



Nutrition for Family Living

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November, 2001 Topics

Carbohydrates – Friend or foe?
High-protein diets not proven effective and may pose health risks
National Bone Health Campaign: Powerful Bones, Powerful Girls™
Nutrition in homeless family shelters
FoodReview: Examining the Well-Being of Children
To answer your question: Garlic, anyone?
Food in the News follow-up

Carbohydrates – Friend or foe?

The following articles were published in Journal of Nutrition and were presented as part of a symposium given at the Experimental Biology 2001 meeting.

Choose beverages and foods to moderate your intake of sugars: The 2000 Dietary Guidelines for Americans – What's all the fuss about?

The Dietary Guidelines distinguish between added sugars and other sources of carbohydrates. Added sugars are defined as sugars that are eaten separately at the table, or used as ingredients in processed or prepared foods. This distinction helps consumers identify food and beverages that often provide energy but few vitamins and minerals. The largest source of added sugars in the 1994-1996 CSFII was nondiet soft drinks. Nine specific foods and beverages accounted for 75% of the added sugars in the American diet: soft drinks, fruit drinks, candy, cakes, ice cream, ready-to-eat cereal, sugar and honey, cookies and brownies, and syrups and toppings.

Public health experts recommend limiting added sugars because sugar plays a significant role in the development of dental caries. Other factors that contribute to caries include limited or no access to fluoridated water, fluoride supplements or toothpaste.

High carbohydrate diets, especially high sugar diets, have been associated with cardiovascular disease. NHANES III found that energy-dense, nutrient-poor diets were associated with lower blood levels of HDL cholesterol and higher homocysteine concentrations. Both low HDL cholesterol and high homocysteine levels are risk factors for cardiovascular disease.

It's unclear whether there is a direct link between high sugar intakes and increased obesity rates. Research has shown that obese adolescents and adults are more likely to underreport their intakes, especially their intakes of sugary foods, which makes it difficult to draw conclusions.

It is widely accepted that sugary soft drinks and other sugar-sweetened juices and drinks have replaced milk in the American diet. The impact on the nation's bone health will become clear in the coming years as today's adolescents age. Some studies have shown a relationship between increased soft drink consumption and increased bone fractures in girls, while other studies have not found a relationship between moderate soft drink consumption and bone mineral density (*JADA* 2001;101(9):A47).



Nutrition for Family Living November, 2001

Data from the 1994-1996 CSFII show that people who consumed more added sugars consumed fewer servings of vegetables, fruit and dairy and less vitamin A and calcium. They consumed more servings of grains and lean meat and got more folate, iron and vitamin C.

The bottom line: Scientists do not agree on whether added sugars are harmful. A better nutrient database for added sugars in foods, and more standardized ways of looking at food consumption data, will help resolve the current confusion and controversy. Researchers will also need to address the problem of accuracy in reporting food intake, especially intake of sugary foods.

Johnson RK and Frary C. Choose beverages and foods to moderate your intake of sugars: The 2000 Dietary Guidelines for Americans – What's all the fuss about? J Nutr. 131:2766S-2771S, 2001.

Carbohydrates, appetite and feeding behavior in humans

Since the 1960's, a number of fad diets have blamed dietary carbohydrates for causing weight gain. On the other hand, carbohydrate is stored less efficiently than fat, leading some to believe that a high carbohydrate diet would be less likely to lead to obesity. Another belief is that carbohydrates make people feel more full and less likely to overeat. The emphasis on low-fat, high-carbohydrate diets has become policy in many western nations, and the US Dietary Guidelines recommend that a balance of fat, carbohydrate and protein is best for most healthy adults. This review article reviewed research on carbohydrates and obesity to answer a number of questions.

Does carbohydrate protect against weight gain? Protein is actually more satiating than either carbohydrate or fat. People who overeat on high-fat diets are most likely doing so because the food tastes. Some types of carbohydrate, such as fiber, will make people feel full for a longer time and may make them less likely to overeat. It is more important to consider the person's overall eating patterns, rather than the specific amounts of carbohydrate or fat, if we are trying to help people avoid overeating.

How easy is it to overeat on a high carbohydrate diet? We use the term energy density to refer to the number of calories (energy) per 100 grams of food. Pure carbohydrate provides 4 calories/gram, while pure fat provides 9 calories/gram – so fat is more energy dense. However, many high carbohydrate foods, especially snack foods, also have quite a bit of fat and are quite energy dense – eating even a small amount provides a lot of calories. Studies show that despite the theory that people will feel more full and might stop eating sooner when eating carbohydrates, subjects do overeat and gain weight on diets with lots of good tasting, sugary foods.

Does sugar take the place of fat in the diet? Some have suggested that if people eat more carbohydrates, they will eat less fat and have a lower overall calorie intake. These authors looked at a number of studies and found that when people are given fat or carbohydrate-dense snacks of similar energy density, sweetness and palatability they will overeat and gain weight with either type of snack. Adding carbohydrate to the diet will not crowd out fat or protect against weight gain.

Do carbohydrates make people want to overeat? Sweet, high fat foods are theoretically very likely to stimulate people to overeat. The question is very difficult to study because different people will respond differently and different types of carbohydrates in food will produce different



Nutrition for Family Living November, 2001

results. Subjects on a high-sugar diet ate more calories, but this may have been due to the good taste of sweet foods, rather than some property of the carbohydrates themselves. Other studies using dietary fiber have found that people don't enjoy high fiber foods as much as sugary foods and choose to eat less for that reason.

The bottom line: Regardless of the source, excess calories lead to weight gain. The foods that may help people to take in fewer calories are those that are higher in fiber. However, since people are less fond of high fiber foods, it may be harder for the average person to get this benefit. Nutrition educators can help people find quick, easy, affordable ways to prepare and eat meals that are high in fiber and low or moderate in fat and added sugar.

Stubbs RJ, Mazlan N and Whybrow S. Carbohydrates, appetite and feeding behavior in humans. *J Nutr.* 131:2775S-2781S, 2001.



Nutrition for Family Living November, 2001

High-protein diets not proven effective and may pose health risks

The American Heart Association (AHA) issued a statement about high-protein diets in this month's issue of *Circulation: Journal of the American Heart Association*. Their advisory specifically targets popular quick weight loss diets such as the Atkins, Zone, Protein Power, Sugar Busters and Stillman diets. Many of these diets include high protein foods that are also high in fat, limit fruits and vegetables, and fail to provide enough vitamins, minerals, and fiber.

The AHA points out that there is no scientific research that these diets promote sustained, long-term weight loss, while there is scientific research supporting the AHA's nutritional guidelines. They caution that these diets promote foods such as meat and eggs that are rich in saturated fat which increases the risk of heart disease. Excess animal protein, saturated fat and cholesterol raises LDL cholesterol, and the effect is compounded when one is also limiting fruits, vegetables and fiber. These diets are especially dangerous for people with diabetes because excess protein can speed the progression of diabetic renal disease and limited carbohydrates will influence blood sugar management.

For a press release from the AHA, go to:

www.americanheart.org/Whats_News/AHA_News_Releases/10-08-01_comment2.html

For full text of the article, go to www.circulationaha.org.

StJeor ST et al. Dietary Protein and Weight Reduction: A statement for health care professionals from the Nutrition Committee of the Council on Nutrition, Physical Activity, and Metabolism of the American Heart Association. *Circulation*. 2001;104:1869-1874.



Nutrition for Family Living November, 2001

National Bone Health Campaign: Powerful Bones, Powerful Girls™

The National Bone Health Campaign was launched September 13 to educate and encourage girls ages 9-12 to establish lifelong healthy habits to build and maintain strong bones. The campaign is a partnership of the DHHS Office on Women's Health, Centers for Disease Control and Prevention, and the National Osteoporosis Foundation.

Girls who eat more foods with calcium and who participate in weight-bearing physical activities develop stronger, denser bones. Girls associate this concept with being powerful inside and out. Parents and other adults close to girls play an important role in encouraging girls to take action. This integrated marketing and communication campaign includes paid print and radio advertising for girls and parents, a website for girls (www.cdc.gov/powerfulbones), and collaboration with the Girl Scouts of the USA. Campaign materials can be ordered from powerfulbones@cdc.gov

Nutrition in Homeless Family Shelters

Some new resources are available for educators working with homeless families. "Homeless Family Facility Nutrition Guidelines" lists model nutrition policies and procedures to assist family homeless shelters. These guidelines were developed using survey information, a review of relevant literature and consultation with nutrition and health experts.

"Improving the Nutrition Status of Homeless Children: Guidelines for Homeless Family Shelters" is a detailed report including a summary of relevant literature, an overview of current family shelter nutrition practices culled from an extensive survey, guidelines and recommendations for shelter nutrition practices. It includes an appendix providing print and internet resources, nutrition screening tools and selected examples of "Best Practice" shelters which optimize the nutrition status of children living in family shelters.

While the full report is probably of greater interest to policymakers and administrators, the facility guidelines may give Extension educators some ideas for how to adapt their methods and materials to meet the needs of families and children in shelters.

These materials were developed by the Division of Community Pediatrics, Children's Hospital at Montefiore, Bronx, NY and The Children's Health Fund, New York, NY. You can access them through The Children's Health Fund website at www.childrenshealthfund.org/hfsni.html.



Nutrition for Family Living November, 2001

FoodReview: Examining the Well-Being of Children

The theme for the October, 2001 issue of the Economic Research Service FoodReview is "America's Children." A series of articles discusses the well-being of America's children, children's diet quality, the problem of overweight children in America, foodborne disease among children, the economics of breastfeeding, and food assistance programs that help children and their families. These articles are summaries of research conducted by the Economic Research Service and include recommendations for addressing the problems they identify.

The following are abstracts of two relevant articles. Full text is available at the website below.

American Children's Diets Not Making the Grade

Children are eating out more than ever, posing a growing challenge to the nutritional quality of their diets. Their diets typically contain too much fat, saturated fat, and sodium, and not enough fiber and calcium--characteristics more likely associated with away-from-home foods than home foods. Excess cholesterol and sodium is a problem facing many male teens, while insufficient iron and calcium is a major dietary problem for teenage girls. Children, teens and their parents need to learn to make healthier choices from what is available when they eat out, and to demand a wider range of healthy options for food away from home.

Overweight Children: Is Parental Nutrition Knowledge a Factor?

The growing number of overweight children in the United States has sounded a public health alarm. Overweight children are much more likely to be obese as adults and increase their risk of some chronic diseases. Parents with greater knowledge about and interest in nutrition are less likely to have overweight children. Parents' weight status and their own perception of their weight status can also factor into the prevalence of overweight children and the potential success of interventions.

The Economic Research Service of the USDA provides analyses of the economic issues affecting the nutrition and health of the US population, including food choices, consumption patterns, food prices, food assistance, nutrition education, and food industry structure.

Morrison, Rosanna Mentzer. FoodReview: Examining the Well-Being of Children. *ERS FoodReview* No. 24-2. October 2001.

<http://www.ers.usda.gov/publications/FoodReview/may2001/>



To answer your question: Garlic, anyone?

From the desk of Sherry T.:

At the WNEP annual conference, October 24, 2001, a question came up in regards to why garlic and onions can be considered functional foods. Remember a functional food is a food that has benefits beyond basic nutrition. Below is a summary of a review article entitled "Garlic and onions: their effect on eicosanoid metabolism and its clinical relevance" published in *Prostaglandins, Leukotrienes and Essential Fatty Acids* (2000) 62(2): 55-73 by M. Ali, M. Thomson and M Afzal.

Garlic and onions are among the oldest of plants that we grow for food. Both plants have been used for thousands of years as medicines. They have been shown to be antimicrobial, antitumor, hypolipidemic, antiarthritic, antioxidant and hypoglycemic agents. Even as far back as 1958, an article in *Science* showed that a compound from garlic could inhibit tumor growth. In recent years, use of garlic and onions in the treatment and prevention of cardiovascular disease and cancer has continued to be an area of considerable interest.

What's in garlic and onions that can make them medicine? It seems that the sulfur compounds are the most active in reducing blood cholesterol and the severity of atherosclerosis. Research has shown that garlic in particular has protective effects against stroke, coronary thrombosis, atherosclerosis, platelet aggregation as well as infections and vascular disorders.

So are we to rush out there and start taking garlic tablets or begin sprinkling garlic powder on our meals? The research is mixed on this issue. Due to the variations in methods of preparation, the beneficial effects of various garlic products have varied from no effect to strong effects. Processing of garlic and onion by way of cooking results in a significant reduction of activity. As garlic and onion are normally consumed in cooked food, their effect as preventive herbs in cardiovascular disease is questionable. Maybe if one ate whole fresh garlic daily the effect would be measurable. And it could probably be measurable from a distance!

Epidemiologically, lower risks for cancer were observed in populations that routinely consume garlic and onions. In separate studies lower risks of stomach, prostate, colorectal and brain cancers were found. Therefore, it seems that consumption of garlic and onions may yield some protection from various forms of cancer.

In summary, most studies show that garlic is more potent than onions. The development of garlic preparations that are stable and consistent is still needed. The promotion of fresh garlic as a "drug" is unique because intake for a prolonged period will neither lead to side effects nor to any complications as with other drugs.

Therefore, including these wonderful herbs into our everyday fare certainly has no detrimental effects and may offer benefits. Of course, the best benefits seem to be coming from the fresh products. However, aged garlic products also exhibit antioxidant potential not seen in the fresh products! The bottom line: enjoy it the way that you like it!



Nutrition for Family Living November, 2001

Food in the News follow-up

For those of you who attended the Food in the News presentation at the WNEP conference this month, here are some good search engines and websites for finding answers to consumer nutrition questions (listed in no particular order):

<http://www.pueblo.gsa.gov/> Federal Consumer Information Center. All kinds of good stuff, and not just about nutrition.

http://www.nal.usda.gov/fnic/pubs_and_db.html Food and Nutrition Information Center. Resource lists and fact sheets from USDA about just about any nutrition topic. You can also look at <http://www.nal.usda.gov/fnic/etext/000033.html> for government sites related to nutrition topics. Includes CDC, FDA, USDA, CSREES, NIH, DHHS, and many others.

www.Nutrition.gov Searchable consumer site with links to lots of publications.

<http://navigator.tufts.edu/> Tufts University Nutrition Navigator. Reviews and ranks websites based on the quality of their information.

There are many, many more places to start or continue your search. As I find others, I will continue to update this list and redistribute it periodically. You can also always contact a state specialist, and I encourage you to send me questions I can answer for all as part of the monthly mailing.