

FOOD Insight™

IFIC Foundation
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The Dietary Guidance Gap: Consumers Know They are Supposed to Do Something - But are Fuzzy on the Details

For more than a year, the U.S. government and a variety of health-related groups have been publicizing new dietary guidance for consumers, including MyPyramid.gov. But is the message getting through?

The inaugural International Food Information Council (IFIC) Foundation Food & Health Survey: Consumer Attitudes toward Food, Nutrition & Health is a rigorous first step in tracking how communication of dietary guidance is impacting consumers, by capturing their understanding of relevant topics such as calorie consumption, the benefits of eating certain dietary fats, and the differences they perceive among various sugars and carbohydrates.

“We’ve found that while consumers are getting the message that they need to make positive dietary and lifestyle changes, putting that advice into practice has been challenging and confusing for many of them,” said Susan T. Borra, RD, President, IFIC Foundation. “In this information-overload environment, the IFIC Foundation Food & Health Survey stands above

the rest by linking what consumers say they understand with what they do regarding dietary guidance put forth by the U.S. Department of Agriculture and the Department of Health and Human Services.”

This finding is only one of the conclusions from the 2006 IFIC Foundation Food & Health Survey, a benchmark study examining consumers’ attitudes on the most pressing food and health issues of the day. The survey is scheduled to be repeated every 12 to 24 months.

“This type of consumer insight is invaluable to those of us who teach about nutrition and health, to dietitians working with people who have chronic nutrition-related diseases, like heart disease, diabetes, osteoporosis, hypertension, and for others who shape public policy,” said Nancy Wellman, PhD, RD, Florida International University and Chair, IFIC Foundation. “Nutrition and wellness information should not be given in a vacuum – advice should adapt to the knowledge level, lifestyle, and needs of the average person.”

Some main highlights from the 2006 IFIC Foundation Food & Health Survey include consumers’ understanding:

Of calorie consumption:

While American consumers are concerned about their weight and frequently look for calorie information on food package labels, nearly nine out of 10 (88 percent) are unable to accurately estimate the number of calories they should eat in an average day. This was one of the most dramatic findings from the survey.

How Many Calories per Day? When asked “how many calories a person your age, weight, and height should consume per day,” 43 percent of respondents would not venture a guess (answering “don’t know” to the question). Of the 57 percent who did provide an estimate, 79 percent incorrectly estimated the number of calories they should consume, based on the USDA’s formula from MyPyramid.gov, which was released in 2005 and bases calorie consumption estimates on factors such as age, gender, and frequency of physical activity.

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Consumer Testing of Dietary Guidance Tools around the World: An International Overview

Communicating science-based nutrition information can be challenging in today's environment where consumers are constantly bombarded with a multitude of conflicting health messages. To help consumers make healthful food choices, it is important to develop dietary guidance tools that are not only consistent with the latest scientific research but are also understood by and applicable to consumers.

Dietary guidance tools include advisory statements or "dietary guidelines" and symbols called "food guides," which visually translate the guidelines into simple food intake patterns. The U.S. currently uses the 2005 Dietary Guidelines for Americans and MyPyramid. The process of designing the image, slogan, and messages of MyPyramid involved a series of focus groups, Web testing, and one-on-one interviews with consumers.

The U.S. is not alone in developing dietary recommendations with input from consumer research. The joint Food and Agriculture Organization (FAO) /World Health Organization (WHO) Consultation on the Preparation and Use of Food-based Dietary Guidelines recommends consumer testing to ensure the appropriateness and cultural acceptability of these tools.

What have other countries done to find out whether their own set of dietary guidelines and food guides resonated with consumers? Food Insight looks into the methods that Mexico, Thailand, and South Africa used to test their nutrition education tools and summarizes the key findings resulting from that process.

Mexico: Baja California's Apple of Health

The "Pyramid of Health" was Mexico's food guide until 1998. When

it was still in use, the Nutrition Institute of the state of Baja California developed a regional food guide called the "Apple of Health." The

Apple was based on the current nutrition research of that time and the typical eating patterns of the Baja California population, whose food supply is influenced by the U.S. (located immediately north of the state). To compare the two food guides, researchers conducted focus group discussions and a "diet design" exercise.

Focus group participants were women from two different education levels. They evaluated the graphic impact, recognition of food groups, recommended servings, meal distribution, and usability of each guide. In the diet design exercise, other sets of participants were randomly assigned to either the Pyramid or Apple—with-out explanations or accompanying text—and were asked to design a 1-day menu plan. This was done to assess consumers' level of comprehension when a specific food guide alone was used.

These tests showed that Mexican consumers, in general, favored the Apple over the Pyramid. A majority of the participants found that the Apple was more visually appealing and provided clearer information about foods (i.e., food identity and the number of suggested servings from each food group and each meal). The mean diet design percentage scores of participants—based on the food groups included in each meal and the correct number of portions—were higher for those who were assigned to the Apple. Although information on



portion size was felt to be missing, most participants agreed that the Apple of Health was the better educational tool for families.

Thailand: The Nutrition Flag

The Thai Nutrition Flag looks like an inverted version of the former USDA Food Guide Pyramid, with the broadest section representing the "rice-starchy food" group on top and the apex, comprised of the "oil, sugar, and salt" group, at the bottom. It specifies a range of recommended servings from each food group. The exact number of servings depended upon three reference energy levels (1600, 2000, and 2400 calories).



Before the Nutrition Flag became the official food guide for the Thai population, it was consumer-tested with another symbol, the Fan, using the central location testing (CLT) method. The CLT is a survey technique in which researchers station themselves in locations that would most likely be frequented by the target groups of the study. The researchers approach people and, if they are willing to participate and fit the study criteria, the survey is administered. The goals of the CLT were to test the cultural appropriateness of the proposed food

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Consumer Testing

guides; assess consumers' understanding of the key concepts (variety, portion, and quantity); and determine consumers' preference between the two symbols.

The five "CLT sites" were located in Bangkok and its suburbs: 1) universities; 2) factories; 3) department stores; 4) fresh food markets, and 5) bus stations. The rationale for selecting these sites was that researchers would be able to recruit participants whose energy needs correspond to the standard levels—the general population, including students and older adults—with further opportunities to sub-sample by age, gender, and settlement (urban and rural). For instance, participants recruited at the bus stations were considered as the rural subgroup because these travelers came from provinces outside of the capital city. Guided by a four-page questionnaire, the researchers screened and interviewed eligible participants, who were shown posters of the food guides.

The CLT showed that consumers were confused with the wording of "portions" in the fruit recommendation, because fruits cannot be measured using household utensils. About 60 percent of the participants did not understand that the range of servings from each food group should still be adjusted for individual energy needs. For example, consumers thought that they can eat all "8 to 12 rice-serving spoons" in a day when the lower limit, 8 rice-serving spoons, actually fits within a 1600 calorie diet and the upper limit, 12 rice-serving spoons, corresponds to a 2400 calorie diet. Consumers preferred the flag over the fan because it was easier to understand and helped them quantify the recommended amounts from each food group.

South Africa: "Stand-Alone" Dietary Guidelines

Historically, dietary guidelines in South Africa have been nutrient-based and targeted at a population

eating a typical Western diet. The Three- and Five Food Group Guides—systems "imported" from the U.S. and the U.K.—were commonly used for nutrition education.

When South Africa began developing its own set of "food-based" dietary guidelines (FBDG) to address the unique nutrition challenges and food patterns of the culturally diverse population, the FBDG Work Group overseeing this task had two main objectives for the consumer testing phase: 1) To assess consumers' comprehension of and ability to apply the FBDG and 2) To assess the compatibility of the food categorization proposed by the FBDG with that of the food guides commonly used in South Africa. These objectives were met using focus groups and semi-structured individual interviews—both of which were subjected to participant observation. This inclusion of a third data collection method, called "triangulation," enhanced the validity of the research by providing a greater understanding of how consumers applied their knowledge of the dietary guidelines.

The focus groups—comprised of a representative sample of women from South Africa's major ethnic groups and rural/urban settlements—were conducted in four out of nine South Africa provinces. Results from these discussions showed that consumers:

- Considered fruit an expensive commodity compared to vegetables
- Were familiar with the term "legumes" but regarded it as uncommon
- Understood the word "fat" to include cooking fats, but not fatty foods and spreads
- Were confused by the guideline "Eat healthier snacks"

Based on these findings, changes were proposed to specific dietary guidelines, namely:

- "Vegetables" should be listed before "fruits" because the former is cheaper and more available

- Actual examples of legumes (e.g. dry beans, peas, lentils) should replace the general term, "legumes"
- Rephrase the guideline, "use fat" to "eat fats" sparingly
- Omit the "eat healthier snacks" guideline but include information on sensible snacking in the explanatory text

The individual interviews included an interactive component in which participants were instructed to demonstrate how they would organize into "piles" colored photographs of foods they personally considered to be similar. This unprompted food categorization exercise yielded remarkable results:

- The common number of piles (n=11) into which participants categorized common foods and beverages as well as the names given to these piles matched all but two of the ten proposed FBDG categories, the exceptions being, "foods from animals" and "legumes."
- The 3- and 5-Food Group Guides were incompatible with the proposed FBDG because the number of food groups, terminologies, and advice implied in these guides did not match the FBDG food categories. Furthermore, the food examples depicted in these guides are not commonly eaten by South African consumers.

These findings suggest that the South Africa FBDG were well understood by consumers and a food guide to complement the FBDG may not be necessary because consumers' personal categorization of foods closely resembles that of the dietary guidelines themselves.

The lessons learned from these international experiences highlight the value of consumer testing. It is worth investing time and resources in this process because it provides insights into consumers' needs, resources, and potential barriers to

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Bird Flu: What Do We Need to Know?

You can't watch television or read a newspaper today without hearing something about bird flu across the globe and about the United States government's efforts to prepare for a potential outbreak of bird flu or for the human version should it mutate to be transmissible from humans to humans. The issue has the potential to be the perfect storm for consumer confusion about animal health, human health, and food safety. So what do we need to know about bird flu?

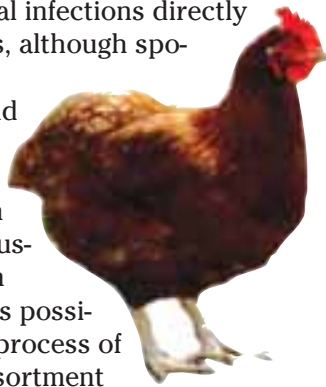
Birds, like people, can have the flu (short for "influenza"). In a bird's case, it is referred to as avian influenza and it was first identified over 100 years ago during an outbreak in Italy. Over the years different forms of the disease have appeared from time to time in regions all over the world including the United States. Avian influenza spreads easily among wild birds, but it can also infect domesticated birds including chickens, turkeys, and ducks. Left untreated, the more virulent forms of avian influenza can devastate an entire flock of domestic birds.

Currently a type of this avian influenza virus is affecting birds and poultry flocks in Europe and Asia. This specific form of influenza is des-

ignated H5N1. The type being reported is highly pathogenic, which means it can spread rapidly among an entire flock of birds causing their death. The United States does not currently have the highly pathogenic form of avian influenza, but the U.S. Department of Agriculture (USDA) is putting safeguards in place to address the "high path" form if the disease should arrive on American shores. Across the globe scientists are carefully monitoring this flu to determine if it can become transmissible among people.

According to the Centers for Disease Control and Prevention (CDC), it is unusual for people to get influenza viral infections directly from animals, although sporadic human infections and outbreaks caused by certain avian influenza viruses have been reported. It is possible that the process of genetic reassortment could occur in a human being who is co-infected with an avian influenza virus and a human strain of influenza virus. Theoretically, people would have little or no immunity to this reassorted influenza virus. This could result in sustained human-to-human transmission and pandemic influenza. Therefore, careful evaluation of influenza viruses recovered from people who are infected with avian influenza is very important to spot reassortment if it occurs.

While some people outside the U.S. have become sick with a form of avian influenza, the H5N1 strain has so far only rarely infected humans.



A clarification of terms: seasonal flu, avian flu and pandemic flu are not the same.

- **Seasonal flu** is a respiratory illness that can be transmitted from person to person. Most people have some immunity and a vaccine is available.
- **Avian flu (bird flu)** is caused by flu viruses that occur naturally among wild birds. The H5N1 strain is deadly to domestic birds and, in unique circumstances, can be transmitted from birds to humans. There is no natural immunity and currently, there is no vaccine available.
- **Pandemic flu** is a virulent human flu that causes global outbreak, or pandemic, or serious illness. Because there is little natural immunity, the disease can spread easily and rapidly from person to person. Currently, there is no pandemic flu anywhere in the world.¹

For the most part, these people probably became infected with avian influenza by inhaling the virus from infected birds or by transferring the virus from contaminated hands to their mouth. The virus is found in bird droppings, nasal secretions, and saliva of infected birds. Bird-to-human transmission most commonly occurs through inhalation of the virus. Although human-to-human transmission is possible, and is being investigated as the cause among seven relatives who developed bird flu in Indonesia, the World Health Organization has stressed that the virus has not mutated into a pandemic form and that these cases were contained within family members who had maximum exposure to each infected relative.

It is important to remember that fully cooked poultry products are safe to consume as the avian flu virus would be destroyed by following recommended cooking temperatures. See recommended cooking information from the U.S. Department of Agriculture listed in this article on page 6.

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The Dietary Guidance Gap

Are All Calories the Same? The survey also revealed that consumers are confused about the extent to which the basic food components like dietary fat, carbohydrates, and protein can contribute to weight gain. Only 29 percent of consumers agreed with the correct statement, “calories in general are what cause weight gain (i.e., all calories are the same).” Of the remaining respondents, 26 percent said calories from fats are most likely to cause weight gain, 20 percent said carbohydrates, and only two percent said protein. Twenty-two percent admitted they were not sure.

Calories Don't Add Up: What makes this confusion somewhat surprising is that among the vast majority of consumers (94 percent) who report ever looking at the Nutrition Facts Panel when deciding which foods and beverages to purchase, calorie information is the most frequently cited (67 percent). However when asked, unaided, what changes they are making to improve the overall healthfulness of their diet, only two percent said “eating fewer calories,” and another 12 percent said “reducing amounts eaten at meals.”

Of their overall health:

While three quarters of consumers (75 percent) describe their overall health status in positive terms, slightly more than half (54 percent) say they are satisfied with their overall health.

Of their overall diet:

Slightly more than half of consumers (54 percent) describe their diet as healthful.

Of dietary fats:

After 20 years of advice from health professionals warning of the health risks associated with consuming too much fat in our diet, there is strong evidence that consumers got this message. Now science suggests that

consumers should not only be eating the right amount of fat, but also the right type.

Concern and Awareness High: About two-thirds of consumers say they are somewhat or very concerned about both the amount and type of fat in their diet.

Highest awareness was of saturated fat (91 percent), vegetable oils—including canola, corn, soybean, and olive oil (86 percent)—also animal fats (83 percent), trans fats (81 percent) and polyunsaturated fats (73 percent) had high consumer awareness. The most confusion exists around polyunsaturated fats, the type of fats considered healthful by health professionals. While consumers indicate high awareness of polyunsaturated fats, close to half say that they are neither healthful nor unhealthful. Nearly half of the consumers polled indicate they are not trying to increase or decrease the amount of fats that they consume.



Of carbohydrates and sugars:

As a consequence of the ongoing debate over low-carbohydrate versus low-fat diets in recent years, the IFIC Foundation research suggests that consumers are still largely confused about the role that carbs play in their diet. On the other hand, consumers are responding to public health advice to consume more fiber and whole grains.

Among the key findings is that one out of five (20 percent) consumers thinks the calories contained in carbohydrates (as opposed to calories in and of themselves) are most likely to cause weight gain.

Consumers are becoming more aware of the role that certain foods or food components may have in promoting health and reducing the risk of disease. A large majority (73 percent) of consumers said that they are trying to consume more fiber and whole grains.

Although a majority of consumers say they are trying to consume less sugars (69 percent) and refined carbohydrates (56 percent), only around one in six consumers reports, on an unaided basis, having actually reduced consumption of sugar.

Of physical activity:

About two-thirds of consumers (64 percent) describe themselves as being active.

Of special interest is the finding regarding where consumers say they get their health information. Ninety-three percent of respondents say they are actively using food and beverage labels, including the Nutrition Facts Panel and product claims, when deciding to purchase or consume a product.

“While the survey confirms that the elements of the food label are useful, it also highlights challenges in the way consumers are interpreting that information,” said Borra. “It may be possible to tweak the delivery of health and nutrition information so it is more digestible to consumers – and more instructive in helping them make the lifestyle changes they tell us they want to make.”

The full report of the IFIC Foundation Food & Health Survey, including supporting data tables for this information can be found at <http://www.ific.org/research/foodandhealthsurvey.cfm>.

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Bird Flu: What Do We Need to Know?

According to the USDA, CDC, and FDA, proper handling and cooking provides protection against avian influenza and other viruses and bacteria such as Salmonella and E.coli. These government groups highly recommend that consumers follow these safe food handling practices every day²:

- Wash your hands with soap and warm water for at least 20 seconds before and after handling raw poultry and eggs.
- Clean cutting boards and other utensils with soap and hot water to keep raw poultry from contaminating other foods.
- Use a food thermometer to make sure you cook poultry to a temperature of at least 165 degrees Fahrenheit. Consumers may wish to cook poultry to a higher temperature for personal preference.
- Cook eggs until whites and yolks are firm.

In the affected countries where avian influenza is predominantly found, infected chickens and ducks are destroyed to reduce the risk of infection to other healthy birds and to minimize any potential risk to human beings. Awareness and education about bird flu has increased around the world. The USDA recognizes the potential threat to animal and human health. It has increased surveillance and monitoring efforts to detect, contain, and eradicate any infected birds before the disease spreads.

It is important to remember that safeguards have been put in place by USDA and other government agencies to prevent avian influenza from spreading among poultry flocks and to prevent any infected poultry or eggs from reaching consumers. Proper cooking techniques, which should always be used to kill harmful bacteria, will also eliminate avian influenza in poultry and eggs should that virus be present.

Other Resources:

The official U.S. government Web site for information on pandemic flu and avian influenza

<http://pandemicflu.gov/>

CDC Key Facts on Avian Influenza

<http://www.cdc.gov/flu/avian/gen-info/facts.htm>

FDA Questions and Answers on Avian Influenza (“Bird flu”) and Food Safety

<http://www.cfsan.fda.gov/~dms/avfluqa.html>

USDA Avian Influenza (Bird flu)

http://www.usda.gov/wps/portal/usdahome?navtype=SU&avid=AVIAN_INFLUENZA

WHO Avian Influenza Frequently Asked Questions,

http://www.who.int/csr/disease/avian_influenza/avian_faqs/en/index.html

¹ Source: [Pandemicflu.gov, avianflu.gov](http://pandemicflu.gov/avianflu.gov)

² Questions and Answers About Avian Influenza (Bird Flu) and Avian Influenza A (H5N1) Virus <http://www.cdc.gov/flu/avian/gen-info/qa.htm>

What's New @ IFIC.org?

Do you know what a conjugated linoleic acid is? Find the definition and many, many more in IFIC.org's Glossary of Food-Related Terms. Visit <http://ific.org/glossary>

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Consumer Testing

behavior change. It validates theoretical assumptions with practical experience. Finally, consumer testing enhances the credibility and efficacy of dietary guidance tools.

Resources:

Food and Agriculture Organization of the United Nations (FAO) Web site

Institute of Nutrition, Mahidol University, Thailand

International Journal of Food Sciences and Nutrition (2002) 53, 163-169.

South African Food-Based Dietary Guidelines Country Report 2004.

Culture-Based Food Guides

Food guides come in a variety of shapes and colors—sometimes reflecting nationalistic themes in their design. Here are some examples:

Japan's Spinning Top



Guatemalan Food Jug



Chinese Pagoda



Beat the Heat with Proper Hydration

Water is the most abundant substance on earth. The human body is composed predominately of water. We simply cannot survive without it, making hydration status an important consideration. So, how do we go about staying properly hydrated?

Obviously, drinking water is an important key to remaining properly hydrated, however we also ingest water in other beverages and in the food we eat. In the U.S., food contributed between 20% to 30% of total water intake, leaving the remaining 70% to 80% of total water intake from beverages.

As stated in the Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate:

Over the course of a few hours, body water deficits can occur due to reduced intake or increased water losses from physical activity and environmental (e.g. heat) exposure. However, on a day-to-day basis, fluid intake, driven by thirst and the consumption of beverages at meals, allows maintenance of hydration status and total body water at normal levels. (FNB 2004)

While few would argue that drinking water is a great way to stay hydrated, far fewer would agree that consuming caffeinated beverages also contributes to hydration. The common perception is that caffeine has dehydrating effects. However, research now shows that coffee, tea, and other caffeine-containing beverages do not negatively affect indicators of hydration in those who are accustomed to consuming caffeine. Therefore, caffeine-containing beverages can be considered as part of daily total water intake.

Normal hydration status can be achieved by consuming a wide range of foods and beverages, including caffeine-containing beverages. So, as the mercury rises this summer remember that proper hydration is easily achieved!

For more information on hydration visit <http://www.ilsina.org/programs/hydration.htm>. To learn more about health, nutrition and food safety visit ifc.org.

ADA Position Statement: Biotechnology in Food Production

The American Dietetic Association (ADA) published an updated position on the use of biotechnology in food production in February 2006 (in effect through 2010): "It is

the position of the American Dietetic Association that agricultural and food biotechnology techniques can enhance the quality, safety, nutritional value, and variety of food available for human consumption and increase the efficiency of food production, food processing, food distribution, and environmental and waste management. The ADA encourages the government, food manufacturers, food commodity groups, and qualified food and nutrition professionals to work together to inform consumers about this new technology and encourage availability of these products in the marketplace." (Journal of the American Dietetic Association. 2006; 106: 285-293)

New IFIC Foundation Publication

Your Personal Path to Health: A Brochure Consumers Can Really Use!

Your Personal Path to Health: Steps to a Healthier You is a new brochure developed cooperatively by U.S. Department of Agriculture, the Food Marketing Institute, and the International Food Information Council Foundation. It helps consumers understand MyPyramid by providing practical tips on how to bring the recommendations of MyPyramid into their everyday lives.



One size doesn't fit all. Keeping in step with the main focus of MyPyramid, the brochure focuses on the individual and his or her personal needs. The brochure includes an easy reference that breaks down recommended servings for the average man and woman. In addition to serving recommendations, readers are also given short take-away tips to help them make healthful food choices and control the amount of food they are consuming.

Even when watching one's weight, sweets and treats can still be a part of a healthy diet. Your Personal Path to Health provides information about how these foods can be incorporated into a healthy diet within calorie limits.

The brochure encourages readers to visit the MyPyramid.gov Web site to obtain more personalized information about calorie needs and to track dietary intake. Your Personal Path to Health can be accessed and downloaded from the IFIC Foundation Web site, <http://ifc.org> or can be ordered singly or in bulk on line at <http://www.ifc.org/publications/orderform.cfm>.

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 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.

Food Ingredients & Colors (EB-2030)

This new 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. Also included are names of popular ingredients found on product labels. Published in partnership with the U.S. Food and Drug Administration.

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Current Topics in Food Safety & Nutrition



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