verbal communication skills, communication

## Mary Lee Chin



Mary Lee Chin MS, RD, provides food and nutrition consultation, speaking on some of the most provocative food topics of today, including genetically modified foods, environmental and sustainability issues, and low calorie sweeteners. She works with commodity food groups and food industry on nutrition education initiatives. In the interest of full disclosure: Mary Lee consults with companies including Ajinomoto, Monsanto and National Cattleman's Beef Association. Aware that many divisive and emotional food issues are sparking fierce debate, she advocates moving from polarizing rhetoric to open and professional courteous discourse. Mary Lee speaks to businesses, non-profits and health professionals, and has served as an expert witness on food-related issues in federal and legislative hearings. Mary Lee has provided interviews with local and national media, and formerly held a six-year term as a national spokesperson for the Academy of Nutrition and Dietetics.

# Outline

- How food and nutrition headlines are created and misconstrued
  - Three case studies
- Social media driving the food conversation
- Disconnect between consumers, science, and food industry
- Moving from science education toward consumer engagement
- Persuasive communications

How food and nutrition headlines are created and misconstrued

-Three case studies

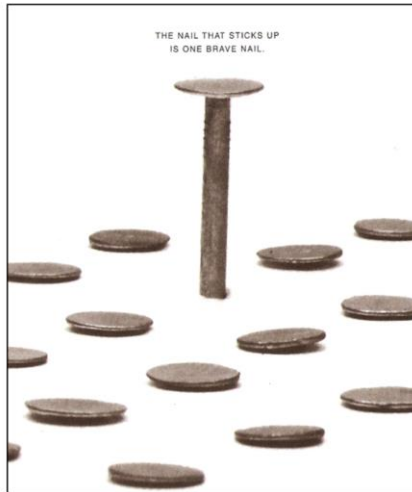
Social media driving the food conversation

Disconnect between consumers, science, and food industry

Moving from science education toward consumer engagement

Persuasive communications

## The nail that sticks up, gets hammered down



That nail that sticks up is one brave nail



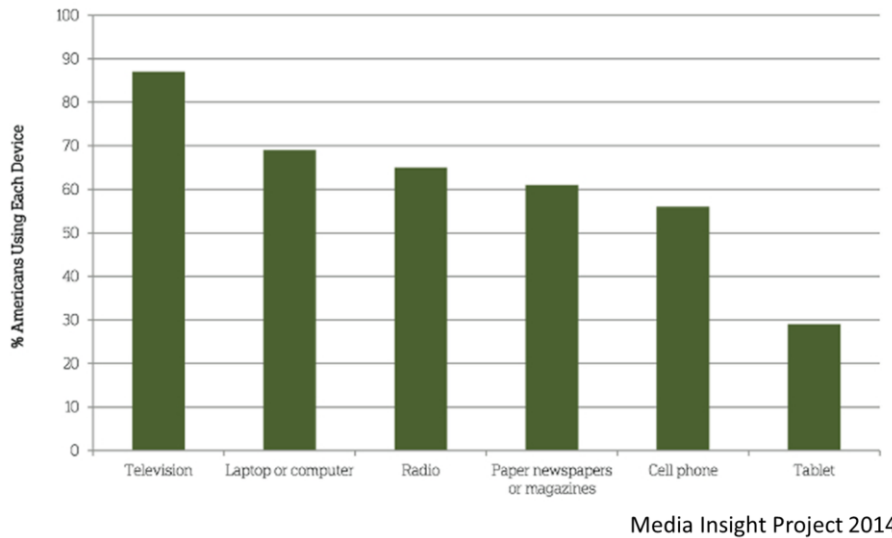
Nutrition educators must reframe today's food conversations to make inroads against sensational headline claims. How can we as dietitians, be a trusted source in today's increasingly contentious dialogue about food, health, and nutrition? Can we tackle the challenge of providing sound, science-based, and believable information to an interconnected, social media-driven world, where consumers are taking an active and activist interest in determining the food environment?

There is a saying: "The nail that sticks up gets hammered down." If you stand up on a contentious or unpopular food issue, you are going to have people who take shots at you. You will be loudly criticized in personal ways. It takes courage to be that nail that sticks up and is noticed. That is one brave nail.

Activists who are dismissive of the weight of the evidence and ignore credible scientists foster distrust of safe technology and innovations that can improve health, nutrition, and environmental sustainability. It is the consumers in this environment who are not scientists, but genuinely want accurate information to help them make good decisions for themselves and their families, who lose out. Therefore, it is essential that we go behind the headlines that inform so much of the food environment of today, and that we stand up and effectively speak out on behalf of sound science for the benefit of consumers.

**HOW FOOD AND NUTRITION  
HEADLINES ARE CREATED AND  
MISCONSTRUED**

## How Americans choose to get news



The majority of Americans across generations now combine a mix of sources, devices, and technologies to get their news. They use multiple platforms to access news on a typical day, including local and national network and cable TV channels, radio, newspapers, websites, phone apps, and social media platforms. (Purcell 2010; Media Insight 2015) It is easy to understand why news outlets must compete for our attention.

With the need to compete for viewers, nutrition study results are often “interpreted” in creative ways to generate more media coverage. Sensationalized nutrition headlines are rampant, leaving consumers confused and overwhelmed. (Sizer 2012)

In addition, many headlines and media stories about food, health, and nutrition risks or benefits contain substantial omissions, or present oversimplified, distorted, or inaccurate information. As a result, listeners and readers of these sound-bite-science reports are missing information about the studies themselves and are left with misconstrued conclusions. (Covello 2001)

Where do erroneous headlines come from? Who is responsible?

## Spinning the Health Headline



**Spin occurs at multiple levels**  
**Research community**  
**Self-styled experts**  
**Industry promotion**  
**Media platforms**

In today's landscape, consumers are overloaded with information on food and nutrition. For every scientific study advocating "do this," or "don't do that," there are an equal number trumpeting just the opposite. Many of these studies have become "white noise," with the most provocative ones grabbing headlines in the media. In an ideal world, journal articles and their press releases, experts, food industry, and news stories would all accurately reflect the results of health, food, and nutrition research.

Results of scientific trials can be distorted by the use of "spin." Spin is defined as emphasizing beneficial outcomes of a trial or inadequately reporting harm. While often the media is quickly fingered as the spin culprit, spin can occur at all levels, from original scientific articles, to promotion by self-styled experts or food industry, to misinterpretation by the media.



# Spin by the Research Community



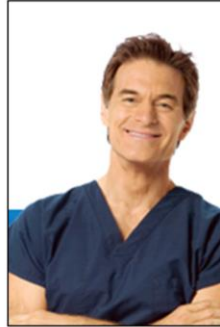
**Spin is found in medical research news!**

“Spin” frequently comes from interpretation of trial results distorted by authors of published reports, with the reporting of findings inconsistent with the results. (Boutron 2010) Researchers may distort findings in their conclusions and accompanying abstracts, which may then be turned into inaccurate and provocative press releases. The press release may be used to generate news stories by journalists who, in general, don’t take the time to read and investigate the original research.

Yavchitz et al. (2012) identified 70 press releases and their related scientific articles over a 4-month period that described randomized controlled trials (RCTs) - the gold standard in research trials. Of these, 41 had associated news items. The RCT scientific articles were interpreted independently from three sources: (1) full text of the scientific article, (2) the press release, and (3) the news items. Comparisons of the three sources found “spin” identified in 41% of the abstracts, 46% of the press releases, and in 51% of the news items, often touting a beneficial effect that was not supported by the study. “Spin” found in press releases, created by a press officer, closely correlated with abstract conclusions written by the RCT researchers. This spin distortion can give inaccurate and unrealistic expectations of the study topic to reporters and consumers. Yavchitz emphasized the important roles that editors and reviewers of scientific journals must play to “ensure that the conclusions reported are an appropriate reflection of the trial findings and do not over interpret or misinterpret the results.” (Yavchitz 2012).

Additionally, we as dietitians must evaluate, with a critical eye, the validity the research.

## Spin by Self-Styled Experts... Who are these experts?



- Expertise in one area does not confer expertise in another
- Celebrity does not equal expertise

Be wary of a scientist or health professional with an impressive resume who may be an expert in an unrelated field. Even more importantly, one who makes claims inconsistent with the current body of evidence on a topic should raise red flags among their peers. The (in)famous Dr. Oz was a nationally known cardiothoracic surgeon before he became a television phenomenon in health and nutrition. Recently Dr. Oz came under fire from ten prominent critics who signed a letter to Columbia University calling for his dismissal from the Columbia surgery faculty over alleged quack science. (Izadi 2015) And in June 2014, Dr. Oz was grilled by a Senate panel for his endorsement of “miracle” weight loss products that didn’t work. (Deng 2014)

Celebrity advocacy appears to appeal to both the media and consumers. The science is not always what “sells.”

## Spin by Industry

- Biased to sell products or services
- Industry-sponsored information may be scientifically accurate but present only one perspective.
- Products may make improbable health claims
- Marketing of less nutritious foods and snacks are directed toward children

Industry creates spin to sell its products or services. Industry-sponsored information may be scientifically accurate but present only one or a limited perspective. As dietitians, we frequently receive information on the newest research study about the nutritional and health benefits of a particular product or commodity. Results of the one study sent out as a press release may be impressive to the public, but as health professionals we must place the information in context with the weight of the evidence.

Products may make improbable health claims, with an “eat this” health message emblazoned on the label or in advertisements. And less nutritious foods and snacks may be equated with fun and marketed to children through multiple communications platforms, including television advertising, in-school marketing, product placements, kids clubs, internet interactive marketing, licensed characters, branded toys, and product tie-ins. (CDC 2012)

## Spin by the Media: True, False, or Somewhere In Between?

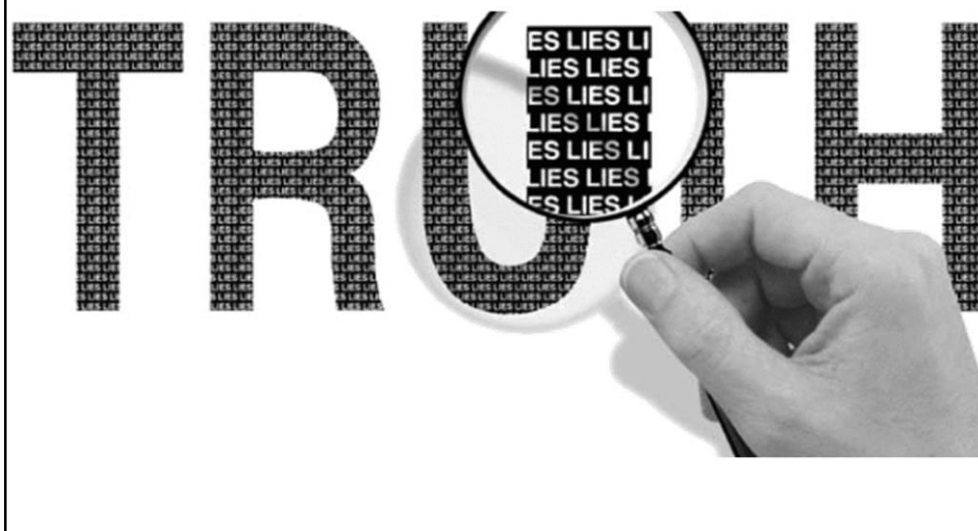
Headlines are often sensational:

- Butter is GOOD for you - and margarine is chemical gunk
  - Complicated stories dumbed down
  - Critical examples omitted
- Vaccine Causes Autism
  - Celebrity activism impact

There are difficulties in getting fair and balanced stories on medical science into the mainstream media. Headlines— true or not— are designed to draw the reader in. Details are often “dumbed down.” Space is always at a premium— sometimes an important fact or crucial examples are cut out simply to make the article fit the space.

The pressure to present “balance” can distort the story. Equal weight can be given to two sides of an argument when they are not scientifically equivalent at all. The reporter may be doing his due diligence by seeking another source – but risks pushing a straightforward scientific story off-center by seeking input from sources not best qualified to do so. (Quagliani 2012) Add a celebrity to the mix, such as Jenny McCarthy disputing vaccinations, and the story becomes larger than life. (Carey 2015)

# Standards for Truth in Journalism



In *Elements of Journalism*, ten elements to good journalism are identified. Among them is, “Journalism’s first obligation is to the truth,” seen as essential to a journalist’s work. Another element refers to the importance of “a discipline of verification.” (Kovach 2014) Never have more people and organizations been engaged in fact checking and verification. In-house and outsourced journalistic operations are focused on vetting traditional and social media content. (Silverman 2012)

Many have stated that social media comments and postings, and websites should meet the same standards of fairness, accuracy, and attribution applied to on-air and print journalism. (Hohmann 2011; Tompkins 2015) Health on the Net (HON), developed by the United Nations, is a guide for internet users to access reliable, understandable, and trustworthy sources of medical and health information. They also set ethical standards for website developers and certify trustworthy websites. (HON 2013)

Journalists in traditional and social media are guided ethically to aspire to truth and accuracy. But especially in the wild world of self-styled journalists and experts on social media, there are no standardized routines or guarantees that they will do so.

## A Tasty Case Study: Chocolate and Weight Loss

- Real study, but rigged to increase chances of statistically significant findings
- Conclusion: Eating dark chocolate leads to more weight loss
- Published in a fee-charging journal
- Public relations circus
- Bad science zinged scientists, journals, reporters, and editors alike



In the spring of 2015, the *International Archives of Medicine* published an exciting new study. Research at Germany's Institute of Diet and Health showed that people who ate dark chocolate while dieting lost more weight. The study immediately rocketed around the internet and beyond, making news in more than 20 countries, several magazines, and in half a dozen languages.

In reality, the Institute of Diet and Health is just a website. Johannes Bohannon, health researcher and lead author of the study, is actually a science journalist. The study was an actual clinical trial. However, Bohannon was part of a team of journalists and one doctor who wanted to “demonstrate just how easy it is to turn bad science into the big headlines behind diet fads.”

The study had a small number of subjects, and multiple diverse outcomes were measured, making it virtually guaranteed to show some small statistical difference. The results were submitted to a number of fee-charging open access journals. While these journals claim to review studies rigorously, in fact no reviews were done on this paper by the publishing journal. As for the news media, the study was widely published. Many published without checking with the author, doing any research on the Institute of Diet and Health, or verifying the results. It was only after Bohannon wrote about the sting online that the hoax was revealed. (Bohannon 2015).

The buzz that followed the publication of this study is a classic example of how dicey science can be combined with sloppy reporting to create a ‘false narrative’—a storyline with a strong bias that is compelling, but wrong. It's how a simplistic but appealing idea picked up by the media, can get rooted in the public consciousness. Sensationalism appears to appeal to both the media and consumers.

## Case Study: SALSA, Diet Soda, Waistlines



### The Headlines:

- *How Drinking Diet Soda Can Increase Belly Fat*  
- Health Day News
- *Diet Soda Could be Linked to Bulging Bellies in Older Adults*  
- NY Daily News
- *Bad news, diet soda drinkers: Your favorite beverage may lead to more belly fat as you age*  
- Washington Post

In 2015, hundreds of headlines declared diet soda as a culprit in expanding waistlines. The headlines based on the San Antonio Longitudinal Study of Aging (SALSA) study read:

- “How drinking diet soda can increase belly fat” (Health Day News)
- “Diet soda could be linked to bulging bellies in older adults” (NY Daily News)
- “Bad news, diet soda drinkers: Your favorite beverages may lead to more belly fat as you age” (Washington Post)

But the headlines did not reflect the full context of the source study. (Fowler 2015) Many news stories provided a balance of information, including pointing out limitations of the study. But a quick look of just the headline left consumers with the entirely different impression that drinking diet soda will cause increased abdominal girth.

## Case Study: SALSA Context



### Limitations of the study conclusions

- Results reflect correlations, but author recommendations to public suggest cause and effect
- Contrasts RCT data suggesting LCS help in weight management
- Only 50% original subjects completed study
- Those 65 and older already at risk for weight gain
- Failure to adjust for caloric intake
- Self-reported intake data
- Data more than 10 years old

SALSA found an association between diet soda consumption and increasing waistlines among adults 65 and older (n=749 study start, n= 375 study end). Beginning in the 1990's, researchers collected data for 9.4 years. They found that the waistlines of people who never drank diet sodas increased by 0.8 inches for the length of the study. By comparison, daily and occasional diet soda drinkers gained nearly three times as much in waist circumference as non-drinkers, and those who consumed diet drinks every day gained more than three inches. The lead author postulated several mechanisms for diet drinks causing the girth increase. Although the abstract correctly stated that the study only measured a correlation, not a cause and effect, the authors recommended that people give up their diet soda due to the uncertainty of the diet soda effect. (Fowler 2015) While the findings could stimulate further research in beverages and obesity relationships, it was premature to call for public health recommendations to give up diet soda, due to the study's limitations. (Science 2015)

Looking beyond the headlines and the authors' conclusions, many pointed out limitations of the study and relevant context from the larger body of evidence:

- In a review of the evidence on this topic from randomized controlled trials (RCTs), the use of LCS reduced body weight, BMI, fat mass, and waist circumference, while in prospective cohort studies, LCS were associated with a slightly greater BMI, but not with weight or fat mass. (Miller 2014)
- The 65 and older population is already at risk of weight gain and cardiovascular disease. (American Beverage Association 2015)
- Researchers failed to adjust for total calorie intake, which would impact results. (Calorie Control Council 2015)
- Study subjects were asked to self-report what they consumed, introducing recall bias. The data were more than 10 years old at the time of publication. Findings may be limited in their relevance to consumers of today with the changes in low-calorie sweetener availability and consumption. (International Food Information Council 2015)



## Case Study: Organic Agriculture

### Organic Beliefs

- More nutritious
- Better for environment
- No pesticides used



Numerous ideas abound and have become fixed in consumers' beliefs that there is an innate superiority of organic products related to both human health and environmental sustainability. Blessed with a "health halo," organic products are available in nearly 20,000 natural food stores and nearly three out of four conventional grocery stores, accounting for over 4% of total U.S. food sales. (USDA 2014 Organic)

Many beliefs regarding organic agriculture are unfounded and unsupported by research, however. Despite the evidence, consumers are resistant to the scientific evidence and are disinclined to change these closely held beliefs. A quick scan of the internet shows a myriad of unfounded ideas about organic food and organic agriculture, such as:

- Organically grown foods are more nutritious.
- Organic agriculture is better for the environment.
- Organic agriculture does not use pesticides.

# Case Study: Organic Agriculture Context

## Organic Realities:

- No nutritional advantage
- Less productive than conventional farming
- Increased importation with increased carbon footprint, and fraudulent certification
- Organic pesticides are used, but not proven any safer for health or environment

The evidence paints a different picture of “organic realities” versus beliefs:

- The nutritional value of foods is variable and influenced strongly by many factors, including seed varieties, growing season variations, weather, ripeness at time of harvest, and food handling at all stages from harvest to dinner table. Numerous well-done studies and meta-analyses show that there is no nutritional advantage of organic over conventionally grown produce. (Bourn 2002; Dangour 2009; Smith-Spangler 2012)
- Organic farming is land-inefficient, requiring more land to yield the same amount of food. There are differences among crops, but the overall yield difference is around 25%. (Seufert 2012)
- Organic food may be locally grown, but is also increasingly imported from foreign countries because U. S. farmers cannot keep up with demand. (Laux 2013; Brat 2015) These changes mean that the carbon footprint of organic agriculture may increase. (Knudson 2011) Additionally, many of these source countries have loose regulatory enforcement, resulting in fraudulent certification of the organic label. (USDA Agricultural Marketing Service 2014)
- Organic farming, just like other forms of agriculture, uses a wide variety of pesticides and fungicides to prevent crop destruction, but they must be derived from natural sources, not synthetically manufactured. Until recently, organic pesticides were poorly studied because it was assumed that since they were natural they posed little risk. A landmark 1990 study concluded that natural and synthetic chemicals are equally likely to be positive in animal cancer tests. (Ames 1990) A study challenged the “natural is safer” assumption found that organic pesticides can have a higher negative environmental impact. (Bahlai 2010) Still, the U.S. Department of Agriculture says pesticide residues of U.S. foods are not a safety issue, as overall pesticide residues are at levels well below the tolerances set by the U.S. Environmental Protection Agency. (USDA Pesticide 2014)

Further adding to confusion between the science and assumptions about organic diet benefits: In 2012 the American Academy of Pediatrics (AAP) weighed in on the question of whether children benefit from an organic diet. In a report published in Pediatrics, the Academy recognized that an organic diet reduced exposure to pesticides and may reduce diseases associated with antibiotic resistance, but also stated, “In the long term, there is currently no direct evidence that consuming an organic diet leads to improved health or lower risk of disease.” (Forman 2012)



## **SOCIAL MEDIA DRIVING THE FOOD CONVERSATION**

## Misinformation on the Internet



- Abundant information on internet
- Much of information erroneous
- Can breed confusion, fear

Photo source: copyheart.org

Social media has created networks of common interest, making it easy to find others whose values and interests align with and support their own. Consumers can find like-minded people on the internet whether they are worried about low-calorie sweeteners, advocate for or against GMO labeling, seek local food markets, or have an interest in any other food issue. Too often, however, that information is misleading or inaccurate. With so much information available, it is more and more difficult to sort out the truth from the falsehoods, leading to confusion and food fears that gain traction through social media.

As Keith Ayoob, EdD, RD has noted, "Although people are increasingly relying on the Internet for nutrition information, 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." (Ayoob 2002)

## Clash of “Babes” on Social Media



Social media makes it easy to reinforce our beliefs, and build a close relationship with like-minded people. Food activists have created huge networks of followers on like-minded issues, and are able to mobilize and activate followers on food issues.

Vani Hari, known as the "Food Babe," is a self-styled consumer advocate, food crusader, and adviser on healthful eating. She is very good at utilizing social media to reach and activate her followers. She has over 89,000 followers on Twitter and almost 970,000 likes on Facebook. She has been able to create a strong brand, and more importantly is adept at developing headlines that generate discussion and sharability, which mobilizes her content. Hari is best-known for her investigations, shared on social media, of ingredients in "big food" products that she deems harmful. She claimed victory in her petitions that pushed Kraft to drop artificial orange color from its macaroni and cheese product, and helped get Subway to do away with azodicarbonamide, a common FDA-approved, but difficult to pronounce, additive in bread. (FDA 2014) A best-selling author, Food Babe lacks credentials in nutrition or food science, and often misinterprets peer-reviewed research and technical details about food chemistry, nutrition, and health. Critics accuse her of stoking unfounded fears about what is in our food to garner publicity, exploiting scientific ignorance, and polarizing the food conversation. (Bernstein 2015)

Online critics using parody names have taken to Twitter and Facebook in an organized effort to engage with Hari's followers and counter her unscientific claims. "Science Babe" Yvette Guinevere d'Entremont was a chemistry professor and toxicologist, conducting research on pesticide safety. She now runs her own blog, dedicated to debunking pseudoscience in the blogosphere with an attitude that "does not tolerate any BS when it comes to science." Science Babe has 113,000 likes on Facebook, where she declares, "Come for the Science, Stay for the Dirty Jokes." She has a big issue with Vani Hari, writing that Hari is "the worst assault on science on the Internet." (d'Entremont 2015)

# Food e-Vangelist: A Consumer Movement

the **FOOD** e-VANGELIST

**48%** under 35 years old

**62%** Female

**46%** Parents

**Income WELL above average**



  
break through  
Ketchum 2014

In 2014, Ketchum (a public relations agency) released its third “Food 2020,” a global survey of food influencers—consumers who care deeply about food, where it comes from, and the processes used in production and manufacturing. The agency identified a subset termed “food e-Vangelists, a group of highly food-engaged and influential consumers who want information from the food industry about the way food is raised, grown, packaged and sold. They want the ability to engage with these companies and to be included in a dialogue. (Ketchum 2014)

They are typically young females with incomes well above the average, have families, and are active online. This group is defined not by its demographic profile but by its like-mindedness. Action-oriented, they take it upon themselves to learn about the issues and to influence others by sharing their findings. Generating up to 1.7 billion online conversations every week, from recommendations to critiques, they believe it is their right and responsibility to influence food beliefs and change behaviors. Demanding transparency from food companies, they are shaping the new conversation about food and brands. But make no mistake, these individuals are not activists. This is not an army of Food Babes. This group is open to learning and willing to change their minds once they receive information. But they want the ability to gather that information and make their own determination.

They care deeply about health, demanding food industry make more healthy foods available; transparency with a need to know source, processing, production techniques, farm or supplier name, etc. on the label; and cause – caring that industry ensures the availability of food to families in need.

- More than half (54%) would like to see food companies prioritize making healthy foods more available in the future.
- More than half (54%) want ingredient information about a product (including source, processing, production techniques, farm or supplier name, etc.) on product labels.
- Two-in-five (40%) say that to recommend a food company to friends and family, the company would have to ensure quality food is accessible to families in need.

And when they have a concern, these Food e-Vangelists put pressure on industry to engage in a dialogue and potentially change their ingredients, while also targeting those who develop public policy around food production and regulation. (Kowitt 2015)

**DISCONNECT BETWEEN  
CONSUMERS, SCIENCE, AND FOOD  
INDUSTRY**

# Growing Distrust of Today's Food



Today's life is permeated by science and technology as never before. Agriculture and food production has benefited from scientific and technological advancement, utilizing innovative technologies often little understood or accepted by an uncertain public. Consumers are not convinced that these technologies provide any benefits for them and are suspicious that companies aren't telling them the whole story. Distrustful of the food production system and skeptical about modern technology, they reject "corporate" agriculture and food industry with their sophisticated and efficient food production and distribution system, assuming their focus is corporate profit, rather than conscientious land stewardship and safe food production.

Fear and uncertainty has been created as consumers have been told to avoid sugar and other carbohydrates, aspartame and other sugar substitutes, trans fat, saturated fat, protein, gluten, cholesterol, butter, margarine, salt, MSG, wheat, coffee, eggs, cooked vegetables, canned fruit, fish, and of course anything tainted with GMOs.

People are averse to uncertainty. We fear what we do not understand, which leads to a distrust of man-made over nature-grown foods and feelings of powerlessness over how food is produced and handled.



## “I don’t much like industry”

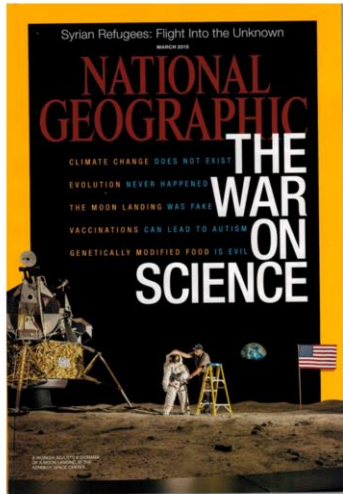


Consumers increasingly distrust large organizations, believing that

- Mass production creates more opportunity for error
- Industrialized food production is inherently impersonal
- “Big food” creates public safety issues

Consumers believe mass production creates more opportunity for error, industrialized food production is inherently impersonal, and that “big food” has created public safety issues. (Arnot 2013)

# The War on Science



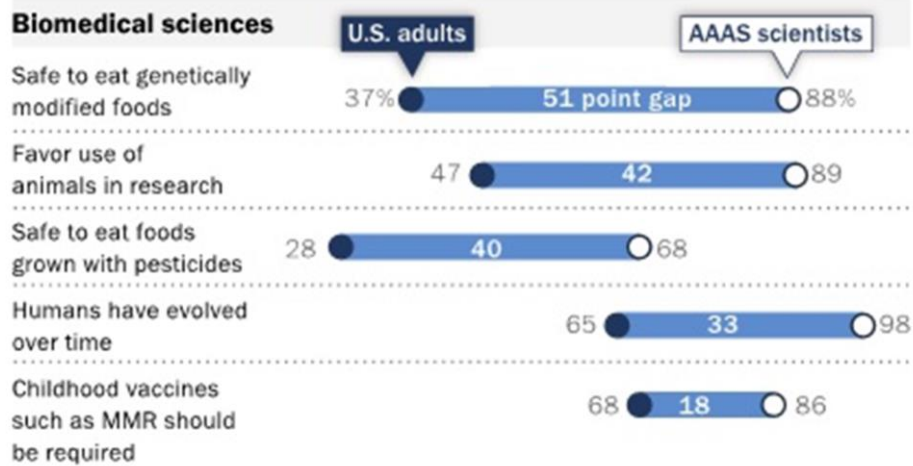
Why Do Many Reasonable People Doubt Science and Believe That...

- Climate change does not exist
- Evolution never happened
- The moon landing was faked
- Vaccinations can lead to autism
- Genetically modified food is evil

A recent issue of National Geographic posed an intriguing cover title, “The War on Science,” with an accompanying article entitled “Why Do Many Reasonable People Doubt Science?” (Achenbach 2015) The article declared that we live in a time when scientific knowledge is held up to intense scrutiny, with organized and furious opposition to everything from vaccines to evolution to climate change. Further, it claimed people doubt the consensus of experts on many of the most thoroughly accepted scientific tenets.

## Opinion Differences Between Public and Scientists

*% of U.S. adults and AAAS scientists saying each of the following*



Survey of U.S. adults August 15-25, 2014. AAAS scientists survey Sept. 11-Oct. 13, 2014. Other responses and those saying don't know or giving no answer are not shown.

PEW RESEARCH CENTER

A joint survey in 2014 by the Pew Research Center and the American Association for the Advancement of Science (AAAS) compared views of 2,002 citizens and 3,738 AAAS scientists, about accomplishments in key fields. (Funk 2015) The survey showed a large discrepancy of views across a range of science, engineering, and technology issues between the two groups.

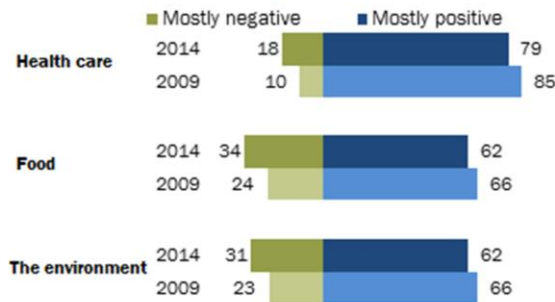
For example, only 37% of the general public say that genetically modified (GM) foods are generally safe to eat. In contrast, 88% of scientists say GM foods are safe to consume. This 51-point gap is the largest opinion difference between the public and scientists.

## Public Still Largely Positive About the Contribution of Science to Society, But Uptick in Negative Views

*% of U.S. adults saying science has made life easier or more difficult for most people*



*% of U.S. adults saying effect of science on the quality of each area in the U.S. has been mostly positive or negative*



Survey of U.S. adults August 15-25, 2014, Q4, 5a-c. Comparison with survey conducted April 28-May 12, 2009. Those saying don't know or volunteering no effect are not shown.

PEW RESEARCH CENTER

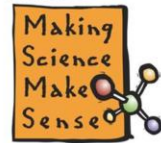
In the same survey, four out of five adults say science has improved their life and healthcare, but only three out of five say the same about the environment and food.

When it comes to food, 62% of Americans say science has had a mostly positive effect, while 34% say science has had a mostly negative effect. This is a change from the 2009 survey when positive views about food outstripped negative views by a wider margin (66% and 24%, respectively).

## Why is science uncomfortable?

**“Science”** is the pursuit and application of knowledge and understanding of natural and social worlds following a systematic methodology based on evidence.

- Challenge: Science in consumer lives
- Scientists trained happily to be comfortable surfing sea of uncertainty
- Public more comfortable looking for invariable truths



Why is science uncomfortable to many people? Science is defined as “...the pursuit and application of knowledge and understanding of natural and social worlds following a systematic methodology based on evidence.” (Science Council 2009) Science and technology permeate the things that we do in our daily lives. Yet most of us are divorced from science, understanding neither the language nor the concepts. Science is so specialized now that sometimes scientists themselves don't understand fellow scientists in a different field any better than the intelligent lay public does.

Scientific results are always provisional, susceptible to being overturned by some future experiment or observation. Scientists rarely proclaim an absolute truth or absolute certainty. They know that an understanding of research results can change with more research, and that precise information is seldom available. The general public however, is more comfortable with unwavering facts.



The provisional quality of science is troubling for many people. This aversion often translates into a marked preference for statements of fact over statements of probability. People want absolute answers. They demand to know exactly what will happen, not what might happen. The public evaluates information about risks and benefits with criteria that differ from those used by scientists. This disconnect has engendered the perception among many consumers that much of modern food and food production is risky business.

**MOVING FROM SCIENCE  
EDUCATION TOWARD CONSUMER  
ENGAGEMENT**

## Consumer Engagement

- Today's consumers demand to know
  - Consumers are going to seek the information, accurate or not
- Cannot only stand on science
  - Learn how people make decisions
  - Learn to create trust
  - Learn to adjust how we communicate

Nutrition studies are simplified and misconstrued by the media and increasingly by multiple sources on the internet, promoted by self-styled nutrition experts like the Food Babe and Dr. Oz, taken as gospel, and become urban legend. Against this background, providing science-based, credible information to a skeptical public is a challenge for the dietitian. Armed with nutrition knowledge and backed by peer-reviewed research, we earnestly try to inform and educate a consumer audience assaulted with conflicting messages by a variety of both credentialed and self-styled experts. Dietitians have to help consumers go beyond the headlines.

As health care educators and providers, we cannot simply stand on science alone to engage the consumer. The information may be correct and credible, but in many cases it is not persuasive or believable to consumers. It is not enough to provide facts. To persuade, we must understand how people today make decisions, create trust, and adjust how we communicate.



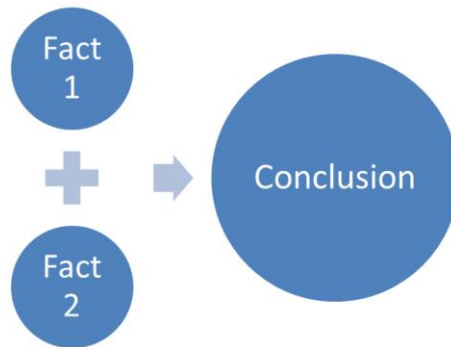
## Why “just a clear explanation” of science does not work

- Deficit Model: People are uninformed and just need a clear explanation
- The reality is that information, including scientific, is interpreted by emotions and feelings, not just explanations and facts
- Facts, in of themselves, are not persuasive

Explanation of science has traditionally been based on the Deficit Model: People are uninformed and just need a clear explanation. Thus we labor to translate and “convey the basic science more clearly.” We refute inaccurate and misleading information, anticipating that consumers will drop ideological or emotion-based resistance to our scientific reality.

According to David Ropeik author of “How Risky Is It, Really” and consultant on risk communications, this model does not work given 1) the climate in which food is currently regarded, and 2) how people interpret information, filtering it though through emotions and feelings, not just facts. (Ropeik 2010)

## How we *think* we make decisions



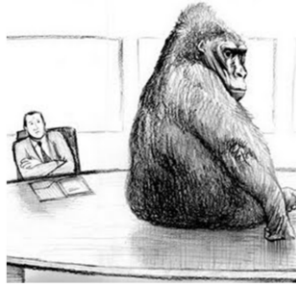
We want the world to make its decisions based on our facts. Logically, there is a perception, particularly among people who spend their lives on science, that people look at facts and then come to a conclusion. (Haspel 2014)

## How we *actually* make decisions: Cultural Cognition

- Tendency of individuals to conform their beliefs about disputed matters of fact to group values that define their cultural identity
- Individuals form risk perceptions that are congenial to their values
- Cultural values rather than empirical facts shape risk perception

Cultural cognition refers to the tendency of people to conform their beliefs about disputed facts to groups with values with which they most strongly identify. People form risk perceptions that are congruent with their values. (Kahan 2010) Cultural values rather than empirical facts shape risk perception, which results in benefits for the individual and the group in general. Creating solidarity in the group increases the chance that his or her group's views will prevail and strengthens the group's acceptance of that person as a member in good standing. The more threatened or risk averse the person feels, whether by GMO's or aspartame or pesticides or environmental doom and gloom, the more inflexible the person becomes to keep the group together and safe. (Ropeik 2010) Inflexibility creates polarities that impede compromise and progress on contentious issues. Therefore, despite accumulation of compelling scientific evidence, if it is contradictory to their views, it will be difficult to change attitudes.

## How we *actually* make decisions: Confirmation Bias



- People seek and favor information that confirms their existing beliefs
- Backfire effect: Evidence that contradicts their views can actually strengthen those views

We make decisions through our personal biases, which have been formed and shaped by our own experiences, and whether we like it or not, we all have biases. It's the 800-pound gorilla in the room that we tend to ignore. Think about it as how our society evolved in the absence of data. We seek sources of information that share our values and confirm our views, through a process called "confirmation bias." (Westen 2006)

Facts, in of themselves, are not persuasive, and can actually deepen the divide. When people are shown evidence they may be wrong, they not only discount that evidence, they become even more entrenched in their original belief. This is called the "backfire effect." (Reifler 2011)

## How we *actually* make decisions: Cognitive Dissonance

- Reluctance on part of people to change strongly held beliefs
- Willingness to ignore evidence that contradicts those beliefs
- Strong beliefs about risks, once formed within a particular social and cultural context, change very slowly, and are extraordinarily persistent despite contrary evidence



Cognitive Dissonance refers to our tendency to believe what we already believe, and to dispute anything that conflicts with it. (Ropeik 2010) It makes it difficult to change people's perceptions on closely held beliefs. As a result, changing beliefs about perceived or real food risks, and attitudes regarding contentious food issues are a challenge. But there are steps that we can take to start the persuasive conversation.

# **PERSUASIVE COMMUNICATION**

## Small Steps toward Persuasion

*Science literacy isn't the issue: Effective communicators must establish trust with the audience first, before sharing facts, so our facts can be received more fully.*

Check your own biases  
Listen to what consumers say  
Build trust  
Find common ground  
Appeal to values  
Stories about people resonate, so tell stories

Cultural cognition, cultural bias, and tribal communication can pose barriers to reception of the food and nutrition information we want to provide consumers. How do we break down these barriers to foster informed decision-making about food?

We have had the communication equation backward. We have been talking about our science and technical skills when consumers want to know that people they trust and who share their values are making decisions and recommendations about the food they serve to their families.

Let's move to the small steps toward persuasive communications which includes honestly assessing your own biases; listening without judgement to consumer concerns; working on building more trust, not just facts; finding common ground and values with the people whom you are addressing; and bringing your messages to life with stories and examples.

## Check Own Biases



- To be more persuasive, start by checking your own biases
  - Convince yourself that you have them
- Vet your sources. Are you listening to disinterested people?
  - Find the smartest person who disagrees with you, and talk
- For every issue, ask you yourself whether this could be the one you're wrong about
  - Do you automatically assume someone who disagrees with you is wrong on the issue?

Check your own biases. The reality is that we all seek sources of information which share our values and confirm our views. Do you regularly check the blogs and websites of people who have opposing views? Assess your own biases to see how automatically you accept or reject information based on how closely it conforms to your view.



## Active and Reflective Listening



“Most people do not listen with the intent to understand; they listen with the intent to reply.”



*-Stephen R. Covey The 7 Habits of Highly Effective People*

People also want to know you are listening to them, and not just providing information that you judge they need to hear. If you have a substantive recommendation or action to offer in response to a contentious food topic, and you want people to listen to it, you have to listen to them first. (Wansink 2014) Listen without judgment to build bridges with consumers. To really understand the passion and fear that drives consumer skepticism around particular food issues, ask questions, understand why consumers are asking questions, and listen well to find shared common ground.

Reflective listening seeks to understand a speaker's idea, then offers the idea back to the speaker using the listener's own words to confirm the idea has been understood correctly. If people feel or perceive that they are not being heard, they cannot be expected to listen. Effective risk communication is a two-way activity.

As Stephen R. Covey noted in *The 7 Habits of Highly Effective People*, “Most people do not listen with the intent to understand; they listen with the intent to reply.”

# Building Trust

“People don't care how much you know until they know how much you care.”

*-Theodore Roosevelt*

**Trust Determination Theory:** “When people are stressed or upset, they typically want to know that you care before they care what you know.”

*-Vincent Covello*



Consumers want to know that the person providing the recommendations and information about the food they serve to their families shares their values and can be trusted.

As President Theodore Roosevelt said, “People don't care how much you know until they know how much you care.” What is important is to adjust our communications strategies to first address a consumer’s closely-held feelings and opinions before moving forward with the science.

Trust Determination Theory is explained by Vincent Covello: “When people are stressed or upset, they typically want to know that you care before they care what you know.” (Covello 2011) Let people know that what they said has been understood before launching into information and data. People are often more concerned about issues such as trust, credibility, control, benefits, competence, voluntariness, fairness, empathy, caring, courtesy, and compassion than about facts, statistics, and data. (Covello 1988)

- Understand the passion and fear that drives consumer skepticism around food issues.
- Communicate that they are entitled to their opinion, and why.
- Address their concerns, as well as your own.

## Trusted Sources

- Reliable nutrition info is challenging to find
- The RDN is most highly trained in nutrition
- “Mom Scientist” - a mother with scientific education and/or work experience - most trusted source in consumer survey

While reliable nutrition information is hard to find, the registered dietitian nutritionist is the most highly trained professional in the realm of nutrition. And it turns out that consumers view the RDN as a credible source. While reframing how we communicate is important, it is also important to choose the right person to conduct the conversation. Center for Food Integrity (CFI) conducted a survey to identify most trusted voices to provide technical information about genetically modified foods and antibiotic resistance. Note that the intent was to identify elements that promote consumer believability and trust in the messenger, not to identify messages of the two topics. Between the mom scientist, a federal government scientist, and a “peer who shares my interest about food,” they found that the “mom scientist” was the most trusted source of information. After reading information from each of the three voices about the two topics, trust in the “mom scientist” and “government scientist” remained strong, while the peer dropped to the least-trusted source of information. This indicates that “once shared values have been established, having technical expertise and a credential builds credibility when communicating technical information.” (CFI 2014)

## Find Common Ground



Analyze your audience. Go beyond the basic demographics of age, gender and socio-economic level. Learning about the values, attitudes, and beliefs of your audience will allow you to anticipate and plan your message. The more you know and understand the background of your audience and their values and needs, the better you can establish common ground.

## Shared Values

- Understand consumers' values
  - Perception of shared values is 3 to 5 times more important than demonstrating technical competence
- Questions to ask ourselves:
  - What are my values on the topic?
  - What values do we share?
  - How transparent am I when I share these values?

Perception of shared values is an important element in trust determination. Perception of shared values is 3 to 5 times more important than demonstrating technical competence. (Center for Food Integrity 2013) In other words: Do you and I share the same values, and can I count on you to do "what's right?"

Ultimately, building trusting relationships with consumers is about making what you are doing relevant to them and helping them understand that you share their values on important issues like food ingredient safety, the environment, and providing healthy, affordable food.

Ask yourself:

What are my values on the topic?

What values do we share?

Have I shared my values?

How transparent am I when I share these values?

## Preparation is Paramount

- **Research and understand the varied facets of the food topic area**
  - Look at peer-reviewed research to assess the science
  - Search the internet to find opposing views
  - Prepare yourself to address potentially difficult questions
- **Pro-actively bring up points of conflict**
  - Address top-of-mind consumer concerns
  - Take the initiative to set your position rather than an opponent setting it for you

Preparation is paramount, especially when engaged in food topics that generate a lot of passion on the part of consumers, such as low-calorie sweeteners and other food additives, pesticides, local or organic or conventional agriculture, GMO's, gluten-free, etc. In preparation to address a topic, we usually do an assessment of the peer-reviewed literature to provide us the information on which to base our food recommendations.

However, there are plenty of varied opinions and points of view, both credentialed and not. An internet search can easily be done to learn about different facets and views of a food issue, especially passionate stances. By doing your homework, you will be able to anticipate what the most significant and potentially contentious issues and questions are regarding a food topic, and prepare yourself to address them.

Proactively address points of conflicts by bringing them up within the content of your talk, in an article or blog post, and in direct conversations. If you do not do this, the issue will likely come up as a question anyway. It is a way to establish your position preemptively rather than allowing an adversary to set it for you.

## Reframe the Conversation #1



Effective communicators must establish trust and credibility with the audience first, before sharing facts, so our facts can be received more fully.

In a conversation in which you disagree on a topic, whether with a friend or a patient or an audience, seek to bridge differences by first finding common ground. For example, one of the most desirable goals is the provision of safe and healthy food for their families. This is a precept on which we can all agree.

Acknowledge both risks and benefits of the food issue, an approach that is nuanced and often unexpected.

Become a source people trust by being factual and reasoned, rather than opinionated and dogmatic.

Be honest and aim for transparency.

## Reframe the Conversation #2



Skip being negative or dismissive. Debunk an idea or claim, not the person. Replace the existing narrative in a person's mind with new facts in the form of stories rather than a recitation of information.

If you disagree, do so without being disagreeable. Rather than saying, "I disagree," say, "I see it differently," "Help me understand," and "Tell me more."



## Story Telling

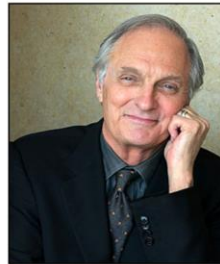
- Make it meaningful - If the science information we want to convey isn't relevant, consumers simply won't hear it
- Create relevance and interest by telling stories, narratives, anecdotes and "for examples" about people to humanize your information

Research does not speak for itself outside the world of science if you do not make it relevant for the listener. Storytelling and narratives about people help data and facts to come alive and be more memorable.

Engage the audience from the outset of the conversation, blog, or talk. Tell stories - the way we've communicated since the beginning of time. Story telling builds rapport with listeners. Use compelling facts in your message but support them by telling stories that bring them to life and act as hooks in the minds of the audience. Illustrate your data and facts by relating a "people" example from your experience.

# The Curse of Knowledge

- Keep your messages and content lean
  - Rule of 3
  - Repeat messages 3 times
- Clarity – Share information that is easily understood
  - Ditch technical jargon



The “Curse of Knowledge” is a cognitive bias when you know things that the other person does not, and you have forgotten what it’s like to *not* have this knowledge. (Camerer 1989) You *assume* that other people know the things that you do, and believe that people understand you a lot better than they really do. This makes it harder to identify with the other person’s perspective and explain things in a manner that is easily understandable.

Simplify by utilizing the Rule of Three. The rule of three is a very general rule in speaking, in writing, and in music, that states that concepts or ideas presented in threes are inherently more interesting, more enjoyable, and more memorable. People tend to remember lists of three things. (Covello 2011)

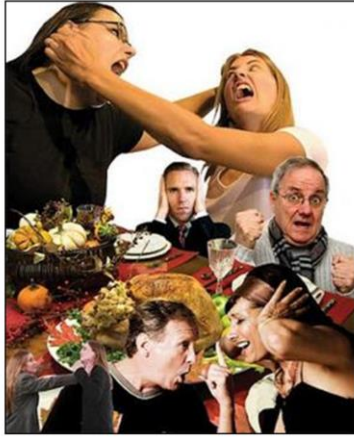
In Winston Churchill’s famous “Blood, Sweat and Tears” speech, he is widely attributed as saying, “I can promise you blood, sweat and tears.” What he actually said was, “I have nothing to offer but blood, toil, tears, and sweat.” Because of the rule of three we simply remember it as blood, sweat, and tears. Keep your messages to three pertinent points, and keep them easy to understand. (Churchill 1940)

Eliminate jargon when addressing the public. Technical language and jargon are useful as professional shorthand when addressing peers, but they are barriers to successful communication with consumers. The actor, Alan Alda, hosted a PBS series interviewing more than 700 scientists over 12 years. The scientists were formal and stilted. Once they realized however, that Alda was both curious and excited about their work, they changed and became warmer and more communicative. Jargon fell away and they spoke in plain language, creating a better connection to the audience.

## **GETTING IT RIGHT**

Let's revisit two of the scenarios of headlines gone awry, introduced earlier in the module. Before conveying the technical information on slides 16 and 18, implement the communication techniques you now have in your toolbox.

## Handling SALSA Story in a Social Situation



“But I never was happy,  
never could make a good  
impromptu speech,  
without several hours to  
prepare it.”

*-Mark Twain*

We've all been there. You're at a dinner party and someone asks you what you do. "I'm a dietitian," you reply. Immediately you are questioned by one of the guests about the recent study she read that LCS caused waistline gains. The guests at the dinner table lean in to hear your answer.

To have your information well-received, and to keep the gathering pleasant, apply the communications techniques discussed previously. Remember it's a conversation, not a speech.

- Acknowledge that LCS sweeteners have been a question mark in peoples' minds. Are they safe? Can they help people shed extra pounds? (Honesty, Pro-active)
- Say how important it is to you that you help people attain the healthiest diet. (Share a value, Caring)
- Acknowledge your biases and conflict of interest if any. (Transparency, Ethics)
- You may say, "I've looked at that study and don't feel it tells a full story. But before I get into it, I would really like to hear your thoughts." Listen without judging whether they are right or wrong. Use your own words to confirm what they have said. For example, "I understand you like the taste and saving calories but wonder about safety issues. And now the news about the study that LCS may actually increase the waistline, gives you more to question." (Active and reflective listening, Finding common ground)
- Acknowledge downsides, such as the lady observed in the checkout line with cart full of LCS foods and chocolate cake cradled in her hands, or diet drinks displacing more nutrient-rich beverages in kids' diets. (Nuanced and unexpected)
- Note that we all have personal experiences or observations, whether a husband who lost 20 pounds in a year by switching to diet soda and running, or a teen with newly diagnosed diabetes for whom diet soda made the diet easier to follow. You can weave in both patient and personal stories alongside the scientific information to reinforce trust. (Story telling, Credentials)

It's hard to be put on the spot, but you will be ready for the opportunity to provide valuable information, and debunk some of the nutrition misinformation so prevalent today.

## A Presentation on Organic Agriculture



The Department of Nutrition at your state university has invited you to speak to a nutrition class about the assumption that organically produced foods are superior nutritionally and environmentally to conventionally grown foods. What do you do?

- Talk with the professor or to someone who has already guest spoken to the class, and ask what students may have heard and how they reacted to the information. Check to see if there is an opportunity to arrive early and informally talk with students before the class begins. (Preparation is paramount)
- Determine what and how much information the class needs, not how much you can provide in a brain dump. (Keep content lean)
- You discover that the students believe to varying degrees that organic food is more safe and wholesome than conventionally grown food, and the environment is better off with organic farming. Acknowledge that many people have the same beliefs, which has helped the growth of the organic food industry. (Honesty)
- Capture their attention with a story. Describe the questions you ask and what you learn from producers and vendors when shopping at a farmers markets, or talk about what your experiences on a farm or ranch tour. (Story-telling)

(continued)

## A Presentation on Organic Agriculture



(continued)

- Acknowledge your biases and conflicts of interest. Disclose if you consult for an industry or commodity group, or receive compensation, reimbursement, in kind donations, free gifts, products or services. (Transparency, Ethics)
- Note opposing positions, considering that using the best of different types of food production, including organic, may be needed to help meet agricultural and food challenges, or consumer acceptance. (Pro-active positioning; Provide a counter narrative)
- Find common beliefs and values such as access to healthy, affordable food, before moving to more controversial topics. (Share a value) Share your experiences to show that you value what is important to them, such as gardening organically at home or volunteering at a food bank. (Care)
- Present with a farmer who describes how she makes decisions about what types of seeds to plant and why, to weave stories from each of your experiences along with the science-based information. (Credibility, Trusted Source)
- If time and space allow, organize a round table discussion. Or use the question and answer period as a time to demonstrate active and reflective listening.

Discussion on controversial topics can trigger strong emotions in your audience, both positive and negative. You may find that you can't completely satisfy everyone's concerns, but you have shown that you have taken their concerns into account and added new facets to the dialogue.

## Go behind the headlines

- Today's complicated food landscape is filled with:
  - Passionate food opinions
  - Self-claimed experts
  - Abundance of conflicting information from array of news platforms
- The public is increasingly skeptical of science and "just the facts."
- Use effective communications strategies to provide trusted information, focusing on values and emotions first, then the science

Today the landscape of the food conversation is becoming increasingly contentious. Misinformation abounds at all levels of nutrition news communications. The result is an increasingly noisy dialogue about food—its production, industry, labeling, regulation, promotion, research, sourcing, and authenticity. Consumers influenced by food activists and their own desires for more natural, simple, and authentic food products view "big" food industry as "bad." The problem is that it hasn't been much of a dialogue, but rather a rancorous food fight.

Dietitians with the with technical knowledge, experience, and communication skills are uniquely positioned to provide credible food and nutrition information and counter oversimplified and sensationalized headlines. Dietitians can be an active and valued voice to help consumers make the decisions that affect their food choices. We reach and help consumers by becoming trusted sources of information, and by focusing on values and emotions before the science.

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