Nutrition for Family Living

Susan Nitzke, Nutrition Specialist; susan.nitzke@ces.uwex.edu
Sherry Tanumihardjo, Nutrition Specialist; sherry.tan@ces.uwex.edu
Amy Rettammel, Outreach Specialist; arettamm@facstaff.wisc.edu
Gayle Coleman, Nutrition Specialist; gayle.coleman@ces.uwex.edu
Heather Harvey, Nutrition Specialist; heather.harvey@ces.uwex.edu

August, 2006 Topics

Validation of Behavioral Intent Following a Lesson on Food Group Recommendations

By Mary Jane Getlinger

In the summer of 2005 the United States Department of Agriculture introduced the new MyPyramid and accompanying recommendations for amounts of food from each food group based on an individual's gender, age, and physical activity level. Along with these more personalized recommendations came a change in the units used to measure recommended amounts of food: cups for vegetables, fruit and milk, and ounces for the grains and the meat and beans groups.

To meet the challenge of teaching cups and ounces instead of servings, the Wisconsin Nutrition Education Network developed the "How Much Should I Eat?" lesson for low income and Food Stamp eligible individuals and families. Learners used plates, bowls and utensils to serve food items in amounts they usually eat and then determined the number of cups or ounce equivalents in their typical portion. The retrospective pre-then-post design evaluation questions asked, "Before today, did you pay attention to the amount of food you need from each food group?" and "After today, will you pay **more** attention to the amount of food you need from each food group?"

A total of 213 participants attended the pilot testing of the nutrition lessons at seven sites around Wisconsin serving seniors, WIC and HeadStart. Six weeks after the lesson, 60 of 113 learners who answered initial evaluation questions and provided contact information completed interviews with the validation researcher.

At follow-up, a majority of participants (74%) reported that since the lesson, they pay more attention to the amount of food they are eating from each food group. Many also reported that when deciding how much to eat, they have used the information from this lesson (74%). In addition, more than four of five participants (82%) thought the information would be helpful in the future and about half of the participants (52%) and shared information from this lesson with others.

The purpose of this project was to evaluate the Stepping Up to a Healthy Lifestyle lesson entitled "How Much Should I Eat?" in terms of how well the lesson triggered a meaningful intention to improve behavior. Most participants who stated an intention to change behaviors reported following through with this intention.

You can read the full report at:
https://www.uwex.edu/ces/flp/apps/flrc/team/eating/eval_proj_rpt.pdf

Report on Childhood Obesity: The Future of Children

By Susan Nitzke

The Spring 2006 issue of *The Future of Children* is devoted to the topic of childhood obesity. A series of articles provides research-based advice for parents, educators, policymakers, service providers, the media and other key stakeholders. The collection of articles reviews evidence on changes that may have contributed to the obesity epidemic and gives recommendations on how childhood obesity can be addressed through different sectors of society simultaneously. Recommendations are made for the following settings: market economies, built environments (neighborhoods, roads, buildings, food sources, and recreational facilities), schools, child care, parents, ethnic minority and low-income populations, and medical settings.

An article about the role of parents in childhood obesity summarizes the importance of encouraging healthy eating and activity habits, from gestation through adolescence. It has a special word of caution about the futility and possible harm of urging children, even overweight children, to go on weight-loss diets.

An article on targeting interventions for ethnic minority and low-income populations points out that counseling or educating parents and children about weight control will be almost pointless in environments that work against carrying out recommendations for healthful eating and physical activity. Policies must improve access to healthful foods and physical activity in low-income and minority communities. Policy changes are also needed to improve obesity-related health care for low-income and minority children and to strengthen programs that foster nutritional equity, such as food stamps, school feeding programs, and WIC.

Other key evidence-based recommendations include:

1) Involve both children and parents in obesity-prevention programs.

   Interventions within schools, child care centers, and after-school programs work with both children and their parents, teaching them about nutrition, helping them limit television viewing, and promoting increased physical activity. Although more work is needed to tailor these programs to children of varying ages and demographic groups, evidence indicates that such programs can be effective.

2) Improve nutritional and physical activity standards within schools.

   Many states and local school districts have chosen to impose stricter requirements for foods and beverages offered to students and others during and after the school day. In addition, schools should strengthen physical education (PE) requirements to increase the amount of time students spend in PE classes, and most importantly, the amount of moderate or vigorous activity they engage in during PE classes.

3) Limit children's exposure to advertising.

   Children view thousands of ads each year featuring candy, sugared cereal, and fast food. Children find advertisements persuasive and in turn influence their parents' food purchases. Congress and the Federal Communications Commission could reduce advertising time for non-nutritious foods aimed at children, balance such ads with ads for more healthful foods, or even ban ads for foods that are high in sugar, fat, and calories during children's programming.

4) Improve preventive care and treatment for obesity and related conditions.

Steps should be taken to require public and private health insurance for children to recognize obesity as an illness and to allow it to be treated and covered accordingly.

Implications for Extension Educators: This set of articles and the 2005 Institute of Medicine report on *Preventing Childhood Obesity: Health in the Balance* have extensive background information on what needs to be done to address childhood obesity on every level from individuals and families to national policymakers. This information can be very useful as background to verify the need for educational programs and other interventions in this important area.

Reference:

http://www.futureofchildren.org/pubs-info2825/pubs-info_show.htm?doc_id=349724

An Updated Healthy Eating Index Will Soon Become Available Via MyPyramid.gov

By Susan Nitzke

Dr. Eric Hentges from the U.S. Department of Agriculture spoke at a session on "Dietary Guidance: How is America Measuring Up?" at the Society for Nutrition Education's annual conference in San Francisco on July 16, 2006. His remarks included a preview of the revised Healthy Eating Index that will soon be available at the MyPyramid.gov website. The revised Healthy Eating Index will give one score representing the overall quality of the diet, based on the Dietary Guidelines for Americans, 2005. The score will be based on a combination of factors representing nutrient density (amounts of key nutrients per 1000 calories), the overall mix of food eaten, and how well the diet stays within recommended limits for sodium, solid fats (fats that are high in *trans* and saturated fatty acids), alcohol and added sugars.

AHA's New Diet and Lifestyle Recommendations

By Susan Nitzke

The American Heart Association (AHA) has released new diet and lifestyle recommendations that encourage people to be more active, eat a heart-healthy diet, avoid excessive weight gain and avoid tobacco products.

The new AHA recommendations are meant for adults and children over age 2 in the U.S. and are meant to replace their previous guidelines that were issued in 2000. AHA recommends that Americans reduce dietary fats that are high in saturated fatty acids to less than 7% of calories, reduce *trans* fats to less than 1% of calories, minimize food and beverages with added sugars, emphasize physical activity and weight control; eat a diet rich in vegetables, fruits and whole grains, avoid use of and exposure to tobacco products, and achieve/maintain healthy cholesterol, blood pressure and blood glucose levels.

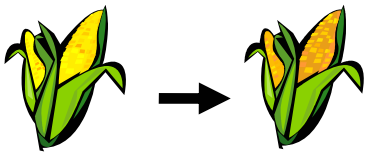
AHA's recommendations include information for consumers on practical topics such as knowing one's caloric needs, food preparation tips and examples of dietary patterns consistent with the new recommendations. The statement also lists ways that practitioners, restaurants, the food industry, schools and local governments can help the general public adopt these recommendations. Examples include displaying caloric content prominently on menus, reducing portion size, limiting *trans* fatty acids and using low-saturated-fatty-acid oils in food preparation.

The AHA recommendations are published in *Circulation: Journal of the American Heart Association* and AHA's website: www.americanheart.org.

Implications for Extension Educators. Most of the new AHA recommendations are consistent with the *Dietary Guidelines for Americans* and *MyPyramid*, but there are a few relatively minor differences. For example, the AHA guidelines include additional guidance on lifestyle factors like smoking and they are stricter or more specific about limits for some things like saturated and *trans* fats.

Biofortified Maize: A Good Source of Vitamin A

By Julie A. Howe and Sherry A. Tanumihardjo



Background: Biofortification is the process of breeding for higher levels of nutrients in food crops. HarvestPlus is a project co-convened by the International Food Policy Research Institute and the International Center for Tropical Agriculture and is funded by multiple donors including the Bill and Melinda Gates Foundation and the United States Agency for International Development. HarvestPlus is an international, multidisciplinary, research program that seeks to reduce micronutrient malnutrition through biofortification of staple crops. Until now, maize has not been considered a good source of provitamin A carotenoids. Maize is one of the staple crops on HarvestPlus' agenda. White varieties, which are preferred in many areas of the world, are practically devoid of carotenoids. Typical yellow varieties have provitamin A carotenoids ranging from ~1-3 micrograms/gram dry weight and some biofortified orange varieties have more than 20 micrograms/gram. Carrots are the best source of provitamin A with beta-carotene concentrations of 130 micrograms/gram fresh weight. Although maize has much less provitamin A than carrots, it is often consumed in much greater quantities.

Lutein, zeaxanthin, alpha-carotene, beta-cryptoxanthin, and beta-carotene are the major carotenoids in maize. Lutein and zeaxanthin predominate, but they are not precursors to vitamin A. They are beneficial to health as antioxidants and may protect against age-related macular degeneration. Beta-carotene, beta-cryptoxanthin, and alpha-carotene are the main precursors to vitamin A. Bioavailability of provitamin A carotenoids from foods is considered to be poor and the currently accepted conversion factors for dietary provitamin A proposed by the Institute for Medicine are 12 micrograms beta-carotene, 24 micrograms alpha-carotene, or 24 micrograms beta-cryptoxanthin to 1 microgram retinol.

Current research: Two studies investigated the contribution of provitamin A carotenoids in maize to vitamin A stores in an animal model. The first study compared the beta-carotene in biofortified maize with supplements of vitamin A and beta-carotene. The second study investigated the effect of two types of maize at two maize levels on vitamin A stores. The first study showed that biofortified maize was as good a source of vitamin A as beta-carotene supplements. Conversion factors for provitamin A carotenoids in maize and beta-carotene supplements were ~3 micrograms beta-carotene to 1 microgram retinol. The conversion factor obtained from maize was much less than the value proposed by the Institute of Medicine (*i.e.*, 12:1) and the values estimated for typical carrots (10:1). The much lower conversion factor observed suggests that the bioavailability of provitamin A carotenoids from maize is better than that of other foods. The second study used typical yellow maize and a high-beta-carotene orange variety at two levels in the diet. Results showed a significant improvement in vitamin A status of the gerbils with orange maize compared with yellow maize, regardless of the amount of maize in the diet. This research indicates that by switching to a variety of maize with a higher provitamin A content vitamin A status could be improved.

The bottom line: The higher oil content of maize compared with other provitamin A-rich foods probably increases absorption. Despite its expected low vitamin A value, biofortified maize can significantly contribute to vitamin A stores when fed as a staple food. Consumption of yellow and orange maize should be encouraged in countries that consume white maize to improve intake of provitamin A and beneficial antioxidants. Amazingly, a single dietary change of switching from one color to another could impact nutrition.

Reference:

Howe, J.A. and Tanumihardjo, S.A. Carotenoid-Biofortified Maize Maintains Adequate Vitamin A Status in Mongolian Gerbils. *Journal of Nutrition* 2006: (in press).

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