Antioxidant Spices Reduce Negative Effects Of High-Fat Meals

Eating a diet rich in spices, like turmeric and cinnamon, reduces the body’s negative responses to eating high-fat meals, according to Penn State researchers (1).

"Normally, when you eat a high-fat meal, you end up with high levels of triglycerides, a type of fat, in your blood," said Sheila West, associate professor of biobehavioral health, Penn State, who led the study. "If this happens too frequently, or if triglyceride levels are raised too much, your risk of heart disease is increased. We found that adding spices to a high-fat meal reduced triglyceride response by about 30 percent, compared to a similar meal with no spices added."

West and her colleagues prepared meals on two separate days for six men between the ages of 30 and 65 who were overweight, but otherwise healthy. The researchers added two tablespoons of culinary spices to each serving of the test meal, which consisted of chicken curry, Italian herb bread, and a cinnamon biscuit. The control meal was identical, except that spices were not included. The team drew blood from the participants every 30 minutes for three hours. They reported their findings in the current issue of the Journal of Nutrition.

"In the spiced meal, we used rosemary, oregano, cinnamon, turmeric, black pepper, cloves, garlic powder and paprika," said Ann Skulas-Ray, postdoctoral fellow. "We selected these spices because they had potent antioxidant activity.

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Spices (Continued from page 1)

previously under controlled conditions in the lab.

When the meal contained a blend of antioxidant spices, antioxidant activity in the blood was increased by 13 percent and insulin response decreased by about 20 percent.

According to West, many scientists think that oxidative stress contributes to heart disease, arthritis and diabetes. "Antioxidants, like spices, may be important in reducing oxidative stress and thus reducing the risk of chronic disease," she said, adding that the spice dose they used provided the equivalent amount of antioxidants contained in 5 ounces of red wine or 1.4 ounces of dark chocolate.

Skulas-Ray noted that adding two tablespoons of spices to meals did not cause stomach upset in the participants. "They enjoyed the food and had no gastrointestinal problems," she said. But, she added, "The participants were notified ahead of time that they would be eating highly spiced foods and they were willing to do so."


Test Measuring Blood Glucose Control May Help Improve Ability to Predict Risk of Cardiovascular Disease Events in Patients With Diabetes

Measuring hemoglobin A1c (HbA1c) levels in patients with diabetes is associated with improvement in models for predicting risk for cardiovascular disease (CVD), according to a report published by Archives of Internal Medicine.

According to background information in the article, diabetes has been recognized as a risk factor for CVD. But recent research indicates that the level of risk may vary among patients with diabetes. "Simulated cost-benefit analyses have suggested that this variability in CVD risk could provide an opportunity for tailored preventive therapy in diabetic patients."

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Blood Glucose (Continued from page 2)

patients," write the authors. They sought to investigate the predictive value of HbA1c levels; this test reflects the average blood glucose level over the previous two to three months, and generally indicates how well the diabetes is being managed.

Nina P. Paynter, Ph.D., from Brigham and Women's Hospital, Boston, and colleagues, used data from participants of the Women's Health Study and the Physician's Health Study II. To generate the model, they included data from 24,674 women, of whom 685 had diabetes at baseline, and 11,280 men, of whom 563 had diabetes at baseline. Questionnaires provided participants' health history, and baseline blood samples were evaluated for cholesterol, C-reactive protein and HbA1c levels. The researchers followed up participants for incident (new cases) CVD; women were followed up for a median (midpoint) of 10.2 years and men for a median of 11.8 years.

During follow-up, 125 cardiovascular events occurred in the 685 women with diabetes and 170 events occurred in the 563 men with diabetes (compared with 666 and 1,382 events, respectively, in participants without diabetes). In both sexes, including HbA1c into risk modeling for CVD improved prediction of CVD compared to classification of all diabetic participants as high risk (10-year risk at least 20 percent). This association was especially pronounced in women. The risk modeling demonstrated that 71.9 percent of female diabetic participants had less than a 20 percent risk of CVD over 10 years, whereas only 24.5 percent of male diabetic participants had a predicted 10-year CVD risk of less than 20 percent. In models that included a term for HbA1c, there was substantial improvement in CVD risk prediction for women, and more modest improvement in risk prediction for men. Using a yes/no term for diabetes instead of HbA1c also improved prediction over classification as high risk in both men and women. In women, however, HbA1c further improved prediction over the yes/no term.

"We found that in these large population-based cohorts of both men and women, presence of diabetes alone did not confer a 10-year risk of CVD higher than 20 percent, and measurement of HbA1c level in diabetic subjects improved risk prediction compared with classification as cardiovascular risk equivalent," note the researchers. They propose that the difference in risk between the sexes may be partly attributed to the increase in CVD risk with age and the delayed risk in women. The authors call for further research to replicate their results, but conclude, "Our findings suggest that the improvement in CVD risk prediction, and possibly calibration, obtained with adding HbA1c levels is highest in lower-risk populations."

HbA1c provides a measure of a person’s average blood glucose level over two to three months, giving an indication of how well the diabetes is being managed. This was found to have better risk prediction for cardiovascular disease than presence of diabetes alone.

Red Meat Linked to Increased Risk of Type 2 Diabetes

A new study by Harvard School of Public Health (HSPH) researchers finds a strong association between the consumption of red meat—particularly when the meat is processed—and an increased risk of type 2 diabetes. The study also shows that replacing red meat with healthier proteins, such as low-fat dairy, nuts, or whole grains, can significantly lower the risk.

The study, led by An Pan, research fellow in the HSPH Department of Nutrition, will be published online in the American Journal of Clinical Nutrition.

Pan, senior author Frank Hu, professor of nutrition and epidemiology at HSPH, and colleagues analyzed questionnaire responses from 37,083 men followed for 20 years in the Health Professionals Follow-Up Study; 79,570 women followed for 28 years in the Nurses’ Health Study I; and 87,504 women followed for 14 years in the Nurses’ Health Study II. They also conducted an updated meta-analysis, combining data from their new study with data from existing studies that included a total of 442,101 participants, 28,228 of whom developed type 2 diabetes during the study. After adjusting for age, body mass index (BMI), and other lifestyle and dietary risk factors, the researchers found that a daily 100-gram serving of unprocessed red meat (about the size of a deck of cards) was associated with a 19 percent increased risk of type 2 diabetes. They also found that one daily serving of half that quantity of processed meat—50 grams (for example, one hot dog or sausage or two slices of bacon)—was associated with a 51 percent increased risk.

The researchers found that a daily serving of red meat was associated with a 19 percent increase in risk of type 2 diabetes, while a daily serving of processed meat was associated with a 51 percent increase in risk.

“Clearly, the results from this study have huge public health implications given the rising type 2 diabetes epidemic and increasing consumption of red meats worldwide,” said Hu. “The good news is that such troubling risk factors can be offset by swapping red meat for a healthier protein.”

The researchers found that, for an individual who eats one daily serving of red meat, substituting one serving of nuts per day was associated with a 21 percent lower risk of type 2 diabetes; substituting low-fat dairy, a 17 percent lower risk; and substituting whole grains, a 23 percent lower risk.

Based on these results, the researchers advise that consumption of processed red meat—like hot dogs, bacon, sausage, and deli meats, which generally have high levels of sodium and nitrates—should be minimized and unprocessed red meat should be reduced. If possible, they add, red meat should be replaced with healthier choices, such as nuts, whole grains, low-fat dairy products, fish, or beans.

Worldwide, diabetes has reached epidemic levels, affecting nearly 350 million adults. In the U.S. alone, more than 11 percent of adults over age 20—25.6 million people—have the disease, according to the Centers for Disease Control and Prevention. Most have type 2 diabetes, which is primarily linked to obesity, physical inactivity, and an unhealthy diet.

Previous studies have indicated that eating processed red meats increases the risk of developing type 2 diabetes. Risks from unprocessed meats have been less clear. For instance, in 2010, HSPH researchers found no clear evidence of an association between eating unprocessed meats and increased risk for either coronary heart disease or type 2 diabetes.

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Red Meat (Continued from page 4)

but that study was based on smaller samples than the current study, and the researchers recommended further study of unprocessed meats (2). Another HSPH study in 2010 linked eating red meat with an increased risk of heart disease—which is strongly linked to diabetes—but did not distinguish between processed and unprocessed red meats (3).

This new study—the largest of its kind in terms of sample size and follow-up years—finds that both unprocessed and processed meats pose a type 2 diabetes risk, thus helping to clarify the issue. In addition, this study is among the first to estimate the risk reduction associated with substituting healthier protein choices for red meat.

“Our study clearly shows that eating both unprocessed and processed red meat—particularly processed—is associated with an increased risk of type 2 diabetes,” said Pan. He noted that the 2010 U.S. dietary guidelines continue to lump red meat together with fish, poultry, eggs, nuts, seeds, beans, and soy products in the “protein foods” group. But since red meat appears to have significant negative health effects—increased risk of diabetes, cardiovascular disease, and even total mortality, as suggested by several recent studies—Pan suggested the guidelines should distinguish red meat from healthier protein sources and promote the latter instead.


UC Davis Researchers Find Disease-Causing Fat Cells In Those With Metabolic Syndrome

UC Davis Health System researchers have discovered biological indicators that help explain why some obese people develop chronic diseases such as diabetes and heart disease, and others do not (1).

The researchers took a novel approach of looking specifically at the body fat of people with metabolic syndrome—a condition characterized by increased blood pressure, high-fasting blood-sugar levels, excess abdominal fat and abnormal cholesterol levels. They found the fat cells released biomarkers associated with insulin resistance and chronic inflammation, conditions often leading to diabetes and cardiovascular disease.

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"Our study shows that not all obesity is the same and some body fat may actually be toxic," said Ishwarlal Jialal, UC Davis professor of endocrinology, diabetes and metabolism and senior author of the article, "Adipose Tissue Dysregulation in Patients with Metabolic Syndrome," published in the Journal of Clinical Endocrinology & Metabolism. "We have shown that the dysfunction in the fat of people with metabolic syndrome is more than can be explained by obesity. It tells us that metabolic syndrome is a high-risk condition for people who are obese."

While previous studies using circulating blood have found some of these biomarkers in people with metabolic syndrome, the current study is the first to pinpoint fat as a contributing source of these markers. The study is also unique in that it involved patients newly diagnosed with metabolic syndrome who had not yet developed diabetes or cardiovascular disease. Researchers compared fat from study subjects to fat from people who were also obese, but did not have metabolic syndrome.

"This drives home the point that clearly metabolic syndrome is high-risk for obesity and needs to be treated seriously," said Jialal, who directs the UC Davis Laboratory for Atherosclerosis and Metabolic Research.

The Centers for Disease Control and Prevention estimates that 35 percent of American adults have metabolic syndrome, and its prevalence is increasing even in children and young adults globally. It doubles a person’s chances of developing cardiovascular disease -- which can lead to heart attack or stroke -- and is at least five times the risk for developing diabetes. "This is the plague of our time," said Jialal.

In the current study, biopsies were performed to remove subcutaneous adipose tissue, which accounts for about 80 percent of body fat, from the buttocks of 65 patients: 39 newly diagnosed with metabolic syndrome and 26 who were obese. Researchers also took standard measurements, such as fasting glucose and blood pressure, waist circumference and body mass index (BMI). Glucose measurements were used to estimate insulin resistance, and both waist size and BMI were used in the statistical analysis to match test subjects with their control counterparts.

Jialal and his collaborators then measured 11 biomarkers for diabetes and cardiovascular disease, as well as counting the number of macrophages in the fat tissue. These macrophages form crown-like structures around fat cells that have outgrown their blood supply and died. The presence of macrophages -- immune system cells that engulf and destroy cellular waste -- indicates the kind of inflammatory response implicated in cardiovascular disease.

Last year, Jialal published a study on these same 65 patients showing that they have both dysfunctional and fewer endothelial progenitor cells (EPCs) than control subjects. These cells eventually form the lining of blood vessels and are used as a measure of cardiovascular health. As in the current study, this abnormality cannot be explained simply by obesity. Jialal's team now is looking at differences in monocytes between the two study groups. The new data suggests intrinsic defects in the critical adipose tissue cells and EPCs that are relevant to increased risk for diabetes.

Metabolic syndrome is the presence of three or more of the following risk factors: large waist circumference, high blood pressure, high fasting blood sugar, low HDL cholesterol, and/or high triglycerides.
and cardiovascular disease.

While metabolic syndrome can be reversed through diet and exercise resulting in weight loss, other kinds of treatment may be needed, Jialal said.

"I have done this for 34 years. It is hard to get people to stick to therapeutic lifestyle changes," he said, adding that researchers need to address the dysfunction of fat cells, using existing or novel drug therapies to block the production of damaging biomarkers.

"Once people have cardiovascular disease or diabetes, it’s too late and far more expensive given the complications that ensue. Metabolic syndrome is the antecedent. This is where we need to intervene," said Jialal.


A New Function For Vitamin C In Alzheimer's Disease

Researchers at Lund University have discovered a new function for vitamin C. Treatment with vitamin C can dissolve the toxic protein aggregates that build up in the brain in Alzheimer’s disease (1). The research findings are now being presented in the Journal of Biological Chemistry.

The brains of people with Alzheimer’s disease contain lumps of so-called amyloid plaques which consist of misfolded protein aggregates. They cause nerve cell death in the brain and the first nerves to be attacked are the ones in the brain’s memory center.

“When we treated brain tissue from mice suffering from Alzheimer’s disease with vitamin C, we could see that the toxic protein aggregates were dissolved. Our results show a previously unknown model for how vitamin C affects the amyloid plaques”, says Katrin Mani, reader in Molecular Medicine at Lund University.

“Another interesting finding is that the useful vitamin C does not need to come from fresh fruit. In our experiments, we show that the vitamin C can also be absorbed in larger quantities in the form of dehydroascorbic acid from juice that has been kept overnight in a refrigerator, for example”.

There is at present no treatment that cures Alzheimer’s disease, but the research is aimed at treatments and methods to delay and alleviate the progression of the disease by addressing the symptoms.

That antioxidants such as vitamin C have a protective effect against a number of diseases, from the common cold to heart attacks and dementia, has long been a current focus of research.

“The notion that vitamin C can have a positive effect on Alzheimer’s disease is controversial, but our results open up new opportunities for research into Alzheimer’s and the possibilities offered by vitamin C”, says Katrin Mani.

Source: Lund University Newspost; Aug. 18, 2011; http://www.lunduniversity.lu.se/o.a.i.s/id=24890&news_item=5638.
Soy Tablets Not Associated With Reduction in Bone Loss or Menopausal Symptoms in Women

Soy isoflavone tablets do not appear to be associated with a reduction in bone loss or menopausal symptoms in women within the first five years of menopause, according to a report in the Archives of Internal Medicine.

The beginning stages of menopause are often accompanied by rapid bone loss, hot flashes, vaginal dryness and sleep disturbances among other symptoms, according to background information in the article. "Estrogen therapy with or without progesterone prevents most of these changes. However, as a result of the Women's Health Initiative findings suggesting that the overall risks outweigh the benefits, most menopausal women now decline estrogen therapy, increasingly seeking other alternatives," the authors write. "Soy-derived products have been proposed to provide comparable benefits to estrogens but without the risks."

Silvina Levis, M.D., of the Miami Veterans Affairs Healthcare System and Miller School of Medicine, University of Miami, and colleagues, conducted a randomized controlled trial from July 2004 to March 2009 to determine the effectiveness of soy isoflavone tablets in preventing bone loss and other menopausal symptoms. Study participants received a soy isoflavone dose equivalent to approximately two times the highest intake through food sources in a typical Asian diet to ensure they received an effective dose. Women 45 to 60 years of age, within five years of menopause and with a bone mineral density T score (bone density compared with what is normally expected in a healthy young adult of the same sex) of -2.0 or higher in the lumbar spine or total hip were eligible for the study.

A total of 248 women were eligible for the study; 126 were randomized to the group receiving placebo tablets and 122 were randomized to the soy isoflavone group, who received 200 mg of soy isoflavone tablets daily. During two years of follow-up, no significant differences were found between women in the soy isoflavone group and placebo group regarding changes in bone mineral density of the spine (-2 percent vs. -2.3 percent), the total hip (-1.2 percent vs. -1.4 percent) or the femoral neck (-2.2 percent vs. -2.1 percent), respectively.

Additionally, the number of menopausal symptoms was comparable between the two groups at baseline and the end of the study, except hot flashes. At the end of the study, 48.4 percent of women in the soy isoflavone group and 31.7 percent of women in the placebo group reported hot flashes. The authors also found that a higher number of women in the soy group reported constipation compared with women taking placebo (31.2 percent vs. 20.6 percent) but this was not statistically significant.

"Because of concerns regarding the risk of estrogens, a need exists for alternative interventions that could provide the beneficial effects of estrogens in bone and menopausal symptoms without the adverse effects on breast and cardiovascular health," the authors conclude. However, "we found that our population of women in the first five years of menopause, on average, had low rates of bone loss, and that 200 mg of soy isoflavone tablets taken once daily does not prevent bone loss or reduce bone turnover or menopausal symptoms."


Vitamin D Levels Appear to Be Associated With Risk of Skin Cancer, Although Relationship Is Complex

As an individual's level of vitamin D increases, the risk of nonmelanoma skin cancer (NMSC) seems to increase as well, although factors such as ultraviolet (UV) radiation exposure may complicate the relationship, according to a report published in the Archives of Dermatology (1).

According to background information in the article, NMSC is the most common malignant tumor in the United States, and more cases of this cancer are diagnosed each year than prostate, lung, colorectal, ovarian and breast cancer combined. Prior research has found a clear association between radiation from the sun and skin cancer, with UV exposure believed to be an important risk factor for NMSC. Although UV-B exposure causes the body to create vitamin D, the authors note that "evidence of the association of vitamin D levels with skin cancer has been inconsistent," especially the relationship between NMSC and serum (circulating) vitamin D levels. Some research suggests vitamin D could reduce the risk for basal cell carcinoma (BCC), the most common subtype of NMSC; squamous cell carcinoma (SCC) is another form. The authors sought to understand more about the relationship between serum levels of vitamin D and the risk of both BCC and SCC.

Melody J. Eide, M.D., M.P.H., and colleagues from Henry Ford Hospital, Detroit, conducted a study among 3,223 white members of a health maintenance organization (HMO) who had a high probability of developing NMSC. Between January 1997 and December 2001, participants had sought counseling regarding osteoporosis or low-bone density; the mean (average) length of follow-up was 9.8 years. Assessment included levels of serum 25-hydroxyvitamin D (25-OHD, an indicator of vitamin D levels) as well as parathyroid hormone, creatinine and calcium levels. The HMO claims database was used to identify cases of NMSC, including BCC and SCC.

More than two-thirds of participants (n = 2,257) appeared to have insufficient levels of vitamin D. Diagnoses of NMSC were made in 240 patients, including 49 cases of SCC, 163 cases of BCC and 28 cases in which patients developed both forms. Individuals who were not deficient in vitamin D appeared to have an increased risk of developing NMSC, even when researchers considered other risk factors. The association between 25-OHD and NMSC appeared positive but not statistically significant for tumors that developed on body parts not routinely exposed to UV radiation (such as the trunk, arms and legs).

The authors write that their findings contribute "to the limited and conflicting epidemiological investigation regarding the relationship between vitamin D and NMSC." Aside from the role of UV radiation, patients’ historical vitamin D levels and consumption of vitamin D supplements could be confounders. The authors suggest that more research into these relationships is needed "to further elucidate the highly complex relationship between vitamin D and NMSC."


Neighborhood Fast Food Availability Related to an Individual's Fast Food Consumption

Living near fast-food restaurants appears related to an individual's consumption of these foods whereas living near grocery stores and supermarkets appears generally unrelated to dietary quality, according to a report in the Archives of Internal Medicine (1).

The federal government has made one of its priorities reducing "food deserts," areas in which healthy food is difficult to find, according to background information in the article. "Such policies stem from limited evidence that food resources are related to obesity and are inequitably allocated according to neighborhood wealth," write the authors. "Implicit in these policy initiatives is that reduced access to fast food and increased access to supermarkets will translate into improvements in diet behavior and health."

Janne Boone-Heinonen, Ph.D., from the University of North Carolina at Chapel Hill, and colleagues assessed this assumption using data from the Coronary Artery Risk Development in Young Adults study, from its baseline in 1985 until 2001. The authors evaluated fast food consumption, diet quality and adherence to fruit-and-vegetable-consumption guidelines as a function of fast food chain, supermarket or grocery store availability within distances of less than one kilometer to more than eight kilometers from study participants' homes. The 5,115 participants (ages 18 to 30 years at baseline) in Birmingham, Ala.; Chicago; Minneapolis; and Oakland were asked how often they ate fast food, and detailed their food consumption during the prior month as well as usual dietary habits.

Among participants at lower income levels, an association between fast food consumption and fast food availability was observed. This relationship was particularly noticeable among men who had access to fast food between one and three kilometers from where they live. The findings did not suggest strong relationships between supermarkets and diet quality or consumption of fruits and vegetables. Availability of grocery stores had a mixed relationship with eating habits.

"These findings have critical implications for existing and proposed policies aimed at improving access to healthy foods," write the researchers. "Overall, classification of food stores and restaurants into 'healthy' or 'unhealthy' according to mode of service (fast food or sit-down) or size (supermarket vs. grocery store) may provide little understanding of how the food environment impacts diet and may overlook innovative policy solutions." The authors call for further research into the effect of the neighborhood food environment on diet and consumption.


Source: Archives News Releases; July 11, 2011; http://pubs.ama-assn.org/media/2011a/0711.dtl#3
College Students Not Eating Enough Fruits and Veggies

College students aren’t eating enough fruits and vegetables – in fact, a new study shows students aren’t even eating one serving per day, far from the recommended five daily servings (1).

The study by Oregon State University researchers surveyed the eating habits of 582 college students, a majority of which were first-year students. The study, now online in the *Journal of Nutrition Education and Behavior*, compares male and female students, but found that both were not getting the proper amount of fruits and vegetables. Male students had about five servings a week, slightly higher than female students who self-reported eating about four servings of fruits and vegetables.

Female students had lower fiber intake, while males tended to consume more fat in their diet. Overall, the females had better eating habits, including skipping fewer meals, eating in the college dining halls more frequently, and reading food labels.

“We found that students skipped meals fairly frequently, which could account for some of the lack of fruits and veggies,” said Brad Cardinal, a professor of exercise and sport science at Oregon State University and one of the study’s authors. “Still, even accounting for fewer meals consumed, the students were on average not always eating even one serving of fruits or vegetables per day, far below the USDA guidelines.”

Both males and females were consuming more than 30 percent of their calories from fat, which exceeds the American Dietetic Association’s recommendation of no more than 30 percent a week.

Cardinal, who is an expert in the psychological and social aspects of health and exercise, said the larger take-away message is that proper eating and nutrition is not integrated enough into our society. He said the surveyed students came from OSU, where healthy options are available in dining halls.

“We are not teaching youth how to be self-sustaining,” Cardinal said. “Home economics and nutrition classes have all but disappeared from our schools in the K-12 system. There is a fundamental lack of understanding on how to eat well in a very broad sense.”

Cardinal said studies show that when people prepare food at home they tend to eat better and consume fewer calories. He said their survey showed that students ate out a lot and consumed at least one fast food meal per week.

“We have a cooking camp for (elementary school) kids here at OSU that teaches kids how to shop for their food, prepare it and then clean up after themselves,” he said. “These are essential skills every child should know, and it will stay with them long after they leave school.”

Cardinal pointed to recent concerning trends, such as in Texas where health education is no longer required by the state. In addition, many school districts, including ones in Oregon, have cut home economics/nutrition classes due to budget constraints.

“Health is an area being neglected, yet all the available research show that healthy habits and healthy kids can lead to better academic success,” Cardinal said. “We are doing a disservice to our kids by not teaching them these essential life skills.”


Teaching middle-school children about nutrition and exercise and encouraging them to watch less TV can save the health care system a substantial amount of money, suggests an economic analysis from Children’s Hospital Boston and the Centers for Disease Control and Prevention.

Using data from a randomized, controlled study conducted at 10 Massachusetts middle schools, five of which adopted the obesity prevention curriculum Planet Health, the researchers created a model projecting a net savings of $14,000 for the 254 girls receiving the curriculum, by averting the costs of treating obesity and eating disorders. They project that expanding the program to even just 100 schools could save the health care system $680,000.

The study, published in the August issue of the Archives of Pediatrics & Adolescent Medicine, was led by S. Bryn Austin, ScD, an epidemiologist in Children’s Hospital Boston’s Division of Adolescent Medicine, and CDC health economist Li Yan Wang.

Planet Health, developed at the Harvard School of Public Health, is a curriculum for academic, physical education and health education teachers to guide middle-school students in choosing healthy foods, increasing physical activity and limiting TV and other screen time. It provides teacher training, lesson plans, materials and FitCheck, a self-assessment tool for students.

In an earlier study of 10 middle schools, half offering the Planet Health program and half offering regular programs (schools were matched by town, school size and ethnic composition), obesity prevalence declined in the schools with Planet Health but increased in control schools over the two years of follow-up. In addition, overweight girls in Planet Health schools were twice as likely as girls in control schools to return to a healthy weight over the two years (2). Unexpectedly, girls in Planet Health schools were also less than half as likely as girls in control schools to begin purging or using diet pills to control their weight (3); this study was later replicated in a separate group of middle schools (4). The effects were not statistically significant for boys.

“We were really surprised and encouraged to see how protective Planet Health was for eating disorder symptoms in girls,” says Austin, the study’s senior author. "When we found the same protective effect — cutting the risk for girls in half -- in a different set of middle schools several years later, we knew we were on to something important.

Bulimia typically develops in adolescence, and often begins with a few behaviors, such as using diet pills or purging to control weight. Full-blown bulimia is a life-threatening disorder that carries a variety of medical complications such as electrolyte imbalances, dehydration, metabolic alkalosis (an imbalance in the body's acid/base balance), heart rhythm disturbances, tooth erosion and bowel dysfunction.

“Eating disorders cause an enormous amount of suffering,” says Austin. “They can also be chronic and expensive to treat, which is often a big financial burden on individuals, their families, and society. That’s what led us to want to do the economic study.”

In their economic analysis, Austin and Wang first estimate that 3.4 percent of girls receiving the

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Planet Health intervention would be prevented from developing disordered weight-control behaviors by the age of 13½, based on numbers from the original randomized study (7 of 254 girls in the Planet Health schools, or 2.8 percent, developed these behaviors, versus 14 of 226 controls, or 6.2 percent). Based on current knowledge about the progression of eating disorders, they calculate that, in turn, 1 case of bulimia would be prevented by the age of 17 among the 254 girls.

Factoring in typical treatment costs -- which can be tens of thousands of dollars over a decade -- and known rates of remission and relapse, Austin and Wang estimate that an average of $34,000 would be saved by preventing one girl in the five Planet Health study schools from developing bulimia nervosa. Adding Wang's previous finding of $27,042 in savings resulting from prevention and reduction of obesity in the same schools (5), the program would yield a net savings of $14,238 after subtracting the $46,803 cost of offering Planet Health in those schools.

“Because eating disorders can be so expensive to treat, preventing even one case in the five Planet Health schools translated into reducing medical costs by $34,000,” says Austin. “But if we scale up our calculations to include, say, 100 middle schools in Massachusetts, the medical costs reduced by preventing bulimia increase to over half a million dollars. And if we scale up nationwide, to say 1,000 schools, the potential reduction in the medical cost burden is sizable.”

Austin notes that obesity prevention programs that stigmatize obesity or create a sense of blame can actually contribute to eating disorders. “We need to be smart about choosing obesity prevention strategies that, at the same time, can prevent eating disorders,” she says. “Our study shows that when we do both, we substantially increase the benefits, both in terms of health and reducing medical costs.”


Source: Children’s Hospital Boston Newsroom; Aug. 1, 2011; http://www.childrenshospital.org/newsroom/Site1339/mainpageS1339P755.html

A Glimpse at 'Gluten-Free' Food Labeling

Whether as muffins, rolls, or loaves, wheat bread is found in most households. But few consumers may appreciate the substance that helps the dough rise, keeps the bread from falling apart, makes it chewy, and adds to its flavor.

That substance is gluten. Breads, cakes, cereals, pastas, and many other foods are made with wheat or added wheat gluten to improve their baking quality and texture.

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Technically, gluten represents specific proteins that occur naturally in wheat. However, the term “gluten” is commonly used to refer to certain proteins that occur naturally not only in wheat, but also in rye, barley, and crossbreeds of these grains and that can harm people who have celiac disease. The only treatment for this disorder is a life-long gluten-free diet.

Eating gluten doesn’t bother most consumers, but some people with celiac disease have health-threatening reactions, says Stefano Luccioli, M.D., a Food and Drug Administration (FDA) allergist and immunologist. They need to know whether a food contains gluten.

FDA has been working to define “gluten-free” to:

• Eliminate uncertainty about how food producers may label their products.
• Assure consumers who must avoid gluten that foods labeled “gluten-free” meet a clear standard established and enforced by FDA.

FDA’s actions on Aug. 2 bring the agency one step closer to a standard definition of “gluten-free.” On this date:

• FDA reopens the public comment period on its proposed gluten-free labeling rule published on Jan. 23, 2007.
• FDA makes available, and seeks comments on, a report on the health effects of gluten in people with celiac disease. The report includes a safety assessment on levels of gluten sensitivity in people with the disease.

Celiac Disease

According to the National Institutes of Health, celiac disease affects as many as 1 percent of the U.S. population.

The disease occurs when the body’s natural defense system reacts to gluten by attacking the lining of the small intestine. Without a healthy intestinal lining, the body cannot absorb the nutrients it needs. Delayed growth and nutrient deficiencies can result and may lead to conditions such as anemia and osteoporosis. Other serious health problems may include diabetes, autoimmune diseases, and intestinal cancers.

“Some people don’t get immediate symptoms, but when they do, they are typically gastrointestinal-related, such as abdominal pain, bloating, and diarrhea,” says Luccioli. “In infants, there may be a lot of vomiting, and they don’t grow and thrive.” And some people do not have any symptoms at all, adds Luccioli, but still may have intestinal damage and risk for long-term complications. It is important for individuals with celiac disease, who may vary in their sensitivity to gluten, to discuss their dietary needs with their health care professional.

Grocery shopping is challenging for people with this disease, says Andrea Levario, J.D., executive director of the American Celiac Disease Alliance.

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Gluten-Free (Continued from page 14)

“When they find a product labeled ‘gluten-free,’ they don’t necessarily know what that means because today there is no federal standard for the use of this term.”

Having a federal definition of “gluten-free” is critically important, says Levario. “If we have one national standard, the individual will know that all products labeled ‘gluten-free’ will have no more than a minimal amount of gluten.”

Is Gluten-Free for Me?

“Eating gluten-free is not meant to be a diet craze,” says Rhonda Kane, a registered dietitian and consumer safety officer at FDA. “It’s a medical necessity for those who have celiac disease.”

“There are no nutritional advantages for a person not sensitive to gluten to be on a gluten-free diet,” she adds. “Those who are not sensitive to gluten have more flexibility and can choose from a greater variety of foods to achieve a balanced diet.”

Gluten-free is not synonymous with low fat, low sugar, or low sodium. For people who must be on a gluten-free diet, Kane says it’s important to check the ingredients list and Nutrition Facts information on food labels to find the most nutritious options.

How Is FDA Proposing to Define ‘Gluten-Free’?

In 2007, FDA proposed to allow manufacturers to label a food “gluten-free” if the food does not contain any of the following:

1. An ingredient that is any type of wheat, rye, barley, or crossbreeds of these grains
2. An ingredient derived from these grains and that has not been processed to remove gluten
3. An ingredient derived from these grains and that has been processed to remove gluten, if it results in the food containing 20 or more parts per million (ppm) gluten
4. 20 ppm or more gluten

In the notice reopening the comment period, FDA states that it continues to believe the proposed definition of “gluten-free” is the correct one.

FDA’s notice also describes current analytical methods that can reliably and consistently detect gluten at levels of 20 ppm or more in a variety of foods.

The agency is interested in hearing from the public and industry. The public comment period on the proposed rule officially opened on Aug. 3, 2011, and will remain open for 60 days. To submit comments electronically, go to www.regulations.gov and

1. Choose “Submit a Comment” from the top task bar
2. Enter the docket number FDA-2005-N-0404 in the “Keyword” space
3. Select “Search”

After FDA reviews and considers the comments, the agency will issue a final rule that defines “gluten-free” for labeling food products, including dietary supplements.

Source: FDA Consumer Updates; Aug. 2, 2011; http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm265212.htm
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