

FOOD Insight™

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Consumers Primed for Personalized Information on Foods for Health

The International Food Information Council (IFIC) recently commissioned research on consumer attitudes toward foods that provide a health benefit beyond basic nutrition, or “functional foods.” Such health-promoting foods can range from broccoli to fortified foods such as calcium fortified orange juice, to soy-based products to nutritional supplements.

The first of the two consumer research studies was a Web-based quantitative survey of 1,012 U.S. adults years 18 and older fielded May 6-12, 2005 and it was weighted by education, age, and ethnicity to the 2003 U.S. population estimate. This allowed the findings to be representative of the American public, as a whole.

The second, a qualitative study was conducted August 9-11, 2005 with 27 participants using CoRe Boards™, a



new Web-based focus group technique. Commissioned by IFIC, Cogent Research, of Cambridge, MA., created this online discussion board methodology, to provide participants with a private-access, moderator-controlled chat room.

The last quantitative study, fielded in 2002, found that the top health concerns for consumers were cardiovascular disease (CVD) and cancer, with concerns about being overweight a distant third. Now, in the age of obesity hyperawareness, weight has climbed to the number two health concern for consumers, just behind CVD. This new research shows consumers most likely to mention weight as a concern are those with a college degree or higher, females, and consumers age 18 to 34.

According to the 2005 quantitative survey, consumers overwhelmingly believe food and nutrition play “a great role” in maintaining or improving overall health.

Similar to the quantitative findings, almost all of the respondents to the qualitative study report

they believe certain foods have benefits that go beyond basic nutrition and may reduce the risk of disease or promote health.

“I believe certain foods may help reduce risk or control certain diseases,” said one focus-group participant, “because if, for example, a person drinks milk products, the calcium helps promote healthy bones.”

In addition to food playing a role in reducing the risk of certain diseases, consumers believe family genetics play a role. Ninety-one percent of consumers believe their family health history plays a moderate to great role in maintaining or improving their overall health.

“My family genetics indicate that I do need to be worried about thyroid disease, diabetes, heart disease, cancer, and blood pressure issues,” said one focus-group participant.

Whole Foods versus Food Components

As in past surveys, consumers more easily identify certain whole foods, such as fish, milk, broccoli, and tomatoes, as providing a benefit to their health beyond basic nutrition. These well-known “good for you” foods were joined by other foods such as whole grains and green

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Researching the Research: Evaluating Epidemiology

Epidemiology—a branch of medical science that deals with the incidence, distribution, and control of disease in a population (*Merriam-Webster's Collegiate Dictionary*, 10th edition).

If you read the paper, listen to news radio, or catch the nightly news on the television, you have no doubt heard about dozens of research studies linking food and nutrition to health. It's a hot topic; after all, everyone eats! Many of the nutrition-health studies we hear about are epidemiological—population studies. Epidemiology is a valid and valued form of research and has long been of special importance in the public health arena. Because it has some limitations, it is also a type of research that is frequently misinterpreted. Media coverage of the results of epidemiological research is frequently inaccurate, or the results are described in a way that renders the findings less than useful—or even meaningless—to the average person.

Learning a bit about epidemiological research is a good way to help make sure that we, as consumers, better understand research that may affect our health. Once we know what to look for, it is a lot easier not only to interpret what we read and hear about research but also to decide if it is important to us.

Epidemiology 101

Epidemiological studies look at populations to investigate potential associations between aspects of health (such as cancer and heart disease) and diet, lifestyle, genetics, or other factors within populations.

This type of research yields information about the distribution and determinants of disease or other health outcomes for further study, but, like any empirical study, it does not establish cause and effect. For example, comparison of the per capita meat consumption between various countries may reveal an association between eating meat and certain types of cancer. However, one could not correctly conclude that eating more meat causes the cancers, because other unrelated factors in the diets of meat eaters may truly be the culprits (such as total fat, calories, or the lower levels of vegetable consumption of meat eaters).

Studies conducted as part of epidemiological research use various types of research designs. *Longitudinal studies* monitor a group

of people over a period of time to observe the effects of diet, behavior, and other factors on health or the incidence of disease, whereas *retrospective studies* look at events and behaviors that have already taken place (*University of California Berkeley Wellness Letter*, 1996). Epidemiological research may also be either observational or experimental. *In experimental research*, part of the population receives some sort of treatment (sometimes called *an intervention*), and the results are compared with the results for those who do not receive the treatment (the control group). *Observational research* suggests associations or correlations between characteristics based on observed differences.

The roots of epidemiology

Maybe the word *epidemiology* is new to you, but the basic concepts of epidemiological research have been around for centuries. Early Greeks and Romans recognized that symptoms of certain diseases were associated with environmental conditions (for example, “marsh fever” occurred more frequently among people who lived in swampy areas).

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Evaluating Epidemiology

Early epidemiologists considered not only infectious diseases, like cholera and plague, but also environmental hazards, like lead, chronic diseases, and even occupational risks, when they conducted their research.

Traditional quantitative epidemiology began in the 17th century because of concern for the public's health. That early epidemiological research focused on the plague and poor sanitation (and its accompanying diseases). Infectious disease epidemiology and the germ theory (which states that single agents relate one to one to specific diseases) characterized the mid- to late 19th century and the first half of the 20th century. For example, John Snow's work on the cause of cholera in the mid-1850s was followed by the study of tuberculosis, anthrax, and later, polio. Beginning in the 1920s, those who started to search for nonmicrobiological causes of disease ran against the tide of current scientific thinking. Joseph Goldberger in the United States was such a pioneer when he established nutritional deficiency as a cause of pellagra. Thus, the study of nutrition and disease was born.

As is the case today, the conclusions of early epidemiologists were not always correct. Nevertheless, over the years the science of epidemiology matured and became more refined. It has played an enormous role in helping to quantify the magnitudes of such diseases as HIV/AIDS, breast cancer, Alzheimer's disease, and tobacco-related diseases and has even been used to suggest some factors that influence their occurrence. Traditionally, epidemiology has been a guiding force behind many public health policies and programs worldwide. The decline in infectious diseases and the rise in the relative importance of noncommunicable diseases (diseases that are not contagious and that cannot be transmitted from person to person) have led to the development of modern epidemiology. Today, consumers may

interpret epidemiological data as relating to individuals when, in fact, epidemiological studies are intended for focus on broad population groups.

What do these studies mean to me?

For most people, interpretation of the results of epidemiological research is not an easy task—especially when the report containing the full research study is not available for consideration, as is usually the case for consumers. How, then, can we begin to understand whether a study is relevant to our lives? There are a few ways to quickly ascertain whether a given piece of research is applicable to one's life. Granted, this is the “quick-and-dirty” approach to interpreting research, and taking the time to read an entire research report critically is always best. In a pinch, however, the following tips can get you started:

- **Consider the type of risk expressed in the study.**

Remember that it is best to consider both types of risk—absolute risk (also referred to as excess risk) and relative risk—when evaluating a study (see the sidebar “Risky Business”). Excess risk will tell you how likely the outcome is to happen overall, whereas relative risk compares the risk between groups. If the excess risk is negligible, then the relative risk may be irrelevant.

- **Assess whether the results are generalizable to other groups.**

Studies are frequently conducted with rather narrow population groups, making for stronger, more valid results, but this sacrifices the ability to make generalizations. For example, a study conducted with men may not mean that the same results would occur in a population of women. Research conducted with animals cannot be easily

generalized to humans, the results of research conducted with adults may not be applicable to children, and so on. Researchers usually give those kinds of admonitions at the end of the research study, but these types of statements often get lost (or are not included) because of the media's time or space constraints in the reporting of research.

- **Remember that an association or correlation does not prove cause and effect.**

It cannot be stressed enough that an association or correlation does not prove cause and effect. This is one of the easiest mistakes to make when interpreting research. The media do it frequently, and so do consumers. When an association is suggested, more research is always needed to determine whether that association really exists and why.

- **View research studies as discussions among scientists.**


Almost no one gets to have the final word, as it is rare that a study provides a final, complete answer. Flip-flopping opinions among experts, although they are frustrating for the public, reflect the fact that science is a dynamic, evolving process.

The bottom line

Regardless of whether the study is epidemiological or another type of research, don't change your diet on the basis of the findings of just one new study. For the reason mentioned in the last tip given above, it may be unnecessary—and perhaps even unwise—to modify dietary behavior on the basis of the findings of one study, especially if you are considering eliminating an entire food category. Wait for other studies, perhaps many other studies, to be performed to confirm the new findings before making a change in your diet.

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Personalized Messages on Foods for Health



tea that are getting more coverage by the news media. For example, this spring, about a month before the IFIC survey was fielded, the U.S. government released its new MyPyramid food guidance system. The new food guidance stresses the importance of whole grains in the diet, which may account for the increased awareness of the benefits of whole grains by the quantitative survey respondents.

On an unaided basis, the top “functional foods” named in the quantitative survey were:

1. Fruits and vegetables (general)
2. Milk
3. Fish, fish oil, seafood
4. Fiber
5. Broccoli
6. Tomatoes
7. Whole grains
8. Green leafy vegetables
9. Oats, oat bran, oatmeal
10. Garlic
11. Oranges, orange juice
12. Green tea

Diet/Disease Relationships

When asked, on an unaided basis, what foods may help to keep certain diseases at bay, 9 in 10 consumers can name a diet/disease pairing relationship.

On an aided basis, the top diet/disease pair, known by 93 percent of respondents, was calcium for bone health. Other top pairs included fiber for maintaining a healthy digestive system (92 percent), vitamin D for the promotion of bone health (88 percent), and whole grains for reduced risk of heart disease (83 percent). Consumer awareness of these

diet/disease pairings can be traced to long-held associations about certain foods versus those based on emerging science.

Some diet/disease pairings that are gaining awareness among consumers include antioxidants for protection against free radical damage (79 percent), omega-3 fatty acids for reduced risk of heart disease (78 percent), and lycopene for reduced risk of prostate cancer (57 percent).

Awareness vs. Consumption Behaviors

The awareness of diet/disease pairs indicates consumer consumption of those foods. For example, of those respondents who are aware of the link between antioxidants for protection against free radical damage, a full 55 percent said they are already consuming foods that contain antioxidants, such as fruits and vegetables, to protect against possible damage from free radicals.

Differences Between the Sexes and Among the Ages

It's no surprise that men and women see things differently when it comes to food and health. While 40 percent of women mention weight as a top health concern, only 27 percent of men do so. But the opposite is true when it comes to heart disease or heart attacks as a top concern; 40 percent of men mention it while only 29 percent of women do. This finding is especially interesting because heart disease is the greatest health threat to women, and many public health awareness campaigns have sought to educate women about heart disease risk.

Both of the sexes seem to want to learn more about adding healthful foods to the diet, with 88 percent of women and 78 percent of men agreeing

with this sentiment, but the numbers vary with age when it comes to actually making dietary changes.

Thirty-five percent of Americans ages 25 to 34 have made no changes to their diet. By contrast, 40 percent of Americans ages 45 to 54 have changed their diet, with 67 percent of this group removing what they perceive as less healthful elements from their diet.

Forty-eight percent of young women, those of “Generation Y” age 18 to 24, are the most likely to have added healthful elements to their diet, with 35 percent adding more vegetables and 27 percent adding fruit in an effort to improve or maintain their health.

Where Consumers Get Their Information

The media, especially electronic media outlets such as the Internet, are the top source of information



about health and nutrition, but people still look to their physician for guidance.

According to IFIC's quantitative survey, 54 percent of respondents get their health and nutrition information from the Web or Internet followed by their physician (43 percent), magazines (28 percent), television news (21 percent), and friends and family (20 percent).

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Personalized Messages on Foods for Health

Again, there is a difference among the ages. Americans ages 18 to 54 are more likely to name the media, whether print or electronic, as one of their top sources of information on health and nutrition, while those age 55 plus were more likely to get their health and nutrition information from their physician.

“I read the Health section on MSN a lot,” said one focus-group participant. “It has great links to cool sites and if it is on a big site like MSN, I trust it.”

But just because consumers get their information from the media, doesn't mean they necessarily trust all the information provided. When asked on an aided basis who is the most influential source of information regarding food and food components, 52 percent said health professionals, followed by dietitians (41 percent), health associations (20 percent), food label (13 percent), and magazines (9 percent).

Reporting the Science

With more and more of the public getting their health and nutrition information from the mass media, it is important for everyone in the communication chain to provide the best, most scientifically accurate information possible.

Consumers often say one of the reasons they do not make healthful lifestyle changes is because messages are often conflicting, and they desire more personalized nutrition information on how to make healthful dietary changes that “fit” their lifestyles. Health professionals, among others, play a key role in getting consumers information that is accurate, while also providing consumers with tips on how to apply this information to their life.

To aid in this process, the IFIC Foundation partnered with the Institute of Food Technologists (IFT)

to develop the *Guidelines for Communicating the Emerging Science of Dietary Components for Health*. These *Guidelines* include a checklist for communicators to help enhance the public's understanding of foods, food components, and dietary supplements and their role in a healthful lifestyle.

Some points that communicators ranging from health professionals, scientists, scientific journal editors, government officials, and journalists should consider include:

- Serve-up plain talk about food and health.
- Scientific research is evolutionary, not revolutionary.
- Carefully craft communications.
- Make messages meaningful.
- Cite study specifics.
- Consider the peer-review process and explain it.
- Consider the full facts when assessing a study's objectivity.

This recent research indicates that consumers are primed for personalized messages about health-promoting foods. Personalization is key, with one focus group participant commenting, “I would be motivated to do more with regard to my diet if I had more accurate information on foods that would reduce my risk of these diseases.” Everyone in the communication chain plays an important role in providing consumers with scientifically accurate information to help consumers make healthful lifestyle changes.

The full *Guidelines* can be found on the IFIC Foundation Web site at: <http://www.ific.org/nutrition/functional/guidelines>.

For more information on functional foods go to: <http://www.ific.org/nutrition/functional>.

Within the last two decades, soy products have been increasingly incorporated into the American diet. Some foods made from soybeans include tofu, tempeh, miso, soybean oil, and, of course, soy sauce. However, with increasing popularity of soy-based foods, a multitude of other soy products—so called “second generation” soy products—and soy ingredients have become available, such as soy milk, soy flour, soy protein concentrate, and soy protein isolate. So, what does all of this mean to Americans? And what will be the health effects of incorporating soy into the American diet? To help improve the public's understanding of the emerging research on soy, the International Food Information Council (IFIC) Foundation released the fourth in a series of referenced materials on various food components and their potential health benefits, *IFIC Foundation Functional Foods Fact Sheet: Soy*. The *Soy* fact sheet contains information on the health effects and dietary sources of soy, as well as citations to scientific research on soy. A “bottom line” section summarizes the research and current recommendations. According to the fact sheet, incorporating soy protein-rich foods into the diet is beneficial in helping to reduce LDL-cholesterol and thus the risk of cardiovascular disease.

There are other components of food like omega 3 fatty acids, pro- and prebiotics, plant stanols and sterols, and antioxidants that provide added health benefits when incorporated into a balanced diet. To learn more about soy and these other healthful components of food go to www.ific.org, and click on functional foods.

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Evaluating Epidemiology Risky Business

If you do not fully comprehend the differences between relative and excess risk, you may completely misunderstand the importance of a research study. *Excess risk* refers to the actual risk of an occurrence, that is, the chance that a specific outcome will occur. *Relative risk* puts risk in comparative terms, for example, the outcome rate for people exposed to the factor in question compared with the outcome rate for those not exposed to the factor. A relative risk of more than 1 indicates an increased risk of the outcome under investigation; a relative risk of less than 1 indicates a decreased risk of the outcome. Relative risks are the most commonly used measure of morbidity or mortality in the medical literature today. In many cases, however, the excess or absolute risk is a far more relevant statistic for the public.

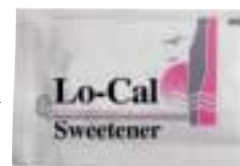
For example, a news report that claims that people who consume Product X are 75 percent more likely to suffer from Problem Y than those who do not consume it may seem to be a convincing and important study. This type of statement is an expression of relative risk. In the same example, the excess risk of someone in the study suffering from Problem Y may have been only 1 percent. In this case, the excess risk is the more meaningful result, as it tells us that only 1 percent of people suffer from Problem Y anyway. It was the expression of the results as a relative risk that made the problem seem more important than it really is. However, relative risk can also make a problem appear to be less important than it actually is. Therefore, it is important to consider both relative risk and excess risk when evaluating research results.



A Look at Low-Calorie Sweeteners

Learning the skinny on low-calorie sweeteners could help keep good health on your plate. Here are some answers to frequently asked questions:

- Q. What are low-calorie sweeteners?
A. Low-calorie sweeteners are ingredients added to food to provide sweetness without adding a significant amount of calories
- Q. Are low-calorie sweeteners safe?
A. Yes. For a low-calorie sweetener or any food ingredient to be on the market, it must be considered safe by the U.S. Food and Drug Administration (FDA). Low-calorie sweeteners are safe for most people, including people with diabetes and individuals on a weight management program.
- Q. Should anyone restrict their consumption of low-calorie sweeteners?
A. Yes. Aspartame contains phenylalanine, an amino acid also found in many protein-containing foods, and people with a rare hereditary disease known as phenylketonuria and some pregnant women with hyperphenylalaninemia must control their intake of phenylalanine.
- Q. Can the consumption of low-calorie sweeteners be an effective weight management tool?
A. Yes. Low-calorie sweeteners can play an important role in a weight management program that includes both exercise and a healthful diet. Studies show that when low-calorie sweetened foods and beverages are substituted for their conventional counterparts, people consume fewer calories. Low-calorie sweeteners can provide a choice for weight-conscious individuals seeking great tasting foods with fewer calories.
- Q. What products use low-calorie sweeteners?
A. Low-calorie sweeteners are approved by the FDA for use in a variety of products, ranging from cereals and yogurt to pudding, soft drinks, and candy. Look for any of the five approved low-calorie sweeteners in the product's ingredient list: acesulfame potassium, aspartame, neotame, saccharin, and sucralose. Some or all can be used as table-top sweeteners or be used at home in cooking and baking. For more information, visit www.ific.org.



FDA Addresses Food Safety for Moms-to-Be

The U.S. Food and Drug Administration (FDA) has an ongoing commitment to inform expectant mothers about the potential risks of foodborne illnesses, a special concern for pregnant women. The new bilingual public education campaign, *Food Safety for Moms-to-Be*, features an educator's kit for health care professionals and a Web site to help educate expectant mothers and others about the food safety risks of *Listeria monocytogenes*, methylmercury, and *Toxoplasmosis*.

The Web site provides food safety information for women who are pregnant, who are planning to become pregnant, and who have already delivered their babies, including articles on food safety and health tips; the Educator's Resource Guide; a PowerPoint presentation; handouts; a poster; a video; preventive steps known as *Clean, Separate, Cook, and Chill*; and more to reduce the risk of foodborne illness.

To access *Food Safety for Moms-to-Be* information and materials, go to <http://www.cfsan.fda.gov/pregnancy.html>.

Eagerly-Awaited MyPyramid for Kids Released

On September 28, 2005, Agriculture Secretary Mike Johanns made public the new MyPyramid for Kids, a child-friendly version of the new MyPyramid Food Guidance System released earlier this year.

MyPyramid for Kids includes age-appropriate information about the 2005 Dietary Guidelines for Americans and MyPyramid, such as recommended proportion of food from each food group and the importance of making smart food choices and being physically active each day. Interactive computer games, lesson plans, posters, worksheets, and tips for parents are among the supplemental materials for MyPyramid.

The MyPyramid for Kids slogan is "Eat Right. Exercise. Have Fun."

To access MyPyramid for Kids go to <http://www.mypyramid.gov/kids/index.html>.

New IFIC Foundation / FDA Publication

Food Ingredients and Colors

The *Food Ingredients and Colors* brochure is your one-stop resource for answers to common everyday questions about food ingredients and colors.

For centuries, certain ingredients have served useful functions in a variety of foods. Food ingredients (for example, spices, stabilizers, and emulsifiers) are essential to preserve, flavor, blend, thicken, and color foods. Added minerals and vitamins have played an important role in reducing serious nutritional deficiencies among certain groups of individuals. Others, such as preservatives and antioxidants, help preserve and extend the freshness of certain foods.

Additionally, this brochure provides useful background information about food and color additives: what they are, why they are used in foods, and how they are regulated for safe use. The brochure also includes the names of popular ingredients found on product labels.

The *Food Ingredients and Colors* brochure is published jointly by the International Food Information Council Foundation in partnership with the U.S. Food and Drug Administration. To order the eight-page, full color brochure, send a self-addressed envelope to Food Additives, IFIC Foundation, PO Box 65708, Washington, DC 20035. It is also available in PDF format on the IFIC Foundation Web site at www.ific.org and on the FDA Web site at <http://www.cfsan.fda.gov/~dms/foodic.html>.

What's New at IFIC.ORG?

For your outreach to the growing Hispanic population in the United States, you'll find an invaluable resource at <http://ific.org/sp>. The IFIC Foundation has developed a Spanish-language Web site where you will find timely and relevant sound, science-based Spanish-language information for adults, adolescents and children. New information is uploaded regularly. Create a link to <http://ific.org/sp> and provide your users with a wealth of information on food safety, nutrition and health in Spanish.

New IFIC Foundation Publications

Below are the newest releases from the IFIC Foundation. Single copies of most publications are available free-of-charge. For a comprehensive listing of publications or for bulk prices, please request the IFIC Foundation Publications List below.

Publications List (MI-4010)

A complete list of publications available from the IFIC Foundation.

Everything You Need to Know About Aspartame (EB-2155)

A brochure containing information on the latest science, safety, uses and consumption of Aspartame. Favorably reviewed by the American Academy of Family Physicians Foundation.

Everything You Need to Know About Sucralose (EB-2180)

A brochure containing information on the latest science, safety, uses and consumption of Sucralose. Favorably reviewed by the American Academy of Family Physicians Foundation.

Starting Solids: Nutrition Guide for Infants and Children 6 - 18 Months of Age (EB-2020)

This updated brochure has extensive information on transitioning infant feeding from breast milk to solid foods. Brochure includes information from the American Red Cross on what to do if your child is choking. Co-published with the National Association of Pediatric Nurse Practitioners.

Helping Your Overweight Child (EB-2085)

A four page fact sheet filled with practical advice and useful ideas. Tips for improving eating habits include eating fast food less often, trying not to use food as a reward, and avoiding controlling the amount of food a child eats. Healthful snack ideas are listed, as are fun physical activities the whole family can enjoy together. Co-published with the National Institute for Diabetes and Digestive and Kidney Diseases.

Kidnetic.com Leader's Guide (MI-4265)

A Leader's Guide filled with resources, tools and activities to promote healthful eating and physical activity to kids 9-12. Based on material from the healthy eating and active living Web site, Kidnetic.com, this guide can be used by health professionals, health educators, public health professionals and community youth service providers and can be implemented in after-school settings, classrooms, outpatient clinic settings and health departments. Please send me _____ copy (ies) at \$19.95. Enclosed is a check for _____.

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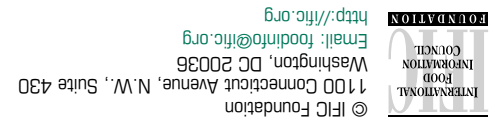
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Current Topics in Food Safety & Nutrition



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