

Nutrition Perspectives

University of California at Davis, Department of Nutrition, Cooperative Extension, and Center for Health and Nutrition Research

Shaping Healthy Choices Program Improves Eating Habits, Lowers BMI

The percentage of overweight or obese children in test schools dropped from 56 percent to 38 percent over the course of a single school year, thanks to a new nutrition program developed and tested in the classroom by nutrition researchers at the University of California, Davis.

The new program fits into the new Common Core educational standards.

“The education component of this program is intended to help children develop nutrition-related problem solving skills,” said co-author Jessica Linnell, a senior doctoral candidate in the UC Davis Department of Nutrition. “We think that these skills, combined with knowledge about foods, may be critical in order for children to make healthy choices.”

Researchers say the



Hands-on learning in school gardens was a key component of the Shaping Healthy Choices Program.

program could be adopted nationally at little cost to schools. The program was pilot-tested for this study in schools located in Sacramento and Stanislaus counties. Study findings were reported recently during the Experimental Biology 2014 meeting.

“When we designed the study, we anticipated short-term outcomes such as kids having more knowledge of nutrition or being able to identify more vegetables,” said Rachel Scherr, assistant project scientist in the UC Davis Department of Nutrition and one of

the study's lead investigators. “We always had a long-term goal of decreasing body mass index, but we didn't anticipate that it would happen in such a short timeframe, so we are thrilled.”

In a randomized control study, the researchers found that

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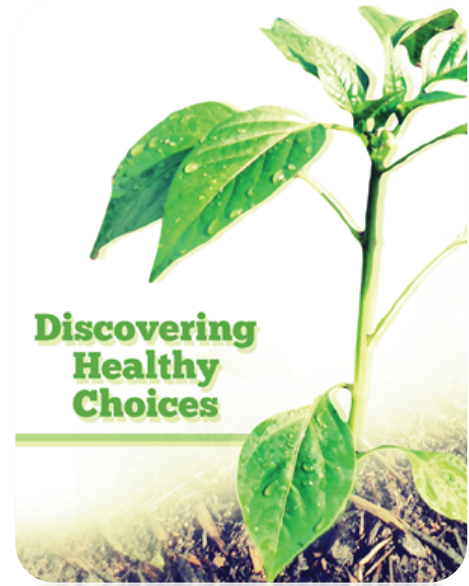
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fourth-graders who participated in the nutrition program ate substantially more vegetables and lowered their body mass index during the school year that the nutrition program was implemented.

Senior author Sheri Zidenberg-Cherr, a Cooperative Extension nutrition specialist and co-director of the UC Davis Center for Nutrition in Schools, said that the project could not have been possible without the work of a highly interdisciplinary team, including collaborators from University of California Agriculture and Natural Resources; the UC Davis departments of Nutrition, Human Ecology, Population Health and Reproduction, and Plant Sciences; the UC Davis Health System, Betty Irene Moore School of Nursing, Foods for Health Institute and Agricultural Sustainability Institute; and the University of Utah Department of Physics and Astronomy.

More information on the Shaping Healthy Choices Program can be found on the Center for Nutrition in Schools website, at <http://cns.ucdavis.edu>.



Discovering Healthy Choices, the curriculum used in this program, is a learner-centered adaptation of the award-winning curriculum, Nutrition to Grow On.

Adapted from UC Davis News; May 5, 2014; http://news.ucdavis.edu/search/news_detail.lasso?id=10914

Science of School Lunch: Pictures Tell Story About Lunch Policies, Healthy Consumption



Using herbs and veggies from the school garden is one way schools in Vermont are improving lunch offerings.

In terms of ambience, Charlotte Central's cafeteria is -- well, conjure up your own elementary school lunch experience. There's more than one reason to run to recess. But on a recent visit to observe a group of researchers from UVM's Johnson Lab, the school was serving up something more likely to be found on a restaurant menu: risotto with mushrooms and peas. It's the result of a host of programs by schools around Vermont to offer more tempting choices -- with locally sourced ingredients when possible, including herbs and vegetables from the playground garden -- and to get children to eat more healthfully. But is it working?

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Sheri Zidenberg-Cherr, Ph.D., Nutrition Specialist, Anna 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 Health and Nutrition Research, the University of California Cooperative Extension 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.

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That's what Rachel Johnson, Robert L. Bickford Jr. Green and Gold Professor of Nutrition and Food Sciences at the University of Vermont, along with her research team, is trying to find out. And they aren't alone in their concern. Since Fall 2012, USDA regulations require students across the country to take a fruit or vegetable with their lunch, a good intention that might easily go to the garbage.

To get answers about what actually happens to those dressed up peas and mushrooms -- or the obligatory apple next to the mac and cheese -- the Johnson Lab has developed state-of-the-art digital imaging to measure consumption, a method just validated by a paper published in the *Journal of the Academy of Nutrition and Dietetics* (1).

The researchers, Johnson's "army of undergraduates," image children's trays when they leave the line and then again when they're finished eating. They've already weighed and photographed a correct portion of each fruit and vegetable item offered, as well as analyzed recipes to determine how much fruit and vegetable a serving contains.

Back at the lab, visually comparing the composite before and after photos alongside the comparison data, researchers can accurately determine consumption within two grams, a statistically valid but much less labor-intensive means of assessing dietary intake compared to the current gold standard of individually weighing portions selected before a child can eat against plate waste. The time saved allows for a much larger sample size.

"Now we're exploring ways to employ the

method," says Johnson's doctoral student Sarah Amin. In Charlotte she's leading a new study to evaluate whether non-researchers -- parents, teachers, community volunteers -- can be trained to collect the data with equally valid results. The process involves taking the tray image at an accurate angle for later analysis, while also capturing the number on lanyards that participating children wear to track the trays.

If the research is successful, explains Amin, it has broad implications for collecting data on a larger scale, including Web-based training that could be done anywhere. "There are amazing interventions to get kids to eat more fruits and vegetables -- farm-to-school programs, school gardens -- and we know that exposure to foods helps develop preference for those foods -- so we're interested in accurately measuring what they're eating," says Johnson. "I would love for our lab to become the go-to place in the country to help evaluate the efficacy of these interventions."

In another study from the Johnson Lab, led by Amin and published this spring in *the Journal of Child Nutrition and Management*, researchers found that the fruits and vegetables that students are choosing at lunch are largely processed versions, primarily 100 percent fruit juice and high calorie entrees such as pizza and lasagna, with the tomato in the sauce qualifying as a vegetable (2).

But Johnson is optimistic that over time, with the introduction of appealing whole fruits and vegetables into familiar favorites, for instance, that kids will come around. Research associate Bethany Yon, in a study recently published in the *Journal of*



Digital imaging of lunches is method of measuring consumption using before and after photos of student trays.

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School Health, in fact, has shown that it's worked with flavored milk (3). When the dairy industry, in advance of impending regulations, started to reformulate flavored milk, traditionally high in both fat and sugar content, they did so incrementally, by reducing either fat or sugar to lower calories. Yon's work, using shipment data as a proxy for consumption, has shown that, after some small blips, milk consumption has stayed consistent. "It was nice to see," she says, "that small, subtle changes go unnoticed overall by students."

That milk, as Johnson has known since her earliest days as a researcher, is critical. As people first became concerned about childhood obesity, Johnson started looking at beverage consumption and how that impacted the overall quality of a child's diet. Between 1940 and the 1990s, she says, the curve makes a big X with soft drink consumption going up and milk consumption going down. "We were one of the first to sound this alarm," she says, "showing that when kids don't have milk at lunch they don't come close to meeting their dietary needs -- and the beverages displacing milk add empty calories."

Today, with 101-peer-reviewed papers in

Reference:

1. Taylor JC, Yon BA, Johnson RK. Reliability and Validity of Digital Imaging as a Measure of Schoolchildren's Fruit and Vegetable Consumption. *J Acad Nutr Diet*. 2014 Sep;114(9):1359-66. doi: 10.1016/j.jand.2014.02.029. Epub 2014 Apr 19.
2. Yon BA, Johnson RK, Linda Berlin L. School Nutrition Directors' Perspectives on Flavored Milk in Schools. *J Child Nutr Manage*. 2013; 37(1).
3. Yon BA, Johnson RK. Elementary and middle school children's acceptance of lower calorie flavored milk as measured by milk shipment and participation in the National School Lunch Program. *J Sch Health*. 2014 Mar;84(3):205-11. doi: 10.1111/josh.12135.

Source: Lee Ann Cox. University of Vermont Communications; May 20, 2014; <http://www.uvm.edu/~uvmpr/?Page=news&&storyID=18566>

scientific journals, 12 book chapters and funded grants and contracts totaling nearly \$3.5 million, Johnson puts both her authoritative research credentials and her talent for translating the science into action, serving,



While the fruits and vegetables that students are choosing at lunch are largely processed versions, Johnson is optimistic that over time, with the introduction of appealing whole fruits and vegetables that kids will come around.

among other posts, as spokesperson for the American Heart Association, whose nutrition committee she chairs. But she remains particularly concerned with the health of children. Most recently, Johnson worked with NBC News to develop the nutrition content for the network's new website Parent Toolkit, which recently won a 2014 Webby award.

And she sees, at least in places that have been aggressive about making changes, a hopeful trend in terms of reducing childhood obesity. Good policy, Johnson believes, will herald the shift. "We've worked on education policy changes, physical activity standards, new regulations in schools about limiting food marketing to kids, about using food for fundraisers," she says. "There are a lot of new Federal regulations and policies being put in place.

"I think we're going to see a new world in the next ten to fifteen years that's going to blow us away when we look back," Johnson says. "At my kids' high school there were banks of vending machines with soft

Banning Chocolate Milk in School Cafeterias Decreases Sales and Increases Waste

For many children eating school lunch, chocolate milk is a favorite choice. What would happen if chocolate milk were banned from school cafeterias? “Students take 10 percent less milk, waste 29 percent more and may even stop eating school meals,” says Andrew Hanks, PhD.

In a recent article published in *PLOS ONE*, researchers for the Cornell Center for Behavioral Economics in Child Nutrition Programs (B.E.N. Center), reported results from data collected at 11 Oregon elementary schools where chocolate milk had been banned from the cafeterias and replaced with skim milk (1). While this policy eliminated the added sugar in chocolate milk, there were unexpected nutritional and economic backlashes.

The new Cornell Food and Brand Lab study by Andrew Hanks, David Just, and Brian Wansink, found that eliminating chocolate milk from the elementary schools decreased total milk sales by 10 percent, indicating that many students substituted white for chocolate milk. Even though more students were taking white milk, they wasted 29 percent more than before. Nutritionally, after the milk substitution, students on average consumed less sugar and fewer calories, but also consumed less protein and calcium.

Additionally, the ban may have been a factor in a 7 percent decrease in District’s Lunch Program participation.



This study found that eliminating chocolate milk from school cafeterias in Oregon resulted in fewer students buying milk, and among those who did, more milk wasted.

Removing flavored milk from cafeterias decreases added sugar, yet the economic and nutritional costs warrant reconsidering a less restrictive policy. Nicole Zammit, former Assistance Director of Nutrition Services at Eugene School District, was not surprised that banning chocolate milk had negative consequences. She had this to say, “Given that the role of the federal school meal program is to provide nutritious meals to students who may otherwise have no access to healthy foods— I wouldn’t recommend banning flavored milk unless you have a comprehensive plan in place to compensate for the lost nutrients when kids stop drinking milk altogether.”

In conclusion, co-author and Director of the Cornell Food and Brand Lab, Brian Wansink recommends, “There are other ways to encourage kids to select white milk without banning the chocolate. Make white milk appear more convenient and more normal to select. Two quick and easy solutions are: Put the white milk in the front of the cooler and make sure that at least 1/3 to 1/2 of all the milk is white.”

Reference:

1. Hanks AS, Just DR, Wansink B. Chocolate milk consequences: a pilot study evaluating the consequences of banning chocolate milk in school cafeterias. *PLoS One*. 2014 Apr 16;9(4):e91022. doi: 10.1371/journal.pone.0091022. eCollection 2014.

Source: Andrew Hanks. Cornell University Food and Brand Lab; April 16, 2014; <http://foodpsychology.comell.edu/op/chocomilk>

Nutrition Education Program Improves Preschoolers' At-Home Consumption of Vegetables, Low-Fat/Fat-Free Milk

A nutrition education program in low-income child care centers can improve a child's at-home consumption of vegetables and low-fat/fat-free milk, according to a study by researchers from RTI International, Altarum Institute, and the U.S. Department of Agriculture (1). The study was supported by the USDA's Food and Nutrition Service.

The study, published in the *Journal of the Academy of Nutrition and Dietetics*, is the first to examine and find that a multicomponent nutrition-education program for low-income preschool-aged children and parents in a child care setting can affect a child's at-home diet.

"Many preschool-aged children are not meeting the recommended daily amount of fruits, vegetables, and low-fat and fat-free dairy products," said Pam Williams, Ph.D., senior research scientist in RTI's Center for Communication Science and co-author of the study. "Our research shows the potential value of nutrition education programs that take place in child care centers to impact what children eat at home."

The USDA recommends that children two to five years of age eat one to two cups of vegetables daily and one to 1.5 cups of fruit each day. Nearly 60 percent of U.S. children ages three to five years old attend a center-based child care program, according to the U.S. Department of Education, which can provide an opportunity to improve the nutrition of

preschool-aged children.

Researchers found that children who participated in the nutrition-education program were about 39 percent more likely to drink or use low-fat/fat-free milk on their cereal than children who were not exposed to the program. The study also found a significant increase in the number of cups of vegetables that these children consumed at home each day.



This found that children who participated in the child care-based intervention increased the amount of vegetables they ate at home.

The study examined the State of New York's Eat Well Play Hard in Child Care Settings nutrition-education program administered by registered dietitian nutritionists in low-income child care settings. The initiative is part of the Supplemental Nutrition Assistance Program (SNAP) Education program

aimed at increasing children's consumption of fruits and vegetables, and encouraging children to drink low-fat/fat-free milk.

Researchers sampled 24 child care centers that serve low-income families and receive reimbursement for meals and snacks served, as part of the USDA's Child and Adult Care Food Program in New York. Twelve child care centers took part in an intervention, consisting of multilevel messaging targeted to preschoolers, parents and child care staff.

As part of the program, registered dietitian nutritionists provided nutrition education to both

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children and parents during a six- to ten-week period. Parents were asked to complete a mail or telephone survey at the beginning and end of the program to report their child's at-home consumption of fruits, vegetables and milk.

At the child care centers, children participated in 30-minute nutrition education classes about trying new foods, eating a variety of vegetables and fruit, using healthier dairy products, and eating healthier snacks. Nutritionists also provided training sessions to child care center staff about identifying areas of policy needed to improve nutrition at the center, and how to incorporate messages about nutrition into the classroom.

While children's vegetable and low-fat/fat-free milk consumption improved, the study found that the program did not have a significant impact on parental offerings of fruits and vegetables, or fruit consumption since most children were already



Fruit consumption was unchanged in this study; most children were already close to meeting the recommendation.

Reference:

1. Williams PA, Cates SC, Blitstein JL, et al. Nutrition-education program improves preschoolers' at-home diet: a group randomized trial. *J Acad Nutr Diet*. 2014 Jul;114(7):1001-8. doi: 10.1016/j.jand.2014.01.015. Epub 2014 Mar 22.

Source: RTI International Newsroom; June 26, 2014; <http://www.rti.org/newsroom/news.cfm?obj=4A47F7F8-E534-E24F-A03D7D9F2C6966DE>

'Often and Early' Gives Children a Taste for Vegetables



Exposing infants to vegetables early in life may be more successful than attempting to introduce novel vegetables to older children.

Exposing infants to a new vegetable early in life encourages them to eat more of it compared to offering novel vegetables to older children, new research from the University of Leeds suggests (1).

The researchers, led by Professor Marion Hetherington in the Institute of Psychological Sciences, also found that even fussy eaters are able to eat a bit more of a new vegetable each time they are offered it.

The research, involving babies and children from the UK, France and Denmark, also dispelled the popular myth that vegetable tastes need to be masked or given by stealth in order for children to eat them.

Professor Hetherington said: "For parents who

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wish to encourage healthy eating in their children, our research offers some valuable guidance.

“If you want to encourage your children to eat vegetables, make sure you start early and often. Even if your child is fussy or does not like veggies, our study shows that 5-10 exposures will do the trick.”

In the study, which was funded by the EU, the research team gave artichoke puree to 332 children from three countries aged from weaning age to 38 months. During the experiment each child was given between five and 10 servings of at least 100g of the artichoke puree in one of three versions: basic; sweetened, with added sugar; or added energy, where vegetable oil was mixed into the puree.

There was also little difference in the amounts eaten over time between those who were fed basic puree and those who ate the sweetened puree, which suggests that making vegetables sweeter does not make a significant difference to the amount children eat.

Younger children consumed more artichoke

Reference:

1. Caton SJ, Blundell P, Ahern SM, et al. Learning to eat vegetables in early life: the role of timing, age and individual eating traits. *PLoS One*. 2014 May 30;9(5):e97609. doi: 10.1371/journal.pone.0097609. eCollection 2014.

Source: University of Leeds Research News; May 30, 2014;
http://www.leeds.ac.uk/news/article/3534/often_and_early_gives_children_a_taste_for_vegetables

than older children. This is because after 24 months children become reluctant to try new things and start to reject foods – even those they previously liked. Among the children, four distinct groups emerged.



After 24 months, children become reluctant to try new things and start to reject foods. It can take as many as 5 to 10 exposures to get a fussy child to like something new.

Most children (40 percent) were “learners” who increased intake over time. Of the group, 21 percent consumed more than 75 percent of what was offered each time and they were called “plate-clearers”. Those who ate less than 10g even by the fifth helping were classified as “non-eaters”, amounting to 16 percent of the cohort, and the remainder were classified as “others” (23 percent) since their pattern of intake varied over time. Non-eaters, who tended to be older pre-school children, were the most fussy, the research found.

Globe artichoke was chosen as the sample vegetable because, as part of the research, parents were surveyed and artichoke was one of the least-offered vegetables. NHS guidelines are to start weaning children onto solid foods at six months.

The research has been published in the journal *PLOS ONE*.

Possible Link Between Saccharine and Glucose Intolerance

Humans have an innate fondness for sweetness. Unfortunately, these sweet-tasting foods usually come with a high calorie load and are not very nutrient dense. Non-calorie artificial sweeteners (NAS) were created to provide a way to have that sweet craving fulfilled without the calorie bomb. Non-calorie artificial sweeteners have become popular in the food supply due to their low price, minimal calorie value, perceived health benefits for weight loss, and potential for improving blood glucose levels. However, there mixed results for these alleged health benefits.

Most NAS directly interact with the populations of bacteria that live in our intestines, also called gut microbiota. The microbiota has an important role in helping balance many physiological processes. Previous research has suggested diet can change the composition and the way the microbiota work in the body. (1-4). Suez, et al. investigated how NAS impacts the microbiota and how this in turn may impact the way the body regulates glucose (5).

To look at the effects on glucose homeostasis under normal conditions, common NAS formulations (saccharin, sucralose, or aspartame) were added to the drinking water of lean mice. After 11 weeks, the mice that drank water containing NAS, particularly the saccharin-consuming group, displayed marked glucose intolerance when

compared with controls. To determine if this finding applies to obese mice, mice were fed a high fat diet while consuming either saccharin, or the control (pure glucose). The reason pure glucose was used as the control is because commercially-available saccharin in products such as Sweet'n Low contains glucose in addition to saccharin. Like the mice that ate a normal diet, mice fed a high fat diet and with saccharin developed glucose intolerance.

To isolate saccharin's effects, a group of 10-week old mice were fed a high fat diet supplemented with 0.1 mg per mL of saccharin added to drinking water to mimic the FDA acceptable daily intake for saccharin in humans. After only 5 weeks, the saccharin-consuming mice showed significant glucose intolerance.

The researchers then treated the mice consuming NAS with an antibiotics regimen to see if the microbiota played a role in the effect NAS had on glucose intolerance. After 4 weeks of antibiotics, the changes in glucose intolerance between NAS-drinking mice and controls were eliminated. The authors suggest that one explanation for this is that NAS-induced glucose intolerance is modulated through changes to the microbiota.

The researchers then wanted to see how changing the gut microbiota might have an impact.



According to the American Diabetes Association, over 29 million Americans have diabetes, and 86 million have impaired glucose tolerance.

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To do this, the researchers used fecal transplantation to populate the intestines of germ-free mice with the bacteria from the saccharin-consuming mice or the glucose-consuming mice. This resulted in impaired glucose tolerance in the germ-free mice that received microbiota from the mice that had been consuming saccharin.

When comparing the DNA of the gut bacteria with gene sequencing, the researchers found that the saccharin-consuming mice had a distinct microbiota composition compared to the mice that didn't consume saccharine. The saccharin-consuming mice also had substantial imbalance in their microbiota. The gene sequencing showed an increase in pathways were previously linked to obesity in mice and humans. Conversely, glucose transport pathways were reduced in saccharin-consuming mice, which has been shown to be associated with type 2 diabetes in previous studies.

In vitro stool cultured with saccharin were transferred to germ-free mice and caused significantly higher glucose intolerance. Taken together, these results suggest saccharin directly affects the composition and function of the microbiota and may cause microbial imbalance, resulting in glucose intolerance.

Human NAS consumption was next investigated. To find potential causality between human NAS consumption and blood glucose control, a small sample of seven healthy volunteers, who do not usually consume NAS, were studied for

1 week. On days 2–7, the volunteers consumed the FDA's maximal acceptable daily intake of saccharin. Although the exposure was only 7 days and the sample was small, four out of seven of the

volunteers developed significantly poorer glycemic responses 5–7 days after NAS consumption. These four were termed 'NAS responders' and the three volunteers, who did not exhibit any change, were termed 'NAS non-responders.' To investigate how the microbiota in the volunteers might play a role, stool from NAS responders and NAS non-responders were transferred into germ-free mice. The mice given NAS responder stool displayed significant glucose intolerance, whereas the mice given NAS non-responder stool had normal glucose tolerance.

Collectively, these results suggest that NAS consumption, in both mice and humans, might increase the risk of glucose intolerance by changing the composition and function of the microbiota. Further, humans may exhibit a personalized response to NAS, which may be due to

differences in the microbiota. However, because this study looked at how NAS affected only seven people and only for one week, more research is needed with a larger sample of people to determine if this is the case in a larger group. Personalized nutrition may be the key to a flourishing microbiota and preventing many multi-factorial diseases. Future studies should be done to investigate this possibility.



NAS consumption might increase the risk of glucose intolerance in some by changing the composition and function of the microbiota.

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Glucose (Continued from page 10)

References:

1. He X, Marco ML, Slupsky CM. Emerging aspects of food and nutrition on gut microbiota. *J Agric Food Chem*. 2013 Oct 9;61(40):9559-74. doi: 10.1021/jf4029046. Epub 2013 Sep 27.
2. Claesson MJ, Jeffery IB, Conde S, et al. Gut microbiota composition correlates with diet and health in the elderly. *Nature*; Jul. 13, 2012; 488: 178–184.
3. Ley RE, Tumbaugh PJ, Klein S, et al. Microbial ecology: Human gut microbes associated with obesity. *Nature*; Dec. 21, 2006; 444: 1022–1023.
4. Qin J, Li Y, Cai Z, et al. A metagenome-wide association study of gut microbiota in type 2 diabetes. *Nature*; Oct. 4, 2012; 490: 55–60.
5. Suez J, Korem T, Zeevi D, et al. Artificial sweeteners induce glucose intolerance by altering the gut microbiota. *Nature*; Sept. 17, 2014.

Source: Deborah Fetter, UC Davis Department of Nutrition.

Common Herbal Supplement Can Cause Dangerous Interactions with Prescription Drugs

St. John's wort, the leading complementary and alternative treatment for depression in the United States, can be dangerous when taken with many commonly prescribed drugs, according to a study by researchers at Wake Forest Baptist Medical Center (1).

The researchers reported that the herbal supplement can reduce the concentration of numerous drugs in the body, including oral contraceptive, blood thinners, cancer chemotherapy and blood pressure medications, resulting in impaired effectiveness and treatment failure.

"Patients may have a false sense of safety with so-called 'natural' treatments like St. John's wort," said Sarah Taylor, M.D., assistant professor of dermatology at Wake Forest Baptist and lead author

of the study. "And it is crucial for physicians to know the dangers of 'natural' treatments and to communicate the risks to patients effectively."



The herbal supplement St John's wort can interact with many different prescription drugs, reducing concentrations in the body and impairing effectiveness.

The study is published in the *Journal of Alternative and Complementary Medicine*.

To determine how often S. John's wort (SJW) was being prescribed or taken with other medications, the team conducted a retrospective analysis of nationally representative data collected by the National

Ambulatory Medical Care Survey from 1993 to 2010. The research team found the use of SJW in potentially harmful combinations in 28 percent of the cases reviewed.

Possible drug interactions can include serotonin syndrome, a potentially fatal condition that

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causes high levels of the chemical serotonin to accumulate in your body, heart disease due to impaired efficacy of blood pressure medications or unplanned pregnancy due to contraceptive failure, Taylor said.

Limitations of the study are that only medications recorded by the physician were analyzed. However, she said the rate of SJW interactions may actually be underestimated because the database did not include patients who were using SJW but did not tell their doctor.

“Labeling requirements for helpful supplements such as St. John’s wort need to provide appropriate cautions and risk information,” Taylor said, adding that France has banned the use of St. John’s wort products and several other countries, including Japan, the United Kingdom, and Canada, are in the process of including drug-herb interaction warnings on St. John’s wort products.



Doctors need to ask if the patient is taking any supplements, vitamins, minerals or herbs before prescribing any the drugs that interact with St. John’s wort.

Reference:

1. Davis SA, Feldman SR, Taylor SL. Use of St. John’s Wort in potentially dangerous combinations. J Altern Complement Med. 2014 Jul;20(7):578-9. doi: 10.1089/acm.2013.0216.

Source: Wakeforest Baptist Medical Center News Releases; June 30, 2014; http://www.wakehealth.edu/News-Releases/2014/Common_Herbal_Supplement_Can_Cause_Dangerous_Interactions__with_Prescription_Drugs.htm

UC Davis Study Identifies Risky Food Safety Practices in Home Kitchens



While most consumers are very aware of food safety issues, including salmonella, and the risk of foodborne illness, many do not follow recommended food safety practices in preparing their own meals at home, according to new research from the University of California, Davis (1).

The study, which examined preparation of raw poultry, found that the most common risks stemmed from cross contamination and insufficient cooking.

“The most surprising aspect of these findings to me was the prevalence of undercooking,” said Christine Bruhn, director of the Center for Consumer research at UC Davis, who authored the study. “We are now in summer, the peak season for foodborne illness, and these results come at a

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time when more consumers can benefit from being aware of better food safety practices. Even tips usually considered basic, like washing hands with soap and water before and after handling raw poultry, and never rinsing raw poultry in the sink, still need to be emphasized for a safer experience,” added Bruhn, a specialist in UC Cooperative Extension who studies consumer attitudes and behaviors toward food safety.

Most risks can be avoided by practicing thorough hand-washing, never rinsing raw chicken in the sink and using calibrated thermometers to determine that chicken is fully cooked. Researchers say these results will help narrow areas of focus and define important messages for food safety educators and advocates in their mission to promote safe food preparation.

The study analyzed video footage taken of 120 participants preparing a self-selected chicken dish and salad in their home kitchens. The participants were experienced in chicken preparation, with 85 percent serving chicken dishes in their home weekly, and 84 percent reporting being knowledgeable about food safety; 48 percent indicated they had received formal food safety training.

Cross contamination was of specific concern to researchers:



Most participants, 65 percent, did not wash their hands before starting meal preparation and 38 percent did not wash their hands after touching raw chicken. Only 10 percent of participants washed their hands for the recommended duration of 20 seconds and about one-third of the washing occasions used water only, without soap.

- Most participants, 65 percent, did not wash their hands before starting meal preparation and 38 percent did not wash their hands after touching raw chicken.
- Only 10 percent of participants washed their hands for the recommended duration of 20 seconds and about one-third of the washing occasions used water only, without soap.

- Nearly 50 percent of participants were observed washing their chicken in the sink prior to preparation, a practice that is not recommended as it leads to spreading bacteria over multiple surfaces in the kitchen. See the U.S. Department of Agriculture website: <http://1.usa.gov/1licv0U>.

Insufficient cooking was also observed:

- Forty percent of participants undercooked their chicken, regardless of preparation method and only 29 percent knew the correct USDA recommended temperature of 165 degrees Fahrenheit.
- Researchers observed that cooking thermometers were not widely used, with only 48 percent of participants owning one, and 69 percent of those reporting that they seldom use it to check if chicken is completely cooked. Most

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participants determined “fully cooked” based on appearance, an unreliable method according to the USDA. No participants reported calibrating their thermometers to ensure accuracy.

Based on the study’s findings, a coalition of agriculture and food safety partners, including the California Department of Food and Agriculture, UC Davis, the California Poultry Federation, the Oregon Department of Agriculture, the Washington State Department of Agriculture, the Northwest Chicken Council, Partnership for Food Safety Education, and Foster Farms, are launching an educational campaign to increase consumer knowledge about safe food preparation practices in the home. The study was funded by contributions from Foster Farms.

“We all have an important role in ensuring food safety and preventing foodborne illness,” said Shelley Feist, executive director of the nonprofit Partnership for Food Safety Education. “Dr. Bruhn’s research shows that some home food safety practices need to be reinforced with consumers. Proper hand-washing and the consistent use of thermometers are basic preventive actions that need to be part of all home food handling and

preparation.”



Many participants in the study undercooked their chicken, and few used thermometers to insure their chicken reached the safe internal temperature of 165° F.

California agriculture officials and representatives have been vocal in recent weeks about salmonella control at the ranch level. “The California poultry industry has made great strides in reducing salmonella on raw chicken,” said Karen Ross, secretary of the California Department of Food and Agriculture. “However, even at this lower level, consumers still need to practice safe handling and cooking of raw poultry.” Ross recently recorded a public service announcement calling for more attention to safe handling and cooking for raw poultry and meats.

“The poultry industry takes its responsibility to produce a safe product very seriously, as evidenced by current food safety programs that are drastically reducing the incidence of salmonella,” said Bill Mattos, president of the California Poultry Federation. “At the same time, the research indicates that the consumer recognizes they also have a role in ensuring safety. This

research provides a great opportunity to educate consumers with the most helpful information and tools to minimize risk and gives us a clear picture of what behaviors to focus on.”

The study’s complete findings are published in *Food Protection Trends*. Consumers can find free downloadable information on home food safety at <http://www.fightbac.org>.

Reference:

1. Bruhn CM. Chicken Preparation in the Home: An Observational Study. *Food Protection Trends*; Sept 2014; 34(5): 318-330.

Source: UC Davis News; June 27, 2014; http://news.ucdavis.edu/search/news_detail.lasso?id=10968

Resveratrol in Red Wine, Chocolate, Grapes Not Associated With Improved Health in Older Adults

The antioxidant resveratrol found in red wine, chocolate and grapes was not associated with longevity or the incidence of cardiovascular disease, cancer and inflammation (1).

The “French Paradox” of a low incidence of coronary heart disease despite a diet high in cholesterol and saturated fat in France has been attributed to the regular intake of red wine, in particular, to resveratrol and other polyphenols contained in wine. Some preliminary evidence also suggests that resveratrol may have anti-inflammatory effects, prevent cancer, and decrease blood vessel stiffness.

The participants (a sample of 783 men and women 65 years or older) were part of the Aging in the Chianti Region study from 1998 to 2009 in two Italian villages. The authors sought to determine if resveratrol levels achieved through diet were associated with inflammation, cancer, cardiovascular

disease, and death. Levels were measured using 24 hour urine collections to look for breakdown products of resveratrol.



The authors followed nearly 800 individuals for nine years to find that levels of resveratrol metabolites were not associated with longevity.

During nine years of follow-up, 268 participants (34.3 percent) died; of the 639 participants free of cardiovascular disease at enrollment, 174 (27.2 percent) developed cardiovascular disease during the follow-up; and of the 734 participants who were free of cancer at enrollment, 34 (4.6 percent) developed cancer during the follow-up. Urine resveratrol metabolite levels were not associated with death, inflammation, cardiovascular disease or cancer.

“In conclusion, this prospective study of nearly 800 older community-dwelling adults shows no association between urinary resveratrol metabolites and longevity. This study suggests that dietary resveratrol from Western diets in community-dwelling older adults does not have a substantial influence on inflammation, cardiovascular disease, cancer, or longevity.”

Reference:

1. Semba RD, Ferrucci L, Bartali B, et al. Resveratrol levels and all-cause mortality in older community-dwelling adults. *JAMA Intern Med.* 2014 Jul;174(7):1077-84. doi: 10.1001/jamainternmed.2014.1582.

Source: JAMA News Releases; May 12, 2014; <http://media.jamanetwork.com/news-item/resveratrol-in-red-wine-chocolate-grapes-not-associated-with-improved-health/>

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