

Nutrition Perspectives

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

Quality of U.S. Diet Improves, Gap Widens for Quality Between Rich and Poor

An unhealthy diet is closely linked to cardiovascular disease, diabetes and some cancers. Eating a healthy diet is an important part of the strategy to prevent adverse health outcomes. Evaluating population trends in diet quality is important because it can offer guidance for public health policy.



The changes in Health Eating Index scores over time indicated increased fruit and vegetable intake, and decreased sugar-sweetened beverage and trans fat intake.

The authors of this study used the Alternate Healthy Eating Index 2010 (AHEI-2010) to investigate trends in diet quality in the U.S. adult population from 1999 to 2010 using a sample of 29,124 adults from the National Health and Nutrition Examination Survey (1). A higher AHEI-2010 score indicated a more healthful diet. The index's components were scored from 0 to 10. For fruits, vegetables, whole grains, nuts and

legumes, long-chain omega-3 fats and polyunsaturated fatty acids (PUFAs), a higher score corresponded to higher intake. For trans fat, sugar-sweetened beverages and fruit juices, red and/or processed meat and sodium, a higher score corresponded to lower intake. The authors used a recently updated index, the Healthy Eating Index 2010 (HEI-2010) for further analysis.

The energy-adjusted average AHEI-2010 score increased from 39.9 in 1999- 2000 to 46.8 in 2009- 2010. Reduced trans fat intake accounted for more than half of this improvement. Scores increased by 0.9 points for sugar-sweetened beverages and fruit juice reflecting decreased consumption. Score increases of 0.7 points for whole fruit, 0.5 points for whole grains, 0.5 points

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for PUFAs and 0.4 points for nuts and legumes reflected increased consumption. A decrease in scores for sodium reflected greater consumption. Having a lower body mass index (BMI) also was associated with dietary improvement. Diet quality scores in the high-socioeconomic status (SES) group, associated with both income and education, were consistently higher than in the lower-SES groups and that gap widened over time from 3.9 points in 1999-2000 to 7.8 points in 2009-2010.

“Our study suggests that the overall dietary quality of the U.S.

population steadily improved from 1999 through 2010. This improvement reflected favorable changes in both consumers' food choices and food processing, especially the reduction of trans fat intake, that were likely motivated by both public policy and nutrition education. However, overall dietary quality remains poor, indicating room for improvement and presenting challenges for both public health researchers and policy makers. Furthermore, substantial differences in dietary quality

were seen across levels of SES, and the gap between those with the highest and lowest levels increased over time.”



Despite the gains made in the last ten years, overall dietary quality remains poor, and the dietary quality gap between the highest and lowest SES groups widened.

In a related commentary, Takehiro Sugiyama, M.D., Ph.D., of the National Center for Global Health and Medicine, Tokyo, and Martin F. Shapiro, M.D., Ph.D., of the University of California, Los Angeles, write: “The growing chasm in dietary quality by SES confronts us with the possibility that the governmental efforts to mind this gap have been insufficient. It is disappointing that the improvement seen in those of higher SES was not seen in the lower-SES group.”

“How could we close the dietary quality gap? First, we could restrict benefits to more healthful foods, as has been done by the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), which restricts purchasable foods with the benefit,” they continue.

“Other strategies to improve dietary quality include providing healthful foods to students and residents in underserved areas,” they note.

References:

1. Wang DD, Leung CW, Li Y, et al. Trends in Dietary Quality Among Adults in the United States, 1999 Through 2010. *JAMA Intern Med.* 2014 Sep 1. doi: 10.1001/jamainternmed.2014.3422. [Epub ahead of print]
2. Sugiyama T, Shapiro MF. The Growing Socioeconomic Disparity in Dietary Quality: Mind the Gap. *JAMA Intern Med.* 2014 Sep 1. doi: 10.1001/jamainternmed.2014.3048. [Epub ahead of print]

Adapted from: JAMA Internal Medicine News Releases; Sep. 1, 2014; <http://archinte.jamanetwork.com/article.aspx?articleid=1899550>

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Federal Food Program Puts Food on the Table, But Dietary Quality Could Be Improved

A new American Cancer Society study suggests that participants in the Supplemental Nutrition Assistance Program (SNAP), previously known as the food stamp program, had lower dietary quality scores compared with income eligible non-participants (1). The authors say the findings emphasize the need to bolster programs aimed at enhancing the dietary quality of SNAP participants.

The SNAP program aims to assist low-income individuals and households with the resources to obtain a nutritionally adequate diet. In 2013, approximately 47.6 million individuals, or about one in seven Americans, participated in the program. Although SNAP aims to help families “put food on the table” and prevent food insecurity, some studies have found that SNAP participation is also linked to increased likelihood of weight gain and obesity. The 2014 Farm Bill included several provisions aimed at facilitating and encouraging SNAP participants to eat healthier, including requiring SNAP retailers to carry foods from a range of food groups and more fresh foods and creating a pilot program to provide for grants to test the use of incentives to encourage fruit and vegetable purchases by SNAP participants.. SNAP-Ed, the nutrition education companion to the SNAP program, has been revamped in recent years with the goal of promoting healthier food choices.

For their study, published in *Mayo Clinic*

Reference:

1. Nguyen BT, Shuval K, Njike VY, Katz DL. The Supplemental Nutrition Assistance Program and Dietary Quality Among US Adults: Findings From a Nationally Representative Survey. *Mayo Clin Proc.* 2014 Sep;89(9):1211-9. doi: 10.1016/j.mayocp.2014.05.010. Epub 2014 Aug 5.

Proceedings, researchers led by Binh T. Nguyen, PhD, of the American Cancer Society, explored the diet quality of SNAP participants using data from a nationally representative sample of over 4,000 adult Americans from the National Health and Nutrition Examination Survey 2003-2010 (NHANES).

Their analyses revealed that compared with low-income nonparticipants, SNAP participants had lower dietary quality scores overall and lower scores for fruits and vegetables, seafood and plant proteins, and had higher intake of empty calories. The groups had comparable scores on intakes of whole grains, refined grain, total dairy, total protein, fatty acid, and sodium. The researchers found that the relationship between SNAP participation and lower dietary quality was primarily observed in women, Hispanics, young adults and those who were food secure.

“The results suggest a need for interventions that encourage a healthier diet among SNAP participants in general but also particularly in the subgroups we’ve identified as being particularly at risk,” said Dr. Nguyen. “We do, however, want to emphasize the importance of SNAP; our findings underscore the need for additional education, incentives, and other interventions to make sure not only that people are getting calories, but also that they’re getting them from the right foods.”



In 2013, approximately 47.6 million individuals, or about one in seven Americans, participated in SNAP.

Room for Improvement in Elementary School Children's Lunches and Snacks from Home

Open a child's lunch box and you're likely to find that the lunches and snacks inside fall short of federal guidelines. Those are the findings of a study conducted by researchers at the Friedman School of Nutrition Science and Policy at Tufts University and in the Department of Public Health and Community Medicine at Tufts University School of Medicine (1). The findings were published in the *Journal of the Academy of Nutrition and Dietetics*.

Led by senior author Jeanne Goldberg, Ph.D., R.D., a professor at the Friedman School, the study is among the first to examine what children bring to school for lunch and snack. The researchers used digital photography to document the lunches and snacks of more than 600 Massachusetts third and fourth graders in 12 schools in six public school districts. Goldberg and colleagues compared students' lunch and snack items to federal National School Lunch Program (NSLP) and Child and Adult Food Care Program (CAFPC) standards, respectively. They found that only 27 percent of the lunches met at least three of the five NSLP standards, and only 4 percent of snacks met at least two of the four CAFPC standards, both of which emphasize fruits, vegetables, whole grains and low- or non-fat dairy.

The findings highlight the challenges associated with packing healthful items to send to school. "When deciding what to pack, parents are juggling time, cost, convenience, and what is acceptable to their children. Unfortunately, these factors are not always in harmony with good

nutrition," Goldberg said.



Studies on packed lunches report that children who bring their lunch tend to consume fewer fruits and vegetables, less fiber and more total calories than those who participate in the National School Lunch Program

"Lunches were comprised more of packaged foods than anything else," Goldberg said. "Almost a quarter of the lunches lacked what would be considered an entrée, such as a sandwich or leftovers, and were instead made up of a variety of packaged snack foods and desserts."

"The few existing studies on packed lunches report that children who bring their lunch tend to consume fewer fruits and vegetables, less fiber and more total calories than those who participate in the National School Lunch Program," Goldberg said. "Given that over 40 percent of U.S. schoolchildren bring their lunches to school on a given day, it's important to consider how nutrition experts and policymakers could help parents meet the challenges of cost, convenience, and child preference and add nutrition to the equation."

The researchers also found considerable room for improvement in school snacks. Goldberg and colleagues found that a typical snack consisted of one or more sugar-sweetened beverages paired with a packaged snack food or dessert. "Few studies have evaluated snacks from home and our data suggest that classroom-based snacking presents another opportunity for kids to eat and drink high calorie and nutrient-poor foods and beverages," said corresponding author Kristie Hubbard, Ph.D., M.P.H., R.D., a research associate at the Friedman School.

"Although water was slightly more common than sugar-sweetened beverages at lunchtime, we saw many children with two or three sugary drinks in their

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lunchboxes,” said Hubbard. “Replacing sugary drinks with water – the drink recommended by the American Academy of Pediatrics - keeps children hydrated without adding extra sugar to their diet.”

The current study evaluated one day’s worth of lunches and snacks in 12 schools. Goldberg and colleagues acknowledge the need for larger studies of more diverse groups of students over an extended period of time.

This study points to the need to help parents find ways to build nutrition into the packed-lunch routine. The researchers acknowledge that this is a challenge that will require creative approaches to packing lunch boxes with affordable, easy-to-prepare, and healthy options while at the same time creating a demand for these options among children.

Reference:

1. Hubbard KL, Must A, Eliasziw M, et al. What's in Children's Backpacks: Foods Brought from Home. *J Acad Nutr Diet*. 2014 Sep;114(9):1424-31. doi: 10.1016/j.jand.2014.05.010. Epub 2014 Jul 16.

Source: Tufts Now News Releases; July 22, 2014; <http://now.tufts.edu/news-releases/room-improvement-elementary-school-children-s-lunches-and-snacks-home>



Removing School Vending Machines is Not Enough to Cut Soda Consumption



Students in schools without vending machines ate more fast food than schools with vending machines.

Banning vending machines from schools can actually increase soda and fast food consumption among students if it’s the only school food policy change implemented, according to research conducted at the University of Illinois at Chicago (1).

The study, published in the journal *PLOS ONE*, looked exclusively at regular soda consumption – not diet soda or other sugar sweetened beverages – and fast food.

The authors are analyzing other sugar-sweetened beverages in an independent, ongoing study.

The researchers wanted to find out if having vending machines in schools affected daily intake of soda and eating unhealthy fast foods outside of school when combined with other factors such as state tax rates and soda bans in schools. The study included 8,245 high school

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students in 27 states.

The study linked student data from the National Youth Physical Activity and Nutrition Study with state-level data on soda taxes, restaurant taxes, and laws governing the sale of soda in schools in 2010.

The researchers found that 23 percent of students reported drinking at least one soda per day if they had access to vending machines in schools, compared to 28 percent of students who did not have access. However, these differences were only observed in states where soda was taxed less or students were able to buy soda from the school cafeteria or the school store.

The study also found that students eat more fast food when vending machines are removed, particularly when state sales tax rates for restaurant foods are lower, according to the authors.

The study shows that “there may be unintended effects if you only make small-scale changes. When more comprehensive changes were implemented, there were no unintended effects,” said Daniel Taber, lead author and a former

researcher at UIC’s Institute for Health Research and Policy.

The authors caution that the study does not necessarily mean bad news for school nutrition policies – only that an isolated change in the school food environment is not likely to have an impact when kids have access to high-fat, high-calorie foods and beverages from other sources.



An isolated change in the school environment isn’t likely to have an impact on its own, particularly when students still have access to high-fat, high-calorie foods from other sources.

Other studies have shown that long-term, comprehensive changes in school food policies, including strengthening school meal standards, can have a positive impact on students’ health.

“Policy changes really need to be comprehensive and not just focused on one item such as regular soda or one location such as cafeterias,” said Jamie Chriqui, a study coauthor and senior research

scientist at UIC’s Institute for Health Research and Policy.

The study reinforces why comprehensive policies are needed such as the new U.S. Department of Agriculture’s Smart Snacks in Schools rule which begins implementation with the 2014-15 school year, Chriqui said.

Reference:

1. Taber DR, Chriqui JF, Vuillaume R, Chaloupka FJ. How state taxes and policies targeting soda consumption modify the association between school vending machines and student dietary behaviors: a cross-sectional analysis. PLoS One. 2014 Aug 1;9(8):e98249. doi: 10.1371/journal.pone.0098249. eCollection 2014.

Source: Sherri McGinnis González. UIC News Center; Aug. 1, 2014; <http://news.uic.edu/removing-vending-machines-from-schools-is-not-enough-to-reduce-soda-consumption>

Why Seniors Don't Eat: It's Complicated

More than half of older adults who visit emergency departments are either malnourished or at risk for malnutrition, but not because of lack of access to health care, critical illness or dementia. Despite clear signs of malnutrition or risk of malnutrition, more than three-quarters had never previously been diagnosed with malnutrition, according to the results of a study published in the *Annals of Emergency Medicine* (1).

"We were surprised by the levels of malnutrition or risk of it among cognitively intact seniors visiting the ER, and even more surprised that most malnourished patients had never been told they were malnourished," said lead study author Timothy Platts-Mills, MD, of the University of North Carolina Department of Emergency Medicine in Chapel Hill, N.C. "Depression and dental problems appear to be important contributors, as is difficulty buying groceries. Given that seniors visit ERs more than 20 million times a year in the U.S., emergency physicians have an opportunity to screen and intervene in ways that may be very helpful without being very costly."

Of patients age 65 and older, 16 percent were malnourished and 60 percent were either malnourished or at risk for malnutrition. Of the malnourished patients, 77 percent denied having been previously diagnosed with malnutrition. Malnutrition was highest among patients with

symptoms of depression (52 percent), those residing in assisted living (50 percent), those with difficulty eating (38 percent) and those reporting difficulty buying groceries (33 percent). Difficulty eating was mostly attributed to denture problems, dental pain or difficulty swallowing.



Difficulty eating, commonly caused by denture problems, was one the more common explanations for malnutrition among seniors.

In this study, nearly all (95 percent) of patients had a primary care physician, nearly all (94 percent) lived in a private residence and nearly all (96 percent) had some type of health insurance. More than one-third (35 percent) had a college education.

Malnutrition is defined as lacking "adequate calories, protein or other nutrients needed for tissue maintenance and repair."

"For patients who report difficulty buying groceries, Supplemental Nutrition Program, Meals on Wheels, Congregate Meals Programs or community-based food charities can be helpful, although other factors may also need to be addressed," said Dr. Platts-Mills. "The growing role of the emergency department as community health resource

makes it an essential place for identifying and addressing unmet needs of older adults. Implementation of oral nutritional supplementation is inexpensive and may reduce overall costs by accelerating recovery from illness and reducing readmissions."

Seniors continued with references on page 8

Seniors (Continued from page 7)

Reference:

1. Pereira GF, Bulik CM, Weaver MA et al. Malnutrition Among Cognitively Intact, Noncritically Ill Older Adults in the Emergency Department. *Ann Emerg Med.* 2014 Aug 7. pii: S0196-0644(14)00625-8. doi: 10.1016/j.annemergmed.2014.07.018. [Epub ahead of print]

Source: ACEP Newsroom; Aug. 13, 2014; <http://newsroom.acep.org/2014-08-13-why-seniors-dont-eat-its-complicated>

Comparison of Named Diet Programs Finds Little Difference in Weight Loss Outcomes

In an analysis of data from nearly 50 trials including about 7,300 individuals, significant weight loss was observed with any low-carbohydrate or low-fat diet, with weight loss differences between diet programs small, findings that support the practice of recommending any diet that a patient will adhere to in order to lose weight, according to a study in the September 3 issue of *JAMA* (1).

Named or branded (trade-marked) weight loss programs provide structured dietary and lifestyle recommendations via popular books and in-person or online behavioral support and represent a multibillion dollar industry. Debate regarding the relative merit of the diets is accompanied by advertising claiming which macronutrient composition is superior, such as a low-carbohydrate or low-fat diet. Establishing which of the major named diets is most effective is important because overweight patients often want to know which diet results in the most effective weight loss, according to background

information in the article.

Bradley C. Johnston, Ph.D., of the Hospital for Sick Children Research Institute, Toronto, and McMaster University, Hamilton, Ontario, and colleagues conducted a meta-analysis to assess the relative effectiveness of different popular diets in improving weight loss. The researchers conducted a search of the medical literature to identify studies in which overweight or obese adults (body mass index 25 or greater) were randomized to a popular self-administered named diet and reported weight or body mass index data at 3-month follow-up or longer.

The meta-analysis included 59 articles that reported 48 randomized clinical trials (7,286 individuals; median age, 46 years; median weight, 207.5 lbs.). In the diet-class analysis adjusted for exercise and behavioral support, all treatments were superior to no diet at 6-month follow-up. Compared with no diet, low-carbohydrate diets had a median difference in



There was very little difference in weight loss in either the short or the long term between the different branded weight loss programs.

carbohydrate diets had a median difference in

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weight loss of 19.2 lbs. and low-fat diets had similar estimated effects (17.6 lbs.).

At 12-month follow-up, the estimated average weight losses of all diet classes compared with no diet were approximately 2.2 to 4.4 lbs. less than after 6-month follow-up. The diet classes of low fat (16 lbs.) and low carbohydrate (16 lbs.) continued to have the largest estimated treatment effects.

Weight loss differences between individual diets were minimal. For example, the Atkins diet resulted in a 3.8 lbs. greater weight loss than the Zone diet at 6-month follow-up. “Although statistical differences existed among several of the diets, the differences were small and unlikely to be important to those seeking weight loss,” the authors write.

“Our findings should be reassuring to clinicians and the public that there is no need for a one-size-fits-all approach to dieting because many different diets appear to offer considerable weight loss benefits. This is important because many patients have difficulties adhering to strict diets that may be particularly associated with cravings or be

culturally challenging (such as low-carbohydrate diets). Our findings suggest that patients may choose, among those associated with the largest weight loss, the diet that gives them the least challenges with adherence. Although our study did not examine switching between diets, such a strategy may offer patients greater choices as they

attempt to adhere to diet and lifestyle changes.”

Linda Van Horn, Ph.D., R.D., of the Northwestern University Feinberg School of Medicine, Chicago, comments on the findings of this study in an accompanying editorial.

“Overall, the findings from the study by Johnston et al, along with other recent data, underscore the

importance of effective diet and lifestyle interventions that promote behavioral changes to support adherence to a calorie-restricted, nutrient-dense diet that ultimately accomplishes weight loss. Choosing the best diet suited to an individual's food preferences may help foster adherence, but beyond weight loss, diet quality including micronutrient composition may further benefit longevity.”



The findings from this study underscore the importance of interventions that support adherence to a calorie-restricted, nutrient-dense diet that ultimately accomplishes weight loss.

References:

1. Johnston BC, Kanters S, Bandayrel K, et al. Comparison of weight loss among named diet programs in overweight and obese adults: a meta-analysis. *JAMA*. 2014 Sep 3;312(9):923-33. doi: 10.1001/jama.2014.10397.
2. Van Horn L. A diet by any other name is still about energy. *JAMA*. 2014 Sep 3;312(9):900-1. doi: 10.1001/jama.2014.10837.

Adapted from: JAMA News Releases; Sep. 2, 2014; <http://media.jamanetwork.com/news-item/comparison-of-named-diet-programs-finds-little-difference-in-weight-loss-outcomes/>

When Talking About Body Size, African American Women & Doctors May Be Speaking Different Languages

African American women and their female children have the highest obesity prevalence of any demographic group and are more likely to underestimate their body weight than white women. Yet, according to new research from Rush University Medical Center, cultural norms for body size may prevent awareness among many African American women about the potential health benefits they and others in their cultural group might achieve through weight loss (1).

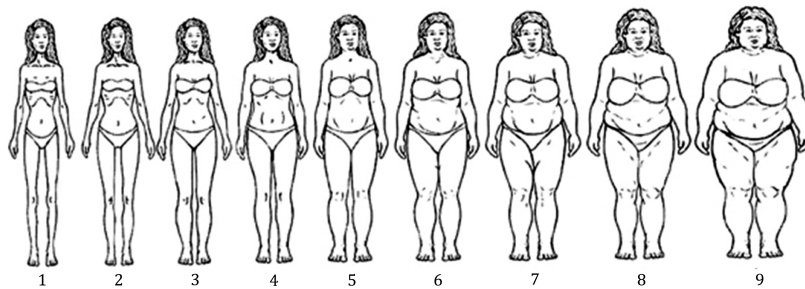
Led by Elizabeth Lynch, PhD, this research recruited African American women in a low-income neighborhood of Chicago. All 69 participants were full-time caretakers of at least one child and the mean age of the subjects was 38 years. For the study, women were asked to use the Body Image Scale to classify figures on the scale as overweight, obese, or too fat and identify their own body size.

Regardless of their weights, women in this study agreed which figures on the Body Image Scale were overweight, obese, and too fat. The majority classified Body Figures 6-9 as overweight and Body Figures 8 and 9 as obese and too fat. Therefore, overweight body sizes were not considered too fat. In fact, having the women classify their own body size according to cultural definitions revealed a large chasm between biomedical and cultural definitions of body size. The 56 percent of overweight women

(BMI 25 or greater) and 40 percent of obese women (BMI 30 or greater) did not classify their body size as overweight, obese, or too fat. The cultural threshold for overweight was determined to be about a BMI of 35, which is higher than the medical definition of ≥ 25 .

"Interestingly, research suggests that weight threatens mortality at a BMI >35, so perhaps the cultural definition captures some important health effects associated with larger body sizes. But the fact that women felt that overweight body sizes were not too fat suggests that being told they are overweight, even by a physician, may not be sufficient motivation for them to attempt to lose weight," Lynch said.

Although there were limitations to this study, namely self-reporting of height and weight data for BMI calculation, the results further understanding of attitudes among African American women about body weight and image. Specifically, this study goes further than others in identifying the cultural belief that overweight bodies are not too fat. Thus, the researchers believe more effort toward education regarding body size should be exerted, and biomedical definitions of body size should be taught using visual aids.



The researchers used an adapted Body Image Scale to assess attitudes (KM Pulvers et al. Obesity Res. 2004;12:1641-1651).

Reference:

1. Lynch EB, Kane J. Body size perception among African American women. *J Nutr Educ Behav.* 2014 Sep-Oct;46(5):412-7. doi: 10.1016/j.jneb.2014.03.002.

Source: JNEB Media Room; Sep. 10, 2014;

http://www.jneb.org/pb/assets/raw/Health%20Advance/journals/jneb/46_5_JNEB_PR_Lynch_FINAL2.pdf

Eating is Addictive But Not Individual Ingredients Such as Sugar or Fat

People can become addicted to eating for its own sake but not to consuming specific foods such as those high in sugar or fat, research suggests. An international team of scientists has found no strong evidence for people being addicted to the chemical substances in certain foods (1). The brain does not respond to nutrients in the same way as it does to addictive drugs such as heroin or cocaine, the researchers say. Instead, people can develop a psychological compulsion to eat, driven by the positive feelings that the brain associates with eating.

“There has been a major debate over whether sugar is addictive. There is currently very little evidence to support the idea that any ingredient, food item, additive or combination of ingredients has addictive properties,” said Professor Suzanne Dickson, one of the study authors.

This is a behavioral disorder and could be categorized alongside conditions such as gambling addiction, say scientists at Edinburgh. They add that the focus on tackling the problem of obesity should be moved from food itself towards the individual's relationship with eating. “People try to find rational explanations for being

over-weight and it is easy to blame food. Certain individuals do have an addictive-like relationship with particular foods and they can over-eat despite knowing the risks to their health,” said Dr. John

Menzies. “More avenues for treatment may open up if we think about this condition as a behavioral addiction rather than a substance-based addiction.”

The study, which examined the scientific evidence for food addiction as a substance-based addiction, is published in *Neuroscience & Biobehavioral Reviews*.

The researchers also say that the current classification of mental disorders, which does not permit a formal diagnosis of eating addiction, could be redrawn. They add that the focus on tackling the problem of obesity should be moved from food itself towards the individual's relationship with eating. However, more research would be needed to define a diagnosis.

The work was carried at the Universities of Edinburgh, Aberdeen, Gothenburg, Essen,

Utrecht and Santiago de Compostela. The researchers are involved in the NeuroFAST consortium, which is an EU-funded project studying the neurobiology of eating behavior, addiction and stress.



There's currently very little evidence to support the idea that any ingredient, food item, additive, or combination of ingredients has addictive properties.

Reference:

1. Hebebrand J, Albayrak O, Adan R, et al. "Eating addiction", rather than "food addiction", better captures addictive-like eating behavior. *Neurosci Biobehav Rev*. 2014 Sep 6;47C:295-306. doi: 10.1016/j.neubiorev.2014.08.016. [Epub ahead of print]

Adapted from: University of Edinburgh News and Events; Sep. 22, 2014; <http://www.ed.ac.uk/news/2014/140908-eatingaddiction>

Rate of Diabetes in U.S. May Be Leveling Off Although Increase in Prevalence Continues for Certain Subgroups

Following a doubling of the incidence and prevalence of diabetes in the U.S. from 1990-2008, new data suggest a plateauing of the rate between 2008 and 2012 for adults, however the incidence continued to increase in Hispanic and non-Hispanic black adults, according to a study in JAMA (1).

Although there has been an increase in the prevalence and incidence of diabetes in the United States in recent decades, no studies have systematically examined long-term, national trends of this disease, according to background information in the article.

Linda S. Geiss, M.A., of the Centers for Disease Control and Prevention, Atlanta, and colleagues analyzed 1980-2012 data for 664,969 adults ages 20 to 79 years from the National Health Interview Survey and determined the annual percentage change in rates of the prevalence and incidence of diagnosed diabetes (type 1 and type 2 combined).

During 1980-2012, the trends in age-adjusted prevalence of diagnosed diabetes in the overall population were similar to those for age-adjusted incidence. The prevalence per 100 persons was 3.5 in 1990, 7.9 in 2008, and 8.3 in 2012. The incidence

per 1,000 persons was 3.2 in 1990, 8.8 in 2008, and 7.1 in 2012. Both prevalence and incidence increased sharply during 1990-2008 (for prevalence, 4.5 percent, for incidence, 4.7 percent) before leveling off with no significant change during 2008-2012 (for prevalence, 0.6 percent, for incidence, -5-4 percent).

The researchers speculate that reasons for the potential slowing of the increase in diabetes may include a slowing in the rate of obesity, a major risk factor for type 2 diabetes.

Incidence and prevalence of diabetes ceased growing or leveled off in many population subgroups. However, incidence continued to increase in Hispanic and non-Hispanic black adults and prevalence continued to grow

among those with a high school education or less. "This threatens to exacerbate racial/ethnic and socioeconomic disparities in diabetes prevalence and incidence. Furthermore, in light of the well-known excess risk of amputation, blindness, end-stage renal disease, disability, mortality, and health care costs associated with diabetes, the doubling of diabetes incidence and prevalence ensures that diabetes will remain a major public health problem that demands effective prevention and management programs," the authors write.



While rates of diabetes have leveled off for many population subgroups, incidence has continued to increase in Hispanic and non-Hispanic black adults, as well as among those with a high school education or less.

Reference:

1. Geiss LS, Wang J, Cheng YJ, et al. Prevalence and incidence trends for diagnosed diabetes among adults aged 20 to 79 years, United States, 1980-2012. JAMA. 2014 Sep 24;312(12):1218-26. doi: 10.1001/jama.2014.11494.

Source: JAMA News Releases; Sep. 23; 2014; <http://media.jamanetwork.com/news-item/rate-of-diabetes-in-u-s-may-be-leveling-off/>

Liver Injury Caused by Herbals, Dietary Supplements Rises in Study Population

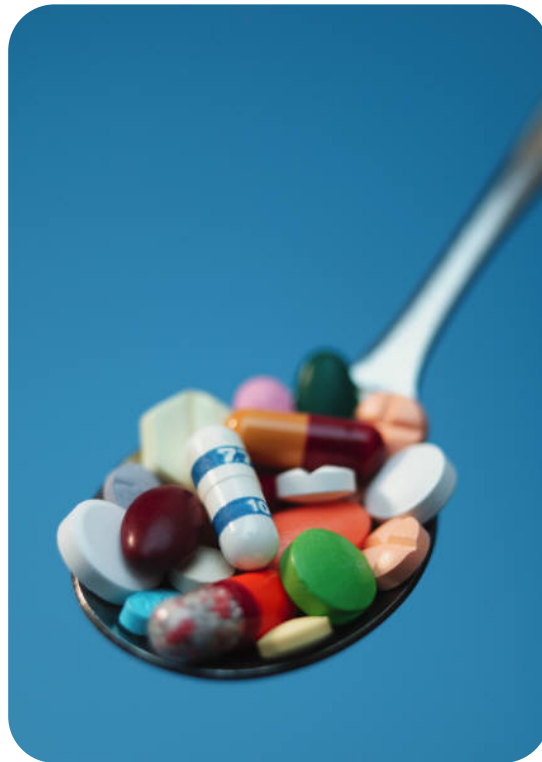
New research shows that liver injury caused by herbals and dietary supplements increased from 7 percent to 20 percent in a U.S. study group over a ten-year period (1). According to the study published in *Hepatology*, a journal of the American Association for the Study of Liver Diseases, liver injury caused by non-bodybuilding supplements is most severe, occurring more often in middle-aged women and more frequently resulting in death or the need for transplantation than liver injury from bodybuilding supplements or conventional medications.

Nearly half of all adult Americans consume herbal and dietary supplements with prior reports suggesting that is on the rise. Medical evidence shows that supplements are used more often by women, non-Hispanic whites, those over 40 years of age and those with more advanced education. Data from the National Health and Nutrition Examination Survey (NHANES) III indicate that multivitamins, minerals, calcium and fish oils are the most commonly used supplements.

“While many Americans believe supplements to be safe, government regulations (Dietary Supplement Health and Education Act of 1994) require less safety evidence to market products than what is required for conventional pharmaceuticals” explains lead author Dr. Victor Navarro, from Einstein Medical Center Philadelphia. “With less stringent oversight for herbals and dietary

supplements, there is greater potential for harmful consequences including life-threatening conditions.”

In response to the need for research in this area, the National Institutes of Diabetes and Digestive and Kidney Diseases (NIDDK) supported the establishment of the Drug-Induced Liver Injury Network (DILIN) in 2003 to track cases of liver injury caused by medications (excluding acetaminophen (Tylenol®)), herbals, and dietary supplements. Herbals and dietary supplements were identified as the second most common cause of liver injury in the first DILIN report.



While many Americans believe supplements are safe, safety evidence for supplements is often lacking.

The present study examines hepatotoxicity due to supplements compared to medications, enrolling 839 patients with liver injury from 8 U.S. DILIN referral centers between 2004 and 2013. Liver injury cases included 45 caused by bodybuilding supplements, 85 attributed to non-bodybuilding supplements, and 709 due to medications.

The research team determined that among cases enrolled, liver injuries from herbal and dietary supplements rose to 20 percent during the study period. While bodybuilding supplements caused prolonged jaundice (median 91 days) in young men, no fatalities or liver transplantations occurred. Death or liver transplantation occurred more frequently among cases of injury from non-bodybuilding supplements, 13 percent, than from conventional medications, 3

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percent. Liver injury from non-bodybuilding supplements was more common in middle aged women.

Dr. Navarro said, “Our study group is specific to DILIN centers and therefore we cannot conclude that liver injury due to herbals and dietary supplements in on the rise in the U.S. Further population-based study of liver injury due to herbal products and dietary supplements is needed.” The authors want to inform the public of potential dangers of using dietary supplements and advise that supplement producers, government agencies, healthcare providers and consumers work together to improve safety.



Informing the patients about the risks of dietary supplements is necessary.

Reference:

1. Navarro VJ, Barnhart H, Bonkovsky HL, et al. Liver injury from herbals and dietary supplements in the U.S. Drug-Induced Liver Injury Network. *Hepatology*. 2014 Oct;60(4):1399-408. doi: 10.1002/hep.27317. Epub 2014 Aug 25.

Source: Wiley Press Releases; Sep. 3, 2014; <http://www.wiley.com/WileyCDA/PressRelease/pressReleaseId-111942.html>

FDA warns consumers not to use Eu Yan Sang (Hong Kong) Ltd.'s “Bo Ying compound”

The U.S. Food and Drug Administration warns parents and caregivers not to use “Bo Ying compound” manufactured by Eu Yan Sang (Hong Kong) Ltd. due to the potential lead poisoning risk associated with the product.

The powdered product is marketed in retail outlets and online for use in infants and children for treatment of a variety of conditions including influenza, fever, sneezing, and nasal discharge. The product is labeled in Chinese and English.

Parents and caregivers are advised to not purchase or use this product. Anyone using this product or providing it to a child should immediately consult a health care professional.

Exposure to lead can cause serious damage to the central nervous system, the kidneys, and the immune system. In children, chronic exposure to lead, even at low levels, is associated with impaired cognitive function, including reduced IQ, behavioral difficulties, and other problems.



The powdered product is marketed in retail outlets and online for use in infants and children.

FDA learned of this risk from the New York City Department of Health & Mental Hygiene after the product was tested and found to contain high levels of lead. FDA has received one adverse event report of lead poisoning in an 18-month-old child who was given this product.

Health care professionals and consumers are encouraged to report to FDA any adverse events

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potentially related to “Bo Ying compound” manufactured by Eu Yan Sang (Hong Kong) Ltd. or to any other alternative medicines to FDA’s MedWatch Adverse Event Reporting program by:

- Completing and submitting the report online

using MedWatch Online Voluntary Reporting Form at <https://www.accessdata.fda.gov/scripts/medwatch/>

- Downloading and completing the form, then submitting it via fax at 1-800-FDA-0178

Source: FDA Drug Safety and Availability; Sep. 28, 2014 <http://www.fda.gov/Drugs/DrugSafety/ucm416220.htm>

Omega-3 Fatty Acid Supplementation During Pregnancy Does Not Appear to Improve Cognitive Outcomes for Children

Although there are recommendations for pregnant women to increase their intake of the omega-3 fatty acid docosahexaenoic acid (DHA) to improve fetal brain development, a randomized trial finds that prenatal DHA supplementation did not result in improved cognitive, problem-solving or language abilities for children at four years of age, according to the study in the May 7 issue of *JAMA*, a theme issue on child health (1).

Maria Makrides, B.Sc., B.N.D., Ph.D., of the South Australian Health and Medical Research Institute, Adelaide, Australia and colleagues conducted longer-term follow-up from a previously published study in which pregnant women received 800 mg/d of DHA or placebo. In the initial study, the researchers found that average cognitive, language,

and motor scores did not differ between children at 18 months of age. For the follow-up study, outcomes were assessed at 4 years, a time point when any subtle effects on development should have emerged and can be more reliably assessed.



DHA supplementation did not impact average cognitive, language and motor skills at 18 months of age.

The majority (91.9 percent) of eligible families (DHA group, n = 313; control group, n = 333) participated in the follow-up. The authors found that measures of cognition, the ability to perform complex mental processing, language, and executive functioning (such as memory, reasoning, problem solving) did not differ significantly between groups.

“Our data do not support prenatal DHA supplementation to enhance early childhood

development.”

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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