

Nutrition Perspectives

UC Davis Department of Nutrition, UC Agriculture and Natural Resources, and Center for Nutrition in Schools

Confusing Food Labels Place Consumers with Food Allergy at Risk

A study found that consumers with food allergy concerns often misunderstand food labels about allergens that say “may contain” or “manufactured on shared equipment.” While they should avoid such products to prevent what could be a serious allergic reaction, up to 40 percent bought food items with precautionary allergen labels (1).

Food allergy affects approximately 8 percent of children and up to 2 percent of adults. Almost 40 percent of children with food allergy have experienced at least one life-threatening reaction.

The study, published in the *Journal of Allergy and Clinical Immunology: In Practice*, surveyed 6,584 consumers in the U.S. and Canada on their purchasing habits of food products with various

labels about possible allergen exposure due to food processing. Most participants were caregivers of a food-allergic child, while the rest had food allergy themselves.

“Our findings underscore the challenges people with food allergies face in deciding if a food product is safe to eat,” said senior author Ruchi Gupta, MD, MPH,

pediatrician and researcher at Ann & Robert H. Lurie Children’s Hospital of Chicago and Associate Professor of Pediatrics and Medicine at Northwestern University Feinberg

School of Medicine. “Currently, precautionary allergen labeling is voluntary and the statements used lack consistency, making it more confusing for consumers. They also do not reflect how much allergen is in the product, which is something consumers need to know to assess food allergy risk.”

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A third of respondents incorrectly believed that precautionary allergen statements, such as “manufactured on shared equipment” are based on the amounts of allergen in the product.

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Food Allergy (Continued from page 1)

Consumers had many misconceptions about precautionary labeling. A third falsely believed that precautionary allergen statements are based on the amounts of allergen in the product. Almost half believed that this type of food labeling is required by law, which is not the case.

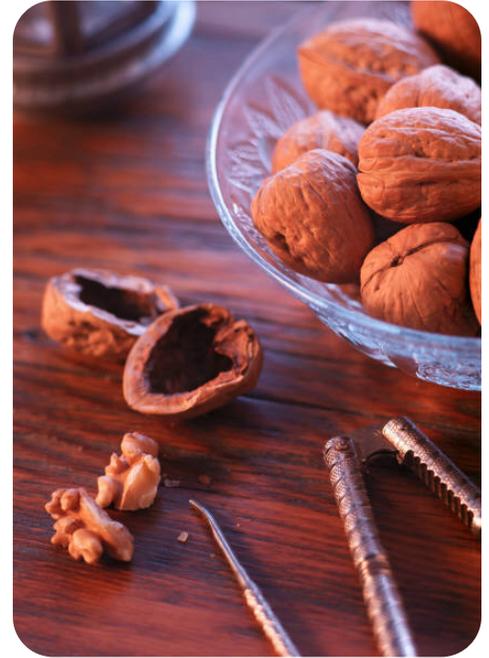
The laws in the U.S. and Canada require labeling if a major food allergen is an intended ingredient. In the U.S., these include wheat, egg, milk, peanut, fish, crustaceans, soy and tree nuts. Canadian regulation also adds sesame, mollusks and mustard. Neither country requires labeling about unintended presence of allergens in foods as a result of processing on shared equipment, although many food manufacturers include a variety of precautionary statements on labels.

Purchasing habits varied depending on the precautionary phrase used on the label. Fewer respondents (11 percent) bought food with “may contain” labeling, while many more (40 percent) bought a product with “manufactured in a facility that also processes” statement.

“There is clearly a need for regulation and standardization of precautionary allergen labeling to help consumers make safe food choices,” said Gupta.

The study was led by Food Allergy Research & Education (FARE) and Food Allergy Canada.

“It’s clear that we need more consistency and transparency on ingredient labels on food. These findings also reinforce our recommendations about avoiding foods with precautionary labeling for a particular food regardless of the wording,” said James R. Baker, Jr., MD, CEO of Food Allergy Research & Education.



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Reference:

1. Marchisotto MJ, Harada L, Kamdar O et al. Food Allergen Labeling and Purchasing Habits in the United States and Canada. J Allergy Clin Immunol Pract. 2016 Nov 3. pii: S2213-2198(16)30420-2. doi: 10.1016/j.jaip.2016.09.020.

Source: Lurie Children’s Hospital of Chicago News and Events; Nov 1, 2016; https://www.luriechildrens.org/en-us/news-events/Pages/confusing_food_labels__404.aspx

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Sheri Zidenberg-Cherr, Ph.D., Nutrition Specialist, Anna M. Jones, Ph.D., and staff prepare NUTRITION PERSPECTIVES. This newsletter is designed to provide research-based information on ongoing nutrition and food-related programs. It is published quarterly (four times annually) as a service of the UC Davis Center for Nutrition in Schools, the University of California Agriculture and Natural Resources and the United States Department of Agriculture. NUTRITION PERSPECTIVES is available online, free of charge, at <http://nutrition.ucdavis.edu/perspectives>. Questions or comments on articles may be addressed to: NUTRITION PERSPECTIVES, Department of Nutrition, University of California, Davis, CA 95616-8669. Phone:(530) 752-3387; FAX: (530) 752-8905.

Television Cooking Shows Overlook Safe Food Handling Practices

Forty-eight million cases of foodborne illness are reported annually in the United States, including 3,000 deaths, according to the Centers for Disease Control and Prevention. These illnesses can result from improper food safety practices in retail settings, but illness from food prepared at home is also a concern; yet, little is known about illness from consumer practice. Television cooking shows are an important resource for home cooks, but if these shows fail to model recommended food safety measures, it may lead to poor practices among consumers. Therefore, researchers from the University of Massachusetts Amherst devised a study to assess food safety on television food shows and determine whether they present positive or negative models for viewers (1).

Adherence to food safety practices by consumers has declined in recent years. For example, fewer consumers reported washing hands before handling food, cooking to required temperatures, or separating meat and poultry from ready-to-eat foods in 2011 than in 2008 or 2010. Only 33 percent of consumers said they trusted the government for food safety information, whereas more than half trusted media. An overwhelming majority (73 percent) obtained food safety information from media, and 22 percent of those used cooking shows as their primary source of information. Likewise, in a poll of television viewers, 50 percent of respondents watched some television cooking shows, and 57 percent reported purchasing items based on those shows.

To study food safety on television cooking shows, researchers developed a 19-question survey. The survey was adapted from the Massachusetts Food Establishment Inspection Report and measured hygienic food practices, use of utensils and gloves, protection from contamination, and time and

temperature control. In addition, whether food safety practices were mentioned was recorded. A panel of state regulators and food safety practitioners participated in the assessment, viewing 10 popular cooking shows, with two to six episodes per show watched for a total of 39 episodes.

“The majority of practices rated were out of compliance or conformance with recommendations in at least 70 percent of episodes and food safety practices were mentioned in only three episodes,” said lead author Nancy L. Cohen, PhD, RD, LDN, FAND. “Only four practices were observed to be in

compliance or conformance with recommendations in more than 50 percent of the episodes. For most behaviors observed, the percentage of shows in conformance with recommended practices was much lower than that seen in restaurant employees and consumers in general.”

Although the assessment showed many issues regarding food safety on television cooking shows, room for improvement was easily identified by the researchers. For instance, steps toward improvement could include requiring food safety



A panel of state regulators and food safety practitioners assessed 10 popular cooking shows, with two to six episodes per show watched for a total of 39 episodes.

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Suggestions for steps toward improvement include requiring food safety training for chefs and contestants, incorporating food safety as a judging criterion in competitions, and incorporating food safety in scripts.

training for chefs and contestants, modifying the structural environment to support safe food handling, incorporating food safety as a judging criterion in competitions, and incorporating food safety in scripts.

“There are many opportunities on cooking shows to educate the public regarding safe food handling practices and help reduce the incidence of foodborne illness,” Cohen said. “Similarly, nutrition and food safety educators could work with the media to produce shows that demonstrate positive food safety behaviors and educate consumers about food safety practices as they adopt recipes.”

Reference:

1. Cohen NL, Olson RB. Compliance With Recommended Food Safety Practices in Television Cooking Shows. *J Nutr Educ Behav.* 2016 Nov - Dec;48(10):730-734.e1. doi: 10.1016/j.jneb.2016.08.002.

Source: Elsevier Press Releases; Nov 8, 2016; <https://www.elsevier.com/about/press-releases/research-and-journals/television-cooking-shows-overlook-safe-food-handling-practices>

USDA Boosts Healthy Food Access, Sets New Standards for SNAP Retailers

U.S. Department of Agriculture (USDA) Secretary Tom Vilsack announced final changes to increase access to healthy food choices for participants in the Supplemental Nutrition Assistance Program (SNAP). The provisions in this rule require SNAP authorized retail establishments to offer a larger inventory and variety of healthy food options (1).

"This final rule balances the need to improve the healthy staple foods available for purchase at participating stores, while maintaining food access for SNAP recipients in underserved rural and urban areas," said Vilsack. "We received many helpful comments on the proposed rule and have modified the final rule in important ways to ensure that these dual goals are met. I am confident that this rule will ensure the retailers that participate in SNAP offer a variety of healthy foods for purchase and that SNAP recipients will continue to have access to the stores they need to be able to purchase food."



For an establishment to be eligible as a SNAP retailer, they must now offer a minimum of 84 foods.

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The final rule provides long overdue updates to SNAP retailer eligibility criteria. Previously, a retailer could be authorized to participate in the program with a minimum inventory of 12 items. Now, the number of required food items is expanded to a minimum of 84. These changes are in keeping with the primary purpose of the program.

USDA extended the comment period for the proposed rule to ensure all interested parties had the opportunity to bring their voice to the final rule, and made significant changes to respond to those comments. The final rule announced today incorporates feedback from over 1,200 comments received and ensures the new standards will balance commenters' concerns.

In particular, in the final rule multiple ingredient foods will continue to count towards retailer eligibility. In addition, the existing regulatory requirement that specifies the threshold of hot and cold prepared foods sold that makes a location an ineligible restaurant (rather than an eligible SNAP retailer) is far more flexible than in the proposed rule. Now the requirement is nearly the same as the requirement that has been in place for some time with only a modest change to account for foods heated and consumed on site after purchase.

Changes to the definition of accessory foods ensure that stores are not able to participate in SNAP by selling primarily snack foods. At the same time, the definition of variety has been expanded to make it easier for stores to meet the new requirements mandated by the Agricultural Act of 2014, and the number of each variety of staple food items retailers must have in stock has been halved as compared to the proposed rule from six to three.



Stores that primarily sell snack foods are not able to participate in SNAP.

For more information about this final rule, please visit: <http://www.fns.usda.gov/snap/enhancing-retailer-standards-supplemental-nutrition-assistance-program-snap>.

USDA has taken many steps in the last several years to strengthen SNAP and increase access to healthy foods. Recently, USDA sought retailer volunteers for a two-year, nationwide pilot to enable SNAP participants to purchase their groceries online. USDA also provided funding to incentivize participants in SNAP to purchase more healthy fruits and vegetables through the Food Insecurity Nutrition Incentive Program, increased farmers market participation in SNAP to improve access to fresh and nutritious food, and announced a purchase and delivery pilot, which is designed for non-profits and government entities to improve access to groceries solely for homebound elderly and disabled SNAP participants.

As the nation's first line of defense against hunger, SNAP helps put food on the table for millions of low income families and individuals every month and is critical in the fight against hunger. SNAP is a vital supplement to the monthly food budgets of about 45 million low-income individuals. Nearly half of SNAP participants are children, 10 percent are elderly and more than 40 percent of recipients live in households with earnings. SNAP plays an important role in reducing both poverty and food insecurity in the United States—especially among children. SNAP is an effective and efficient health intervention for low-income families with a positive impact on children beginning before birth and lasting beyond childhood years, improving health, education, and economic outcomes.

Study Suggests Federal School Lunch Guidelines May Lead to Healthier Choices in the Lunch Line

Federal school lunch guidelines enacted in 2012 are improving nutrition for school-age children and reducing childhood obesity, according to a new study co-authored by a University of Florida Institute of Food and Agricultural Sciences faculty member (1).

UF/IFAS assistant professor of food and resource economics Jaclyn Kropp — along with economists at Georgia State University, Clemson University and the U.S. Food and Drug Administration—worked with a county school food services director to develop a novel research model to study school lunch choices children make, combining lunch sales data collected at the cafeteria register with data on student absences.

They investigated how the nutritional content of National School Lunch Program entrées chosen by students varied across different socioeconomic and demographic groups and impacted their health.

When healthier menu items replaced less healthy items, researchers found the total calories of the students' lunch choices decreased about 4 percent. Calories from fat decreased 18 percent, and those from sodium decreased by 8 percent.

“The key finding is that while students prefer less-healthy school lunch options, income constraints, particularly for those students receiving free and reduced-price meals, cause these students to

continue participating in the school lunch program and, hence, these students consume healthier meals,” Kropp said.

Students more likely to participate in free- and reduced-price lunch programs are among the same populations most likely to suffer from obesity and related health risks, said Janet Peckham, an economist in the Office of the Commissioner at the U.S. Food and Drug Administration and lead author of the study.

In another key finding, students who received free lunches were more likely to choose entrées with a higher fat content and less likely to select entrées with higher

sodium content, the study showed. Students paying full price were more likely to reject entrées high in fat and choose those higher in sodium. They were also more responsive to increases in protein and more frequently replaced their cafeteria choices with lunches from home.

Nearly 32 million students are served more than 5 billion lunches in a school day in the United States. More than two-thirds of these meals are free- and reduced-price lunches that follow school lunch program guidelines. Federal school lunch program nutrition standards require greater availability of fruits, vegetables, whole grains and fat-free or low-fat milk and a reduction in saturated fats and sodium.

The study is published in the *American Journal of Agricultural Economics*.



Following implementation, students selected meals with 4 percent fewer calories and 18 percent fewer calories from fat. However, consumption data was not collected.
Photo by USDA, <https://flic.kr/p/psT21X>

Reference:

1. Peckham JG, Kropp JD, Mroz TA, et al. Socioeconomic and Demographic Determinants of the Nutritional Content of National School Lunch Program Entrée Selections. *Am J Agr Econ*; Aug 27, 2016; doi:10.1093/ajae/aaw062.

Source: Brad Buck. Institute of Food and Agricultural Sciences and University of Florida News; Oct 13, 2016; <http://news.ifas.ufl.edu/2016/10/ufifas-researcher-study-shows-federal-school-lunch-guidelines-lead-to-healthier-choices/>

Providing Interventions during Pregnancy and After Birth to Support Breastfeeding Recommended

The U.S. Preventive Services Task Force (USPSTF) recommends providing interventions during pregnancy and after birth to support breastfeeding. The report appears in *JAMA* (1).

This is a B recommendation, indicating that there is high certainty that the net benefit is moderate, or there is moderate certainty that the net benefit is moderate to substantial.

There is convincing evidence that breastfeeding provides substantial health benefits for children and adequate evidence that breastfeeding provides moderate health benefits for women. However, nearly half of all mothers in the United States who initially breastfeed stop doing so by 6 months, and there are significant disparities in breastfeeding rates among younger mothers and in disadvantaged communities. To update its 2008 recommendation, the USPSTF reviewed the evidence on the effectiveness of interventions to support breastfeeding on breastfeeding initiation, duration, and exclusivity. The USPSTF also briefly reviewed the literature on the effects of these interventions on child and maternal health outcomes.

The USPSTF is an independent, volunteer panel of experts that makes recommendations about the effectiveness of specific preventive care services such as screenings, counseling services, and preventive medications.

Primary care clinicians can support women before and after childbirth by providing interventions directly or by referral to help them make an

informed choice about how to feed their infants and to be successful in their choice. Interventions include promoting the benefits of breastfeeding, providing practical advice and direct support on how to breastfeed, and providing psychological support. Interventions can be categorized as professional support, peer support, and formal education, although none of these categories are mutually exclusive, and interventions may be combined within and between categories. Interventions may also involve a woman's partner, other family members, and friends.

Effectiveness of Interventions to Change Behavior

Adequate evidence indicates that interventions to support breastfeeding increase the duration and rates of breastfeeding, including exclusive breastfeeding.

Harms of Interventions to Change Behavior

There is adequate evidence to bound the potential harms of interventions to support breastfeeding as no greater than small, based on the nature of the intervention, the low likelihood of serious harms, and the available information from studies reporting few harms.



"There is convincing evidence that breastfeeding provides substantial health benefits for children and adequate evidence that breastfeeding provides moderate health benefits for women."

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Breastfeeding (Continued from page 7)



Implementation

Not all women choose to or are able to breastfeed. Clinicians should, as with any preventive service, respect the autonomy of women and their families to make decisions that fit their specific situation, values, and preferences.

Summary

The USPSTF found adequate evidence that interventions to support breastfeeding, including professional support, peer support, and formal education, change behavior and that the harms of these interventions are no greater than small. The USPSTF concludes with moderate certainty that interventions to support breastfeeding have a moderate net benefit for women and their children.

Reference:

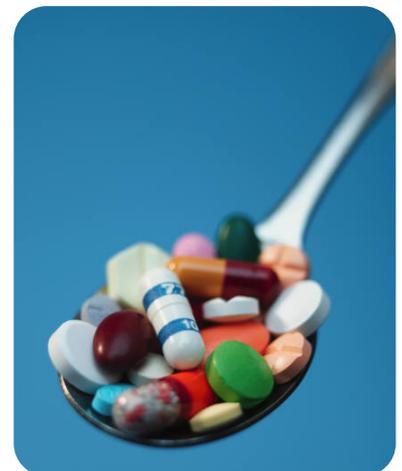
1. Patnode CD, Henninger ML, Senger CA, et al (editors). Primary Care Interventions to Support Breastfeeding: Updated Systematic Review for the U.S. Preventive Services Task Force [Internet]. U.S. Preventive Services Task Force Evidence Syntheses, Formerly Systematic Evidence Reviews. Rockville (MD): Agency for Healthcare Research and Quality (US); 2016 Oct. Report No.: 15-05218-EF-1.

Source: JAMA News Releases; Oct 25, 2016; <http://media.jamanetwork.com/news-item/providing-interventions-during-pregnancy-and-after-birth-to-support-breastfeeding-recommended/>

Use of Dietary Supplements Remains Stable in U.S.; Multivitamin Use Decreases

A nationally representative survey indicates that supplement use among U.S. adults remained stable from 1999-2012, with more than half of adults reporting use of supplements, while use of multivitamins decreased during this time period, according to a study appearing in *JAMA* (1).

Dietary supplement products are commonly used by adults in the United States, with prior research indicating an increase in use between the 1980s and mid-2000s. Despite extensive research conducted on the role of dietary supplements in health, little is known about recent trends in supplement use. Elizabeth D. Kantor, Ph.D., of Memorial Sloan Kettering Cancer Center, New York, and colleagues used data from the National Health and Nutrition Examination Survey (NHANES) to examine trends in supplement use among U.S. adults from 1999 through 2012, with a focus on use of any supplement products and multivitamins/multiminerals (MVM); defined as a product containing 10 or more vitamins and/or minerals), as well as use of individual vitamins, minerals, and nonvitamin, nonmineral



*Multivitamin use declined
from 37 to 31 percent
between 1999 and 2012*

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supplements. Participants were surveyed over 7 continuous 2-year cycles.

A total of 37,958 adults were included in the study (average age, 46 years; women, 52 percent), with a response rate of 74 percent. Overall, the use of supplements remained stable between 1999 and 2012, with 52 percent of U.S. adults reporting use of any supplements in 2011-2012. Use of MVMM decreased, with 37 percent reporting use in 1999-2000 and 31 percent reporting use in 2011-2012. Vitamin D supplementation from sources other than MVMM increased from 5.1 percent to 19 percent and use of fish oil supplements increased from 1.3 percent to 12 percent over the study period, whereas use of a number of other supplements decreased, including vitamins C, E, and selenium.

Trends varied across age, sex, race/ethnicity, and education.

“With the present data, it is clear that the use of supplements among U.S. adults has stabilized. This stabilization appears to be the balance of several opposing trends, with a major contributing downward factor being the decrease in use of MVMM,” the authors write.

In an accompanying editorial, Pieter A.

Cohen, M.D., of the Cambridge Health Alliance, Cambridge, and Harvard Medical School, Boston, writes, “What are the conclusions from this new analysis? It is now well documented that more than half of U.S. adults use supplements. Physicians should include supplements when they review medications with all patients and also consider supplements when symptoms raise the possibility of a supplement-related adverse effect. It is now known that many supplements contain pharmaceutically active botanicals, which can have important clinical effects” (2).

“For example, red yeast rice, yohimbe, and caffeine all have pharmacological effects, and although ephedra has been banned, a variety of synthetic drugs have replaced ephedra as stimulants in many sports and weight loss supplements. Reporting suspected adverse effects of supplements is also critical. The FDA relies on physicians and consumers to report adverse events via MedWatch to remove hazardous supplements from the marketplace.”

“The current study by Kantor et al should also lead funders and legislators to reconsider their priorities with respect to supplements. Given the current regulatory framework, even high-quality research appears to have only modest effects on supplement use. Future efforts should focus on developing regulatory reforms that provide consumers with accurate information about the efficacy and safety of supplements and on improving mechanisms for identifying products that are causing more harm than good.”



The dietary supplements with the largest increases in use between 1999 and 2012 included vitamin D and fish oil.

References:

1. Kantor ED, Rehm CD, Du M, et al. Trends in Dietary Supplement Use Among US Adults From 1999-2012. JAMA. 2016 Oct 11;316(14):1464-1474. doi: 10.1001/jama.2016.14403.
2. Cohen PA. The Supplement Paradox: Negligible Benefits, Robust Consumption. JAMA. 2016 Oct 11;316(14):1453-1454. doi: 10.1001/jama.2016.14252.

Source: JAMA News Releases; Oct 11, 2016; <http://media.jamanetwork.com/news-item/use-of-dietary-supplements-remains-stable-in-u-s-multivitamin-use-decreases/>

High-Protein Diet Curbs Metabolic Benefits of Weight Loss

Dieters sometimes consume extra protein to stave off hunger and prevent loss of muscle tissue that often comes with weight loss.

But in a study of 34 postmenopausal women with obesity, researchers at Washington University School of Medicine in St. Louis found that eating too much protein eliminates an important health benefit of weight loss: improvement in insulin sensitivity, which is critical to lowering diabetes risk (1).

The findings are available in the journal *Cell Reports*.

“We found that women who lost weight eating a high-protein diet didn’t experience any improvements in insulin sensitivity,” said principal investigator Bettina Mittendorfer, professor of medicine. “However, women who lost weight while eating less protein were significantly more sensitive to insulin at the conclusion of the study. That’s important because in many overweight and obese people, insulin does not effectively control blood-sugar levels, and eventually the result is type 2 diabetes.”

Insulin sensitivity is a good marker of metabolic health, one that typically improves with weight loss. In fact, the women in the study who lost weight while consuming less protein experienced a 25 to 30 percent improvement in their sensitivity to insulin.

Mittendorfer and her colleagues studied 34 women with obesity who were 50 to 65 years of age. Although all of the women had body mass

indices (BMI) of at least 30 — a BMI of 30 or more indicates significant obesity — none had diabetes.

The participants were randomly placed into one of three groups for the 28-week study. In the control group, women were asked to maintain their weight. In another group, the women ate a weight-loss diet that included the recommended daily allowance (RDA) of protein: 0.8 grams per kilogram of body weight. For a 55-year-old woman who weighs 180 pounds, that would come to about 65 grams of protein per day.

In the third group, the women ate a diet designed to help lose weight, but they consumed more protein, taking in 1.2 grams per kilogram of body weight, or almost 100 grams for that same 180-pound woman.

“We provided all of the meals, and all the women ate the same base diet,” Mittendorfer explained. “The only thing we modified was protein content, with very minimal changes in the amount of fat or carbohydrates. We wanted to hone in on the effects of protein in weight loss.”

The researchers focused on protein because in postmenopausal women, there is a common belief that consuming extra protein can help preserve lean tissue, keeping them from losing too much muscle while they lose fat.

“When you lose weight, about two-thirds of it tends to be fat tissue, and the other third is lean tissue,” Mittendorfer said. “The women who ate more protein did tend to lose a little bit less lean



Improved insulin sensitivity is an important health benefit of weight loss, but it was not observed in the intervention group consuming a higher-protein diet.

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High-Protein (Continued from page 10)



More research is needed to determine if similar results occur in men or women with type 2 diabetes.

tissue, but the total difference was only about a pound. We question whether there's a significant clinical benefit to such a small difference."

The women who ate the recommended amount of protein saw big benefits in metabolism, led by a 25 to 30 percent improvement in their insulin sensitivity. Such improvements lower the risk for diabetes and cardiovascular disease. The women on the high-protein diet, meanwhile, did not experience those improvements.

"Changing the protein content has very big effects," Mittendorfer said. "It's not that the metabolic benefits of weight loss were diminished — they were completely abolished in women who consumed high-protein diets, even though they lost the same, substantial amounts of weight as women who ate the diet that was lower in protein."

It's still not clear why insulin sensitivity didn't improve in the high-protein group, and Mittendorfer said it's not known whether the same results would occur in men or in women already diagnosed with type 2 diabetes. She plans to continue researching the subject.

Reference:

1. Smith GI, Yoshino J, Kelly SC, et al. High-Protein Intake during Weight Loss Therapy Eliminates the Weight-Loss-Induced Improvement in Insulin Action in Obese Postmenopausal Women. *Cell Rep.* 2016 Oct 11;17(3):849-861. doi: 10.1016/j.celrep.2016.09.047.

Source: Jim Dryden. Washington University in St Louis; Oct 11, 2016; <https://source.wustl.edu/2016/10/high-protein-diet-curbs-metabolic-benefits-weight-loss/>

Healthy Recipes and Effective Social Marketing Campaign Improve Eating Habits

The Food Hero social marketing campaign is an effective way to help low-income families eat more nutritious meals through fast, tasty, affordable and healthy recipes, two new research studies from Oregon State University have found (1).

Food Hero was launched by the OSU Extension Service in 2009 in an effort to encourage healthy eating among low-income Oregonians. The initiative includes several components, such as a website, www.foodhero.org, with information in both English and Spanish; Food Hero recipe taste-tasting events in schools and communities across Oregon; and a library of healthy recipes that have all been

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The campaign's strategy includes clearly focused, positive, and realistic messages, written in plain language.

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taste-tested and many approved by children.

“The success of the program is by far exceeding the scope of what we envisioned when we started,” said Melinda Manore, a professor of nutrition in the College of Public Health and Human Sciences at OSU and co-author of the studies. “Getting people to change their diet and eating behavior, especially when they do not have much money, is very difficult, and this program is helping to do that.”

The social marketing program is led by Lauren Tobey of Extension Family and Community Health at OSU, and Tobey is lead author of the studies. Food Hero is funded by the U.S. Department of Agriculture Food and Nutrition Service’s Supplemental Nutrition Assistance Program – Education, or SNAP-Ed. SNAP-Ed focuses on obesity prevention within low-income households.

One of the new studies, published in the journal *Nutrients*, explores how Food Hero was developed and tested. The goal of the program is to increase fruit and vegetable consumption among those eligible for SNAP benefits in Oregon, with a particular focus on low-income mothers.

The campaign’s strategy includes providing clearly focused messages, writing in plain language, being positive and realistic with the messaging, and offering simple tools for action that include an explanation of what to do and how to do it. The campaign has been effective in part because educators stayed focused on their target audience, the researchers said.



The recipes developed by the Food Hero project are healthy, cost-effective, and many are kid-approved.

The other study, published in the *Journal of Nutrition Education and Behavior*, examines Food Hero’s recipe project in more depth. The recipes used in the Food Hero campaign are formulated to be healthy, tasty and kid-friendly. To date, the Food Hero recipes have been accessed millions of times via the website and social media sites such as Pinterest.

“All of the recipes are simple to make and cost-effective for families on tight budgets,” Tobey said. “Many families can’t afford to have a recipe fail or try an untested recipe the family may not end up liking.”

The recipes also are being tested with children who complete surveys or participate in a vote. If at least 70 percent of participating children say they “like the taste” of a recipe, it is considered “kid-approved.” The program has collected more than 20,000 assessments from kids who have tried Food Hero recipes at school or

at community events. About 36 percent of the tested recipes have received the “kid-approved” rating to date.

“When our nutrition educators say to the children, ‘Would you like to try this for us and tell us what you think?’ it empowers them,” Manore said. “It also is a way to expose kids to foods they may not have tried before.”

Parents and caregivers are also surveyed after their children participate in tasting exercises. Of those who completed surveys, 79 percent said their child talked about what they had learned in school about healthy eating; 69 percent reported that their child asked for specific recipes; and 72 percent

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Social Marketing (Continued from page 12)

reported making at least one Food Hero recipe, the research showed.

As Food Hero's tips, tools and recipes get shared in person, online, through the media and via social media, the program's reach also expands beyond the initial audience, the researchers said. Recipes from the program are now being used around the world, and in 2015, the recipes on the Food Hero website received more than 290,000 page views.

Anyone interested can also subscribe to Food Hero Monthly, an electronic magazine that includes recipes and tips. To sign up, visit

<https://foodhero.org/monthly-magazine>.

In addition to their collaborations with Oregon partners such as the Department of Human Services, Department of Education and Oregon Health Authority, Food Hero program leaders are sharing materials and ideas with public health and SNAP-Ed programs in other states.

"Since 95 percent of the Food Hero recipes contain fruits and/or vegetables, people who try the recipes are helping us meet the primary goal of the campaign, which is to encourage more fruit and vegetable consumption, especially among low-income families," Tobey said.

References:

1. Tobey LN, Koenig HF, Brown NA, and Manore MM. Reaching Low-Income Mothers to Improve Family Fruit and Vegetable Intake: Food Hero Social Marketing Campaign-Research Steps, Development and Testing. *Nutrients*. 2016 Sep 13;8(9): pii: E562. doi: 10.3390/nu8090562.
2. Tobey LN, Schrupf E, Johnson T, et al. Can Healthy Recipes Change Eating Behaviors? The Food Hero Social Marketing Campaign Recipe Project Experience and Evaluation. *J Nutr Educ Behav*. 2016 Oct 15. pii: S1499-4046(16)30783-7. doi: 10.1016/j.jneb.2016.09.001.

Source: Michelle Klampe. Oregon State University News Releases; Nov 3, 2016. <http://oregonstate.edu/ua/ncs/archives/2016/nov/healthy-recipes-and-effective-social-marketing-campaign-improve-eating-habits>

Want to Optimize Those 10,000 (Or Fewer) Steps? Walk Faster, Sit Less



"A good target for healthy adults is 150 minutes per week spent at 100 or more steps per minute."

That popular daily target of 10,000 steps is a worthwhile goal, but a new study at Oregon State University suggests that if you find that unattainable, don't despair - a smaller number, especially at moderate or greater intensity, can lead to health benefits too (1).

It's especially helpful if 3,000 of the steps come at a brisk pace, and limiting sedentary time also plays a role in healthy readings for cholesterol and other risk factors.

The average American takes between 5,000 and 7,000 steps per day, researchers say.

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“Some physical activity is better than none, and typically more is better than less,” said John Schuna Jr., assistant professor of kinesiology in OSU's College of Public Health and Human Sciences.

“When it comes to steps, more is better than fewer, and steps at higher cadences for a significant amount of time are beneficial. A good target for healthy adults is 150 minutes per week spent at 100 or more steps per minute. And in terms of time spent sedentary, less is better – you want to spend as little time not moving as possible within reason.”

Schuna, lead author Catrine Tudor-Locke of the University of Massachusetts and six other researchers analyzed data from 3,388 participants age 20 and older in a National Health and Nutrition Examination Survey.

Their findings were recently published in the journal *Medicine & Science in Sports & Exercise*.

The research builds on earlier studies, many of which relied on self-reported estimates of activity levels, which tend to run high, or accelerometer data using proprietary output measures (e.g., activity counts/minute), and also failed to take cadence – steps per minute – into account. A cadence of 100 steps per minute or greater is widely accepted as the threshold for moderate-intensity activity in adults.

In addition to minute-by-minute step data, the researchers looked at relationships between step-defined physical activity and various cardiometabolic risk factors for the survey

participants – such as waist circumference, blood pressure, fasting glucose, insulin, and cholesterol levels, as well as body mass index.

Among male participants, only the highest quintile – the top one-fifth – had a median of more than 10,000 steps per day, checking in at 12,334. Among women, the top quintile's median was 9,824.

Beyond just total step counts, the research looked at daily “peak 30-minute cadence” – the average number of steps in a participant's most vigorous 30 minutes, which weren't necessarily consecutive minutes. To measure sedentary time, researchers used the percentage of accelerometer time per day that showed no step-based movement.

Among all survey participants, only the top quintile had a median peak cadence – 96 steps per minute – that was in line with accepted physical activity guidelines of 30 minutes a day at 100 steps per minute.

Nevertheless, analysis across all quintiles showed a strong relationship between higher cadences – walking more briskly as opposed to less briskly – and favorable numbers in the cardiometabolic risk categories.

The same held true for number of steps, whether above or below the 10,000-step threshold. And higher percentages of sedentary time were



Analysis showed a strong relationship between higher cadences – walking more briskly as opposed to less briskly – and favorable numbers in the cardiometabolic risk categories even when participants did not meet current physical activity recommendations for 150 minutes per week of moderate to vigorous activity.

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linked to less-favorable values in several risk factors.

While FitBit, Garmin and other fitness trackers might be responsible for the current 10,000-step fixation, Schuna notes that the magic number's roots trace to 1960s Japan. From a fitness craze inspired by the 1964 Tokyo Olympics sprang the first commercial pedometer, the manpo-kei. In Japanese, manpo-kei literally means "10,000 steps meter."

"One of the questions has always been, what if one person with 10,000 steps per day accumulates nearly all of them in a two-hour time block, and another stretches them over 15 hours – does it matter in terms of health effects?" Schuna said.

"This is a big debate in the field, with a couple of intertwined questions. Current evidence does suggest that moderate to vigorous activity and sedentary time have a certain amount of independence from each other in terms of health effects. But if you're getting two or three hours of moderate to vigorous activity every day, even if you're relatively sedentary the rest of the time, it's hard to imagine the sedentary time would completely ameliorate or wipe out the health benefits associated with that level of activity."

Reference:

1. Tudor-Locke C, Schuna JM Jr, Han H, et al. Step-based Physical Activity Metrics and Cardiometabolic Risk: NHANES 2005-06. *Med Sci Sports Exerc.* 2016 Sep 23.

Source: Oregon State University News Releases; Oct 13, 2016; <http://oregonstate.edu/ua/ncs/archives/2016/oct/want-optimize-those-10000-or-fewer-steps-walk-faster-sit-less>

A person who averages 10,000 or more steps/day typically accumulates at least 150 minutes a week of moderate to vigorous activity, Schuna said.



Current physical activity guidelines suggest that aerobic activity should be accumulated in bouts of at least 10 minutes in duration.

"Now there is an additional caveat regarding the manner in which physical activity is accumulated to meet current physical activity guidelines, which states that aerobic activity should be accumulated in bouts of at least 10 minutes in duration," he said. "If we take this into consideration, it becomes more difficult to determine whether or not someone is meeting the physical activity guidelines using step counts alone. That aside, averaging 10,000 or more steps/day puts you in the top 15 percent of adults in terms of step-defined physical activity."

Schuna envisions a future in which wearable fitness trackers will feature apps that make minute-by-minute data available to the user, as research-grade accelerometers now do to scientists.

"That's along this paradigm of personalized medicine," he said. "In the future, everyone will have his or her genome sequenced, and from that we'll be looking for specific markers that predispose people to higher risks for certain conditions. The physical activity and sleep data we collect from wearable devices will be used to track compliance to individualized behavior prescriptions while attempting to optimize each individual's health."

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