Formula-fed Babies May be More Susceptible to Chronic Disease, Study Finds

Formula-fed infants experience metabolic stress that could make them more susceptible than breast-fed infants to a wide range of health issues such as obesity, diabetes, liver problems and cardiovascular disease, according to new research at the University of California, Davis (1).

A study by biochemists Carolyn Slupsky and Bo Lönnerdal, both of the UC Davis Department of Nutrition, sheds new light on the link between infant formula feeding and increased risk of chronic diseases later in life. The findings were reported in the June issue of the Journal of Proteome Research.

“We’re not saying formula-fed babies will grow up with health issues, but these results indicate that choice of infant feeding may hold future consequences,” said Slupsky, lead author of the study and also a faculty member in the UC Davis Department of Food Science and Technology.

Slupsky and her colleagues used nuclear magnetic resonance spectroscopy to look at how diet affects compounds in blood and urine in infant rhesus monkeys, which provide an animal model similar to humans in this type of research. After just four weeks, the formula-fed infants were larger than their breast-fed counterparts, had developed distinct bacterial communities in their gut, had higher insulin levels and were metabolizing amino acids differently.

Formula continued on page 2
“Our findings support the contention that infant feeding practice profoundly influences metabolism in developing infants and may be the link between early feeding and the development of metabolic disease later in life,” Slupsky said.

The formula-fed babies grew quickly — perhaps too quickly — which researchers link, in part, to excess protein.

“You want your baby to grow, of course, but growing too quickly is not such a good thing,” said Slupsky, who hopes her findings will help new mothers and the physicians who advise them make informed choices about what to feed their babies.

“Mother’s milk is an excellent source of nutrition that can’t be duplicated,” she said. For parents who formula-feed their infant, Slupsky hopes the science can lead to more beneficial formulas.

“Knowing what we now know, perhaps infant formulas that better mimic the protective effects of breast milk can be generated,” she said.

Slupsky and her team are now working to compare how compounds in breast milk differ between mothers and at different times during lactation, as well as how different formulas with varying nutrient content affect infant metabolism.

Reference:


Taxing Sugary Beverages Not a Clear Cut Strategy to Reduce Obesity

Taxing sugary beverages may help reduce calories from these beverages in the United States, but the health benefits may be partially offset as consumers substitute with other unhealthy foods, according to a joint study by researchers at Research Triangle Institute (RTI) International, Duke University, and the U.S. Department of Agriculture (1).

The study, published online in the *American Journal of Agricultural Economics*, found that a half-cent per ounce increase in sugar-sweetened beverage prices, which adds up to about ten cents on a typical 20-ounce bottle of soda, could reduce total calories from the 23 foods and beverages examined under the study.

However, researchers found, the reduction in sugary beverages due to a soda tax would likely lead consumers to substitute those beverage calories by increasing their calorie, salt and fat intake from untaxed foods and beverages.

“Instituting a sugary beverage tax may be an appealing public policy option to curb obesity, but it’s not as easy to use taxes to curb obesity as it is with smoking,” said Chen Zhen, Ph.D., a research economist at RTI, and the paper’s lead author. “Consumers can simply substitute an untaxed high calorie food for a taxed one. And as we know, reducing calories is just one of many ways to promoting healthy eating and reducing nutrition-related chronic disease.”

The study also examined differences in purchase behavior between lower and higher income households. Compared to higher income families’ purchases, foods and beverages purchased by lower income families tend to be higher in calories, fat and sodium content on average.

“Because lower-income families tend to buy more sugary soft drinks than higher income families, they would more readily reap the health benefits of reduced sugary beverage intake,” Zhen said. “However, they would also pay more in beverage taxes, making it a regressive tax.”

To conduct the study, researchers used data on household food purchases from the 2006 Nielsen Homescan panel, a large national consumer panel maintained by the Nielsen Company. Families in the panel are provided with a handheld scanner and instructed to scan the Universal Product Code (UPC) of products they purchased at retail outlets, record purchase quantities and coupons used and identify the retailer that the product was purchased from.

Obesity rates in the United States are about 36 percent for adults and 17 percent for children and adolescents. A previous RTI study found that medical costs associated with obesity are estimated at $147 billion or more per year.

Reference:


How State and Local Governments Can Address the Obesity Epidemic

With simple and innovative measures, public agencies at state and local levels can play a significant role in promoting healthier eating habits—steps that could make a difference in curbing the nation’s obesity epidemic. One effective option, according to researchers at the Johns Hopkins Bloomberg School of Public Health, is requiring restaurants to include calorie counts on menus, along with the physical activity equivalents required to burn off a meal (1). The researchers, who examined studies on calorie labeling and regulatory options available to local governments, offer several recommendations to enhance the effectiveness of menu labeling. The suggestions are especially applicable to chain restaurants with fewer than 20 locations, a category that represents more than half of the restaurants in the U.S. These eateries are not subject to the federal Affordable Care Act’s menu-labeling provision. It requires chain restaurants with more than 20 locations to provide calorie information on their menus and menu boards, as well as a statement addressing daily recommended caloric intake. The findings are featured in the New England Journal of Medicine.

“The current standard is for restaurant menu boards to present information as the absolute number of calories, such as telling customers that a hamburger has 450 calories. If customers do not understand what 450 calories means or how it fits into their overall daily requirements, posting that information on menu boards may not be that useful,” said Sara N. Bleich, PhD, lead author of the Perspective and an associate professor with the Bloomberg School’s Department of Health Policy and Management. “All of the recent research suggests that if you make calorie information easy for consumers to understand you have a bigger impact on their purchasing behavior. This is particularly true for minority groups at higher risk for obesity since they often have lower than average levels of nutritional literacy.”

The authors recommend presenting calorie information to consumers in the form of a physical activity equivalent, e.g., telling consumers the amount of running required to burn off a particular food or beverage. According to the authors, this approach has been shown to reduce calorie consumption and lead to healthier choices. A 2011 study led by Bleich and colleagues examined the impact of calorie information on beverage choices and found that consumers were half as likely to buy a sugary beverage when presented with caloric information in the form of a physical activity equivalent. Another recommendation is that restaurants change their menu default options such as replacing default fries and soda in a kid-friendly meal with apple slices and low fat milk.

According to the authors, empirical research has shown that changing the default items by listing healthy choices on the front of a menu is significantly associated with the purchase of lower-calorie sandwiches, whereas simply listing the calories on a menu is not as effective. The authors call for state and local governments to craft innovative menu-labeling regulations that focus on smaller chain Government continued on page 5
Government (Continued from page 4)

restaurants and build on the current scientific data.

“A state or local government could pass a menu-labeling regulation that requires restaurants with fewer than 20 locations to list their lowest calorie food items first to encourage the selection of healthier, lower calorie items,” said Lainie Rutkow, JD, PhD, MPH, co-author of the Perspective and an assistant professor with the Bloomberg School’s Department of Health Policy and Management. “As the Food and Drug Administration finalizes the federal menu-labeling regulations, which will include specific requirements for how calorie information is presented on menus and menu boards, it’s important to consider the opportunities that remain for states and localities. Local governments are well positioned to augment the potential effectiveness of the Affordable Care Act’s menu-labeling provisions, in part, because they have already begun engaging in innovative regulatory activity related to obesity prevention.”

Reference:


Ease of Access Improves Fruit and Vegetable Consumption

Low-income communities have particular problems getting adequate fruits and vegetables because of limited access to supermarkets and farmers markets. A new study from Wake Forest Baptist Medical Center shows that community-supported agriculture (CSA) programs may be a feasible approach for providing fresh fruits and vegetables to under-resourced communities (1).

Lead author Sara A. Quandt, Ph.D., a professor of epidemiology and prevention at Wake Forest Baptist, said that CSAs, which link consumers to a local farm’s produce over a growing season, have been proposed as a solution for disparities in fruit and vegetable consumption, though evaluation of such efforts has been limited. The typical U.S. diet fails to meet daily recommendations for fruit and vegetable consumption.

This CSA program, Farm Fresh Healthy Living of Forsyth County, N.C., was developed, administered, and evaluated by a partnership of

Access continued on page 6
university researchers, Experiment in Self Reliance Inc., a community nonprofit agency, and Harmony Ridge Farms, a Forsyth County, N.C., farm using organic practices.

"Expanding access to healthful foods is an important step in reducing health disparities," said Quandt. "The objective of this study was to test the feasibility of a CSA program for low-income families in Forsyth County."

The study appears the journal Preventing Chronic Disease.

For a small randomized, controlled feasibility study, Quandt and fellow researchers recruited 50 low income women with children, then divided them into an intervention group and a control group of 25 each. The participants ranged in age from 24 to 60; most were African-American and unmarried.

Intervention participants received a free box of fresh produce for 16 weeks from May through August 2012. They were also offered five educational sessions, including cooking classes, a farm tour and a grocery store tour with a dietitian that focused on healthful eating on a budget. The control participants did not receive education or the produce boxes.

The researchers observed a significant increase over the summer in the number of different fruits and vegetables in the households of the intervention group compared with the control group. The intervention group also reported greater increases in fruit and vegetable consumption.

"Although the increases in fruit and vegetable consumption in the intervention group did not reach statistical significance, they did show a trend in the right direction," said Quandt. "In a larger group, we would expect that the CSA program would make a noticeable impact on quality of the families' diets."

Intervention participants reported a willingness to pay at least a portion of the CSA cost in the future. In an overall evaluation of the Farm Fresh Healthy Living program, the participants reported positively on the variety of the produce provided, the better flavor of the local produce compared with grocery store produce, the chance to expose children to new foods.

Some indicated problems with work schedules and transportation in picking up their produce box every week.

"This study shows that food from a CSA program has positive effects on recipient households," said Quandt. "CSA is a feasible approach and more study is needed. Altering some of the financial and operational aspects of traditional CSA programs will be necessary to improve the participation impact."

Reference:

Vegetarian dietary patterns are associated with lower mortality compared with the nonvegetarian dietary pattern.

Vegetarian diets are associated with reduced death rates in a study of more than 70,000 Seventh-day Adventists with more favorable results for men than women, according to a report published by JAMA Internal Medicine (1).

The possible relationship between diet and mortality is an important area of study. Vegetarian diets have been associated with reductions in risk for several chronic diseases, including hypertension, metabolic syndrome, diabetes mellitus and ischemic heart disease (IHD), according to the study background.

Michael J. Orlich, M.D., of Loma Linda University in California, and colleagues examined all-cause and cause-specific mortality in a group of 73,308 men and women Seventh-day Adventists. Researchers assessed dietary patients using a questionnaire that categorized study participants into five groups: nonvegetarian, semi-vegetarian, pesco-vegetarian (includes seafood), lacto-ovo-vegetarian (includes dairy and egg products) and vegan (excludes all animal products).

The study notes that vegetarian groups tended to be older, more highly educated and more likely to be married, to drink less alcohol, to smoke less, to exercise more and to be thinner.

“Some evidence suggests vegetarian dietary patterns may be associated with reduced mortality, but the relationship is not well established,” the study notes.

There were 2,570 deaths among the study participants during a mean (average) follow-up time of almost six years. The overall mortality rate was six deaths per 1,000 person years. The adjusted hazard ratio (HR) for all-cause mortality in all vegetarians combined vs. nonvegetarians was 0.88, or 12 percent lower, according to the study results. The association also appears to be better for men with significant reduction in cardiovascular disease mortality and IHD death in vegetarians vs. nonvegetarians. In women, there were no significant reductions in these categories of mortality, the results indicate.

“These results demonstrate an overall association of vegetarian dietary patterns with lower mortality compared with the nonvegetarian dietary pattern. They also demonstrate some associations with lower mortality of the pesco-vegetarian, vegan and lacto-ovo-vegetarian diets specifically compared with the nonvegetarian diet,” the authors conclude.

Reference:

Study Evaluates Calories, Fat, and Sodium Content in Restaurant Meals

A research letter by Mary R. L’Abbe, Ph.D., of the University of Toronto, Canada, and colleagues examined the nutritional profile of breakfast, lunch, and dinner meals from sit-down restaurants (SDR). (1)

A total of 3,507 different variations of 685 meals, as well as 156 desserts from 19 SDRs were included in the study. Nutrients evaluated included calories, fat, saturated fat, and sodium; excess consumption of these nutrients is associated with obesity, hypertension, heart disease, diabetes, and cancer. Nutrient values were calculated as a percentage of the daily value (%DV).

Researchers found on average, breakfast, lunch, and dinner meals contained 1,128 calories (56 percent of the average daily 2,000 calories recommendation), 151 percent of the amount of sodium an adult should consume in a single day (2,269 milligrams), 89 percent of the daily value for fat (58 grams), 83 percent of the daily value for saturated and trans fat (16 grams of saturated fat and 0.6 grams of trans fat), and 60 percent of the daily value for cholesterol (179 grams).

“Overall, the results of this study demonstrate that calories, fat, saturated fat, and sodium levels are alarmingly high in breakfast, lunch, and dinner meals from multiple chain SDRs. Therefore, addressing the nutritional profile of restaurant meals should be a major public health priority,” the study concludes.

Reference:


Sleep Deprivation Linked to Junk Food Cravings

A sleepless night makes us more likely to reach for doughnuts or pizza than for whole grains and leafy green vegetables, suggests a new study from UC Berkeley that examines the brain regions that control food choices (1). The findings shed new light on the link between poor sleep and obesity.

Study finds that sleep deprivation can make us crave junk food more than healthy food.

Using functional magnetic resonance imaging (fMRI), UC Berkeley researchers scanned the brains of 23 healthy young adults, first after a normal night’s sleep...
Sleep (Continued from page 8)

and next, after a sleepless night. They found impaired activity in the sleep-deprived brain’s frontal lobe, which governs complex decision-making, but increased activity in deeper brain centers that respond to rewards. Moreover, the participants favored unhealthy snack and junk foods when they were sleep deprived.

“What we have discovered is that high-level brain regions required for complex judgments and decisions become blunted by a lack of sleep, while more primal brain structures that control motivation and desire are amplified,” said Matthew Walker, a UC Berkeley professor of psychology and neuroscience and senior author of the study published in the journal Nature Communications.

Moreover, he added, “high-calorie foods also became significantly more desirable when participants were sleep-deprived. This combination of altered brain activity and decision-making may help explain why people who sleep less also tend to be overweight or obese.”

Previous studies have linked poor sleep to greater appetites, particularly for sweet and salty foods, but the latest findings provide a specific brain mechanism explaining why food choices change for the worse following a sleepless night, Walker said.

“These results shed light on how the brain becomes impaired by sleep deprivation, leading to the selection of more unhealthy foods and, ultimately, higher rates of obesity,” said Stephanie Greer, a doctoral student in Walker’s Sleep and Neuroimaging Laboratory and lead author of the paper. Another co-author of the study is Andrea Goldstein, also a doctoral student in Walker’s lab.

In this newest study, researchers measured brain activity as participants viewed a series of 80 food images that ranged from high- to low-calorie and healthy and unhealthy, and rated their desire for each of the items. As an incentive, they were given the food they most craved after the MRI scan.

Food choices presented in the experiment ranged from fruits and vegetables, such as strawberries, apples and carrots, to high-calorie burgers, pizza and doughnuts. The latter are examples of the more popular choices following a sleepless night.

On a positive note, Walker said, the findings indicate that “getting enough sleep is one factor that can help promote weight control by priming the brain mechanisms governing appropriate food choices.”

Reference:


Source: Yasmin Anwar. UC Berkeley News Center. August 6, 2013; http://newscenter.berkeley.edu/2013/08/06/poor-sleep-junk-food/
Obese Patients Trust Diet Advice from Overweight Physicians More than Normal Weight Physicians

When it comes to taking diet advice from a physician—size matters. This is according to a new study led by a team of researchers at the Johns Hopkins Bloomberg School of Public Health and the Johns Hopkins University School of Medicine who examined the impact of primary care physician BMI (body mass index) on their patients’ trust and perceptions of weight-related stigma (1). They found that overweight and obese patients trust weight-related counseling from overweight physicians more than normal weight physicians and patients seeing an obese primary care physician were more likely to perceive weight-related stigma. The results are featured online in the June 2013 issue of Preventive Medicine.

“With respect to overall trust, our results suggest that overweight and obese patients trust their primary care physicians, regardless of their body weight,” said Sara Bleich, PhD, associate professor with the Bloomberg School’s Department of Health Policy and Management. “However, with respect to trust in weight-related advice, we found that patients more strongly trusted diet advice from overweight primary care physicians as compared to normal BMI primary care physicians. In addition, we found that patient perceptions of weight-related stigma increased with physician BMI. Patients seeing obese primary care physicians, as compared to normal BMI physicians, were significantly more likely to report feeling judged because of their weight.”

Using a national cross-section survey of 600 overweight and obese patients, researchers examined overall trust and trust in weight-related counseling from their primary care physicians. Overall trust was assessed by asking, “Using any number from 0 to 10, where 0 means that you do not trust this doctor at all and 10 means that you trust this doctor completely, what number would you use to rate how much you trust this doctor?” While, trust in weight-related advice was assessed by the survey question: “How much do you trust the advice from this doctor about how to control your weight; improve your diet or increase your physical activity, a great deal; a good amount; only some or very little?” Bleich and colleagues conducted multivariate regression analyses to determine whether trust or perceived stigma differed by physician BMI.

“While weight-related stigma has been documented among health professionals for decades, as well as lower physician respect towards patients with a higher BMI, our finding that weight-related stigma increases with physician BMI was quite surprising,” notes Bleich. “Recent changes to obesity coverage among the publicly insured makes

Trust continued on page 9
understanding primary care physicians’ barriers to providing effective obesity care critical. Existing research suggests that primary care physicians face numerous challenges to providing optimal obesity care which include knowledge deficits, negative attitudes and structural barriers. Future research should further examine the impact of physician BMI on obesity care. In particular, why patient-perceived physician stigma is higher among heavier primary care physicians and why the patterns we observed between physician BMI and trust in weight-related counseling differ by the type of counseling.”

Reference:


Study Examines Relationship of Early Life Risk Factors And Racial/Ethnic Disparities in Childhood Obesity

Racial and ethnic disparities in children who are overweight and obese may be determined by risk factors in infancy and early childhood, according to a study published by JAMA Pediatrics (1).

Over three decades, the rates of overweight and obesity among children have substantially increased worldwide. In the United States, the prevalence is estimated to be 32 percent among children and adolescents, according to the study background.

Elsie M. Taveras, M.D., M.P.H., now of the MassGeneral Hospital for Children, Boston, and colleagues examined which racial and ethnic disparities were explained by factors during pregnancy (gestational diabetes and depression), infancy (rapid infant weight gain, feeding other than exclusive breastfeeding and early introduction of solid foods), and early childhood (sleeping less than 12 hours per day, a television in the room where the child sleeps and any intake of sugar-sweetened beverages or fast food). Study participants included 1,116 mother-child pairs (63 percent white, 17 percent black and 4 percent Hispanic).

“Many early life risk factors for childhood obesity are more prevalent among blacks and Hispanics than among whites and may explain the higher prevalence of obesity among racial/ethnic minority children,” the study notes.

Black and Hispanic children had higher body-mass index (BMI) z scores, along with higher total fat mass index and overweight/obesity prevalence than white children. Differences in the BMI z score were attenuated (reduced) for black and Hispanic children when adjustments were

Disparities continued on page 12
made for socioeconomic confounders and parental BMI. But adjustments for pregnancy risk factors did not appear to substantially change these estimates.

However, there appeared to be only minimal differences in BMI z scores between whites, blacks and Hispanics when further adjustments were made for infancy and childhood risk factors, the results indicate.

“We found that the prevalence of overweight and obesity among black and Hispanic children at age 7 years was almost double that of white children. Our findings suggest that racial/ethnic disparities in childhood obesity may be explained by factors operating in infancy and early childhood and that eliminating these factors could eliminate the disparities in childhood obesity,” the authors conclude.

Reference:


Community-based Programs May Help Prevent Childhood Obesity

When it comes to confronting childhood obesity, researchers at the Johns Hopkins Bloomberg School of Public Health conclude that community-based approaches are important (1). A systematic review of childhood obesity prevention programs found that community-based intervention programs that incorporate schools and focus on both diet and physical activity are more effective at preventing obesity in children. The results of the study appear online in Pediatrics.

Community continued on page 13
“In measuring the effectiveness of community-based programs that impact childhood obesity – more comprehensive interventions are definitely better,” said Sara Bleich, PhD, associate professor of Health Policy and Management and lead author on the paper. “The research shows that in order to help prevent obesity among children, we must focus on both diet and exercise in the communities where children live and go to school since the environment is a key contributor to obesity risk. Focusing on the community is especially important for children since they generally have little or no control over their environment.”

This shift toward a stronger community focus is echoed in a recent Institute of Medicine (IOM) report, *Accelerating Progress in Obesity Prevention*, which recommends a comprehensive approach to childhood obesity prevention that includes the community.

Researchers examined nine studies that featured community-based interventions and found that, among those, the two interventions that included a school component effectively prevented obesity or overweight in children. Common characteristics found across most of the nine studies included the use of multiple intervention components (e.g., health education and family outreach), the inclusion of settings other than just the community (e.g., school, home, primary care, child care), and a focus on children at middle school age or younger.

“While additional research is needed to assess the full impact of community-based interventions on the prevention of childhood obesity, our conclusions indicate that more comprehensive approaches, which attempt to modify diet and exercise in the community with engagement from the schools, weigh in everyone’s favor,” said Bleich.

Reference:

Every parent has a different strategy for trying to get his or her kid to eat more vegetables, from growing vegetables together as a family to banning treats until the dinner plate is clean. New research suggests that teaching young children an overarching, conceptual framework for nutrition may do the trick (1).

The new findings, published in Psychological Science, show that a conceptual framework encourages children to understand why eating a variety of foods is ideal and also causes them to eat more vegetables by choice.

Psychological scientists Sarah Gripshover and Ellen Markman of Stanford University hypothesized that preschoolers would be capable of understanding a more conceptual approach to nutrition, despite their young age.

“Children have natural curiosity — they want to understand why and how things work,” the researchers explain. “Of course we need to simplify materials for young children, but oversimplification robs children of the opportunity to learn and advance their thinking.”

Gripshover and Markman developed five storybooks aimed at revising and elaborating on what children already know about different nutrition-related themes, including dietary variety, digestion, food categories, microscopic nutrients, and nutrients as fuel for biological functions.

The researchers assigned some preschool classrooms to read nutrition books during snack time for about 3 months, while other classrooms were assigned to conduct snack time as usual. Later, the preschoolers were asked questions about nutrition.

The children who had been read the nutrition books were more likely to understand that food had nutrients, and that different kinds of nutrients were important for various bodily functions (even functions that weren’t mentioned in the books). They were also more knowledgeable about digestive processes, understanding, for example, that the stomach breaks down food and blood carries nutrients.

These children also more than doubled their voluntary intake of vegetables during snack time after the three-month intervention, whereas the amount that the control group ate stayed about the same.

When the conceptual program was pitted against a more conventional teaching strategy focused on the enjoyment of healthy eating and trying new foods, the results showed that both interventions led to increased vegetable consumption. Yet, the children in the conceptual program showed more knowledge about nutrition and a greater overall increase in vegetable consumption.

Further research is needed to determine...
whether the conceptual intervention encourages healthy eating habits outside of snack time and whether it’s effective over the long-term, but Gripshover and Markman believe that the intervention shows promise.

“In the future, our conceptually-based educational materials could be combined with behaviorally-focused nutrition interventions with the hope of boosting healthy eating more than either technique alone,” they conclude.

**Reference:**


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**Veggies (Continued from page 14)**

“In the future, our conceptually-based educational materials could be combined with behaviorally-focused nutrition interventions with the hope of boosting healthy eating more than either technique alone,” they conclude.

**Policies by School Districts or States Associated with Reduced Availability of Unhealthy Foods and Beverages**

The association between district and state policies or legal requirements regarding competitive food and beverages (food and beverages sold outside the school meal program) and public elementary school availability of foods and beverages high in fats, sugars, or sodium was examined in a study Jamie F. Chriqui, Ph.D., M.H.S., and colleagues at the University of Illinois at Chicago. (1)

Survey respondents at 1,814 elementary schools (1,485 unique) in 957 districts in 45 states (food analysis) and 1,830 elementary schools (1,497 unique) in 962 districts and 45 states (beverage analysis) participated in the study during the school years 2008-2009 and 2010-2011.

According to the study results, sweets were 11.2 percent less available (32.3 percent versus 43.5 percent) when both the district and state limited sugar content, respectively. Regular-fat baked goods were less available when the state law limited fat content. Regular-fat ice cream was less available when any policy limited competitive food fat content. Sugar-sweetened beverages were 9.5 percent less available when prohibited by district policy (3.6 percent versus 13.1 percent). Higher-fat milks (2 percent or whole milk) were less available when prohibited by district policy or state law.

“Both district and state policies and/or laws have the potential to reduce in-school availability of high-sugar, high-fat foods and beverages. Given the need to reduce empty calories in children’s diets, governmental policies at all levels may be an effective tool,” the study concludes.

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State and district policies were effective in reducing the availability of unhealthy competitive foods in schools.

*Schools continued with references on page 16*
A research letter by Andrew S. Hanks, Ph.D., of Cornell University, Ithaca, New York, and colleagues examined whether having students preorder their entrée (main dish) of their school meal improves the healthfulness of entrees selected for lunch (1).

A total of 272 students in 14 classrooms (grades 1-5) from two elementary schools in upstate New York participated in the study. The schools are located in a predominantly white (96.6 percent) county where 55 percent of students receive free or reduced-price lunches. Students used an electronic system to preorder their lunch entrée over a 4-week period (November – December 2011).

According to the study results, when students preordered their entrée, 29.4 percent selected the healthier entrée compared with 15.3 percent when preordering was not available. The less healthy entrée was chosen 70.8 percent of the time by students who preordered, and students who ordered in the lunch line selected the less healthy entrée 85.7 percent of the time. It appears that hunger-based, spontaneous selection diminished healthy entrée selection by 48 percent and increased less healthy entrée selection by 21 percent.

“Together, both consumption and selection data demonstrate how a simple environmental change—preordering—can prompt children to choose healthier food” the study concludes.

Reference:


Poor Eating Behaviors May Put Preschoolers At Risk for Later Health Problems

How kids eat their food may turn out to be just as important as what they eat, according to a new study out of St. Michael's Hospital (1).

The study, led by Dr. Nav Persaud, a family physician, found a significant association between poor eating habits in kids ages three to five and their levels of non-HDL – or “bad” – cholesterol, putting them at risk for cardiovascular disease later in life.

The paper appeared online in the Canadian Medical Association Journal.

“We know that eating behaviors are an important determinant of health in adults and adolescents, but this is the first time pre-school age children have been looked at to see if their eating habits are affecting their health as well,” said Dr. Persaud.

Poor eating behaviors included eating while watch TV, snacking on junk food between meals and allowing kids to decide for themselves when they wanted to eat.

The study looked at data from more than 1,000 preschoolers who were recruited through TARGet Kids!, a collaboration between children’s doctors and researchers from St. Michael’s Hospital, the Hospital for Sick Children and the University of Toronto. The program follows children from birth with the aim of understanding and preventing common nutrition problems in the early years and their impact on health and disease later in life.

Parents filled out questionnaires assessing their child’s eating behaviors, and researchers looked at the child’s height, weight and fat profile in their blood. They assigned risk based on ethnicity of the parents, as some groups are more prone to heart disease than others.

“There are a lot of interventions focused on what children are eating,” Dr. Persaud said. “But it’s also very important we focus on eating behaviors because how a child is eating can affect the quantity and quality of food being eaten as well.”

Dr. Persaud said if a child is watching TV while eating, they are less likely to notice natural cues telling them when they are full, and are more likely to eat an unbalanced meal.

“Discovering this link early in life is important because the behavior is still largely changeable,” Dr. Persaud said. “It gives us an opportunity to prevent disease and screen for behavioral interventions.”

Reference:


Study Suggests Association Between Hypoglycemia, Dementia in Older Adults With Diabetes

A study of older adults with diabetes mellitus (DM) suggests a bidirectional association between hypoglycemic (low blood glucose) events and dementia, according to a report published by *JAMA Internal Medicine* (1).

There is a growing body of evidence that DM may increase the risk for developing cognitive impairment, including Alzheimer disease and vascular dementia, and there is research interest in whether DM treatment can prevent cognitive decline. When blood glucose declines to low levels, cognitive function is impaired and severe hypoglycemia may cause neuronal damage. Previous research on the potential association between hypoglycemia and cognitive impairment has produced conflicting results, the authors write in the study background.

Kristine Yaffe, M.D., of the University of California, San Francisco, and colleagues studied 783 older adults with DM (average age 74 years). During a 12-year follow-up, 61 patients (7.8 percent) had a reported hypoglycemic event and 148 (18.9 percent) developed dementia.

“Hypoglycemia commonly occurs in patients with diabetes mellitus (DM) and may negatively influence cognitive performance. Cognitive impairment in turn can compromise DM management and lead to hypoglycemia,” according to the study.

Patients who experienced a hypoglycemic event had a two-fold increased risk for developing dementia compared with those who did not have a hypoglycemic event (34.4 percent vs. 17.6 percent). Older adults with DM who developed dementia had a greater risk for having a subsequent hypoglycemic event compared with patients who did not develop dementia (14.2 percent vs. 6.3 percent), according to the study results.

“Among older adults with DM who were without evidence of cognitive impairment at study baseline, we found that clinically significant hypoglycemia was associated with a two-fold increased risk for developing dementia … Similarly, participants with dementia were more likely to experience a severe hypoglycemic event,” the authors conclude. “The association remained even after adjustment for age, sex, educational level, race/ethnicity, comorbidities and other covariates. These results provide evidence for a reciprocal association between hypoglycemia and dementia among older adults with DM.”

In an invited commentary, Kasia J. Lipska, M.D., M.H.S. of the Yale University School of Medicine, New Haven, Conn., and Victor M. Montori, M.D., of the Mayo Clinic, Rochester, Minn., write: “Hypoglycemia is a major adverse consequence of glucose-lowering therapy in patients...”

Hypoglycemia continued on page 19
Eating Whole Fruits Linked to Lower Risk of Type 2 Diabetes

Eating more whole fruits, particularly blueberries, grapes, and apples, was significantly associated with a lower risk of type 2 diabetes, according to a new study led by Harvard School of Public Health (HSPH) researchers (1). Greater consumption of fruit juices was associated with a higher risk of type 2 diabetes. The study is the first to look at the effects of individual fruits on diabetes risk.

“While fruits are recommended as a measure for diabetes prevention, previous studies have found mixed results for total fruit consumption. Our findings provide novel evidence suggesting that certain fruits may be especially beneficial for lowering diabetes risk,” said senior author Qi Sun, assistant professor in the Department of Nutrition at HSPH and assistant professor at the Channing Division of Network Medicine, Brigham and Women’s Hospital.

The researchers examined data gathered between 1984 and 2008 from 187,382 participants in three long-running studies (Nurses’ Health Study, Nurses’ Health Study II, and Health Reference:


Fruit (Continued from page 19)

Professionals Follow-up Study). Participants who reported a diagnosis of diabetes, cardiovascular disease, or cancer at enrollment were excluded. Results showed that 12,198 participants (6.5%) developed diabetes during the study period.

The researchers looked at overall fruit consumption, as well as consumption of individual fruits: grapes or raisins; peaches, plums, or apricots; prunes; bananas; cantaloupe; apples or pears; oranges; grapefruit; strawberries; and blueberries. They also looked at consumption of apple, orange, grapefruit, and “other” fruit juices.

People who ate at least two servings each week of certain whole fruits — particularly blueberries, grapes, and apples — reduced their risk for type 2 diabetes by as much as 23% in comparison to those who ate less than one serving per month. Conversely, those who consumed one or more servings of fruit juice each day increased their risk of developing type 2 diabetes by as much as 21%. The researchers found that swapping three servings of juice per week for whole fruits would result in a 7% reduction in diabetes risk.

The fruits’ glycemic index (a measure of how rapidly carbohydrates in a food boost blood sugar) did not prove to be a significant factor in determining a fruit’s association with type 2 diabetes risk. However, the high glycemic index of fruit juice — which passes through the digestive system more rapidly than fiber-rich fruit — may explain the positive link between juice consumption and increased diabetes risk.

The researchers theorize that the beneficial effects of certain individual fruits could be the result of a particular component. Previous studies have linked anthocyanins found in berries and grapes to lowered heart attack risk, for example. But more research is necessary to determine which components in the more beneficial fruits influence diabetes risk.

“Our data further endorse current recommendations on increasing whole fruits, but not fruit juice, as a measure for diabetes prevention,” said lead author Isao Muraki, research fellow in the Department of Nutrition at HSPH. “And our novel findings may help refine this recommendation to facilitate diabetes prevention.”

Reference:


Six Months of Fish Oil Reverses Liver Disease in Children with Intestinal Failure, Study Shows

Children who suffer from intestinal failure, most often caused by a shortened or dysfunctional bowel, are unable to consume food orally. Instead, a nutritional cocktail of sugar, protein and fat made from soybean oil is injected through a small tube in their vein.

For these children, the intravenous nutrition serves as a bridge to bowel adaptation, a process by which the intestine recovers and improves its capacity to absorb nutrition. But the soybean oil, which provides essential fatty acids and calories, has been associated with a potentially lethal complication known as intestinal failure–associated liver disease, which may require a liver and/or intestinal transplant. Such a transplant can prevent death, but the five-year post-transplant survival rate is only 50–70 percent.

Previous studies have shown that replacing soybean oil with fish oil in intravenous nutrition can reverse intestinal failure–associated liver disease. However, the necessary duration of fish oil treatment had not been established in medical studies.

Now, a clinical trial conducted at the Children’s Discovery and Innovation Institute at Mattel Children’s Hospital UCLA has found that, compared with soybean oil, a limited duration (24 weeks) of fish oil is safe and effective in reversing liver disease in children with intestinal failure who require intravenous nutrition (1). The researchers believe that fish oil may also decrease the need for liver and/or intestinal transplants — and mortality — associated with this disease.

Replacing soybean oil with fish oil resulted in a much higher rate of reversal of liver disease than those who had received the standard soybean oil.

The researchers’ study is published online in the Journal of Parenteral and Enteral Nutrition.

"With this particular study, we set out to determine if a finite period of six months of intravenous fish oil could safely reverse liver damage in these children, and we have had some promising results," said lead author Dr. Kara Calkins, an assistant professor in the department of pediatrics in the division of neonatology and developmental biology at UCLA. "But because intravenous fish oil is not yet approved by the Food and Drug Administration and is much more costly than soybean oil, it is typically not covered by insurance. As a result, this oil is considered experimental and is currently available only under special protocols. If it proves safe and effective for patients, we hope it would eventually be available for wider use."

For the study, intravenous soybean oil was replaced with intravenous fish oil in 10 patients between the ages of 2 weeks and 18 years who had advanced intestinal failure–associated liver disease and who were at high risk for death and/or transplant. The researchers compared these subjects with 20 historical controls who had received soybean oil.

Results showed that the children receiving fish oil had a much higher rate of reversal of liver disease than those who received the standard soybean oil. In fact, after 17 weeks of fish oil, nearly 80 percent of patients experienced a reversal of their liver disease, while only 5 percent of the soybean patients saw a reversal.

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Fish Oil (Continued from page 21)

The next phase of research will involve following children for up to five years after they stop fish oil to determine if their liver disease returns and if transplant rates are truly decreased, the study authors said.

"We are also trying to better understand how fish oil reverses this disease by investigating changes in proteins and genes in the blood and liver," Calkins said. "These studies will provide the scientific and medical community with a better understanding of this disease and how intravenous fish oil works."

For Isabella Piscione, who was one of the first patients at UCLA to receive the fish oil treatment under compassionate use, her outcome with the treatment paved the way for researchers to establish the six-month protocol. Because of multiple surgeries due to an obstruction in her intestines, Isabella was left with only 10 centimeters of intestine. She depended on intravenous nutrition for survival, which unfortunately resulted in liver damage.

When Isabella started the fish oil treatment, she was just over 6 months old and was listed for a liver and bowel transplant. Within a month of starting the treatment, her condition started to improve. By six months, her liver had healed, and she no longer needed a transplant.

"We cried tears of joy each week that we saw her getting better and better," said her father, Laureano Piscione. "She is a success story."

Reference:


Study Confirms Link Between High Blood Levels of Omega-3 Fatty Acids and Increased Risk of Aggressive Prostate Cancer

A second large, prospective study by scientists at Fred Hutchinson Cancer Research Center has confirmed the link between high blood concentrations of omega-3 fatty acids and an increased risk of prostate cancer (1).

Published in the online edition of the Journal of the National Cancer Institute, the latest findings indicate that high concentrations of EPA, DPA and DHA – the three anti-inflammatory and metabolically related fatty acids derived from fatty fish and fish-oil supplements – are associated with a 71 percent increased risk of high-grade prostate cancer. The study also found a 44 percent increase in the risk of low-grade prostate cancer and an overall 43 percent increase in risk for all prostate cancers.

The increase in risk for high-grade prostate cancer is

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important because those tumors are more likely to be fatal.

The findings confirm a 2011 study published by the same scientific team that reported a similar link between high blood concentrations of DHA and a more than doubling of the risk for developing high-grade prostate cancer. The latest study also confirms results from a large European study.

“The consistency of these findings suggests that these fatty acids are involved in prostate tumorigenesis and recommendations to increase long-chain omega-3 fatty acid intake, in particular through supplementation, should consider its potential risks,” the authors wrote.

“We’ve shown once again that use of nutritional supplements may be harmful,” said Alan Kristal, Dr.P.H., the paper’s senior author and member of the Fred Hutch Public Health Sciences Division. Kristal also noted a recent analysis published in the Journal of the American Medical Association that questioned the benefit of omega-3 supplementation for cardiovascular diseases. The analysis, which combined the data from 20 studies, found no reduction in all-cause mortality, heart attacks or strokes.

“What’s important is that we have been able to replicate our findings from 2011 and we have confirmed that marine omega-3 fatty acids play a role in prostate cancer occurrence,” said corresponding author Theodore Brasky, Ph.D., a research assistant professor at The Ohio State University Comprehensive Cancer Center who was a postdoctoral trainee at Fred Hutch when the research was conducted. “It’s important to note, however, that these results do not address the question of whether omega-3’s play a detrimental role in prostate cancer prognosis,” he said.

Kristal said the findings in both Fred Hutch studies were surprising because omega-3 fatty acids are believed to have a host of positive health effects based on their anti-inflammatory properties. Inflammation plays a role in the development and growth of many cancers.

It is unclear from this study why high levels of omega-3 fatty acids would increase prostate cancer risk, according to the authors, however the replication of this finding in two large studies indicates the need for further research into possible mechanisms. One potentially harmful effect of omega-3 fatty acids is their conversion into compounds that can cause damage to cells and DNA, and their role in immunosuppression. Whether these effects impact cancer risk is not known.

The difference in blood concentrations of omega-3 fatty acids between the lowest and highest risk groups was about 2.5 percentage points (3.2 percent vs. 5.7 percent), which is somewhat larger than the effect of eating salmon twice a week, Kristal said.

Prostate (Continued from page 22)
Prostate (Continued from page 23)

The current study analyzed data and specimens collected from men who participated in the Selenium and Vitamin E Cancer Prevention Trial (SELECT), a large randomized, placebo-controlled trial to test whether selenium and vitamin E, either alone or combined, reduced prostate cancer risk. That study showed no benefit from selenium intake and an increase in prostate cancers in men who took vitamin E.

Reference:


Four or More Cups of Coffee a Day May Keep Prostate Cancer Recurrence and Progression Away

Coffee consumption is associated with a lower risk of prostate cancer recurrence and progression, according to a new study by Fred Hutchinson Cancer Research Center scientists in Cancer Causes & Control (1).

Corresponding author Janet L. Stanford, Ph.D., co-director of the Program in Prostate Cancer Research in the Fred Hutch Public Health Sciences Division, conducted the study to determine whether the bioactive compounds in coffee and tea may prevent prostate cancer recurrence and delay progression of the disease.

Stanford and colleagues found that men who drank four or more cups of coffee per day experienced a 59 percent reduced risk of prostate cancer recurrence and/or progression as compared to those who drank only one or fewer cups per week.

They did not, however, find an association between coffee drinking and reduced mortality from prostate cancer, although the study included too few men who died of prostate cancer to address that issue separately.

Regarding tea consumption, the researchers did not find an associated reduction of prostate cancer recurrence and/or progression. The study also did not draw any conclusions regarding the impact of tea drinking on prostate-specific death.

"To our knowledge, our study is the first to investigate the potential association between tea consumption and prostate

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cancer outcomes,” the authors wrote. “It is important to note, however, that few patients in our cohort were regular tea drinkers and the highest category of tea consumption was one or more cups per day. The association should be investigated in future studies that have access to larger populations with higher levels of tea consumption.”

The population-based study involved 1,001 prostate cancer survivors, aged 35-74 years old at the time of diagnosis between 2002-2005, who were residents of King County, Wash. Participants answered questions regarding their diet and beverage consumption two years prior to prostate cancer diagnosis using a validated food frequency questionnaire, and were interviewed about demographic and lifestyle information, family history of cancer, medication use and prostate cancer screening history.

The researchers followed up with patients more than five years after diagnosis to ascertain whether the prostate cancer had recurred and/or progressed. Those who were still living, willing to be contacted and had been diagnosed with non-metastatic cancer were included in the follow-up effort.

Of the original 1,001 patients in the cohort, 630 answered questions regarding coffee intake, fit the follow-up criteria and were included in the final analysis. Of those, 61 percent of the men consumed at least one cup of coffee per day and 12 percent consumed the highest amount: four or more cups per day.

The study also evaluated daily coffee consumption in relation to prostate cancer-specific death in 894 patients using data from the initial food frequency questionnaire. After the median follow-up period of eight-and-a-half years, 125 of the men had died, including 38 specifically from prostate cancer. Daily coffee consumption was not associated with prostate cancer-specific mortality or other-cause mortality, but with few deaths these analyses were limited.

“Our study differs from previous ones because we used a composite definition of prostate cancer recurrence/progression,” said first author Milan Geybels, a doctoral student at Maastricht University in the Netherlands who was a graduate student in Stanford’s Prostate Studies group at Fred Hutch when the study was conducted. “We used detailed information on follow-up prostate-specific antigen levels, use of secondary treatment for prostate cancer and data from scans and biopsies to assess occurrence of metastases and cause-specific mortality during follow up. Using these detailed data, we could determine whether a patient had evidence of prostate cancer recurrence or progression.”

The results are consistent with findings from Harvard’s Health Professionals Follow-up Study, which found that men who drank six or more cups of coffee per day had a 60 percent decreased risk of metastatic/lethal prostate cancer as compared to coffee abstainers.

Further research is required to understand the mechanisms underlying the results of the study, but biological activities associated with consumption

Previous studies have found that caffeine consumption may reduce the risk of several cancer types, including basal-cell carcinoma, glioma, and ovarian cancer.

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of phytochemical compounds found in coffee include anti-inflammatory and antioxidant effects and modulation of glucose metabolism. These naturally occurring compounds include:

- **Caffeine**, which has properties that inhibit cell growth and encourage apoptosis, or programmed cell death. Previous studies have found that caffeine consumption may reduce the risk of several cancer types, including basal-cell carcinoma, glioma (a cancer of the brain and central nervous system) and ovarian cancer.
- **Diterpenes cafestol and kahweol**, which may inhibit cancer growth.
- **Chlorogenic acid**, which, along with caffeic acid, can inhibit DNA methylation, a biochemical process involved in the development and progression of many cancer types.

Additional studies needed to confirm whether coffee can prevent cancer recurrence.

The researchers emphasize that coffee or specific coffee components cannot be recommended for secondary prevention of prostate cancer before the preventive effect has been demonstrated in a randomized clinical trial. Further, there’s ongoing debate about which components in coffee are anti-carcinogenic, and additional large, prospective studies are needed to confirm whether coffee intake is beneficial for secondary prevention.

Coffee drinking may even be problematic for some men, Geybels said.

“Although coffee is a commonly consumed beverage, we have to point out that increasing one’s coffee intake may be harmful for some men. For instance, men with hypertension may be vulnerable to the adverse effects of caffeine in coffee. Or, specific components in coffee may raise serum cholesterol levels, posing a possible threat to coronary health. Patients who have questions or concerns about their coffee intake should discuss them with their general practitioner,” he said.

The investigators also noted limits to their study, which included a lack of data on how coffee consumption might have changed following diagnosis, whether the coffee that participants consumed was caffeinated or decaffeinated, and how the coffee was prepared (espresso, boiled or filtered), a factor that may affect the bioactive properties of the brew.

Reference:


Coffee and Tea May Contribute to a Healthy Liver

Surprise! Your morning cup of tea or coffee may be doing more than just perking you up before work (1).

An international team of researchers led by Duke-NUS Graduate Medical School (Duke-NUS) and the Duke University School of Medicine suggest that increased caffeine intake, may reduce fatty liver in people with non-alcoholic fatty liver disease (NAFLD).

Worldwide, 70 percent of people diagnosed with diabetes and obesity have NAFLD, the major cause of fatty liver not due to excessive alcohol consumption. Currently, it is estimated that 30 percent of American adults have this condition, and its prevalence is rising in Singapore. There are no effective treatments for NAFLD except diet and exercise.

Using cell culture and mouse models, the authors of the study, led by Paul Yen, M.D., associate professor and research fellow, Rohit Sinha, Ph.D of the Duke-NUS Graduate Medical School’s Cardiovascular and Metabolic Disorders Program in Singapore, observed that caffeine stimulates the metabolism of lipids stored in liver cells and decreased the fatty liver of mice that were fed a high fat diet. Consequently, these findings suggested that coffee and tea consumption (equivalent to the caffeine intake of four cups a day) may be beneficial in the prevention and protection against the progression of NAFLD in humans.

The findings are published in the journal Hepatology.

“This is the first detailed study of the mechanism for caffeine action on lipids in liver and the results are very interesting,” said Yen. “Coffee and tea are so commonly consumed and the notion that they may be therapeutic, especially since they have a reputation for being “bad” for health, is especially enlightening.”

The team hopes that this research could lead to the development of caffeine-like drugs that do not have the usual side effects related to caffeine, but retain its therapeutic effects on the liver. It would serve as a starting point for studies on the full benefits of caffeine and related therapeutics in humans.

Reference:

Alcohol Abuse, Eating Disorders Share Genetic Link

Part of the risk for alcohol dependence is genetic, and the same is true for eating disorders. Now, researchers at Washington University School of Medicine in St. Louis have found it’s likely some of the same genes are involved in both (1).

In the September issue of the *Journal of Studies on Alcohol and Drugs*, the researchers report that people with alcohol dependence may be more genetically susceptible to certain types of eating disorders, and vice versa.

“In clinical practice, it’s been observed that individuals with eating disorders also have high rates of alcohol abuse and dependence,” said Melissa A. Munn-Chernoff, PhD, the study’s first author. “Other studies have focused on the genetic connections between alcohol dependence and eating disorders, but all of those studies looked only at women. Ours was the first to include men as well.”

According to Munn-Chernoff, a postdoctoral research scholar in psychiatry, that’s important because although eating disorders tend to be thought of as a female problem, they affect men, too.

Studying data gathered from nearly 6,000 adult twins in Australia, Munn-Chernoff and her colleagues found that common genetic factors underlie alcoholism and certain eating-disorder symptoms, such as binge eating and purging habits that include self-induced vomiting and the abuse of laxatives.

By studying twins, the researchers used statistical methods to determine the odds that certain traits result from the same genes. Those statistical insights are based on the fact that identical twins share 100 percent of their genetic makeup while fraternal twins share about half.

“By comparing the findings in identical and fraternal twins, we can develop estimates of how much of the difference in particular traits is due to genes or environment,” Munn-Chernoff explained. “We found that some of the genes that influence alcohol dependence also influence binge eating in men and women.”

Even with the growing awareness and more frequent diagnoses of problems such as anorexia nervosa and bulimia nervosa, rates of the full-blown forms of these disorders are relatively low, and they’re rare in populations of twins. So the researchers surveyed study subjects about whether they suffered from eating-disorder symptoms.

“The symptoms can cut across multiple eating disorder diagnoses,” said Munn-Chernoff. “And several past studies have suggested that the particular behavior of binge eating, as well as purging and other practices that we call compensatory behaviors, may be closely associated with alcohol dependence, which is why we focused on those symptoms.”

All of the men and women in the study were surveyed about their alcohol use and binge eating,

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but because the researchers were analyzing data that had been gathered previously for a different study, not everyone was asked about compensatory behaviors, such as purging or using laxatives and diuretics. Only the female twins were asked about those symptoms.

In all, nearly 25 percent of the men and 6 percent of women had been alcohol-dependent at some point. Almost 11 percent of these same men and 13 percent of the women had experienced problems with binge eating. In addition, about 14 percent of the women had engaged in purging or abuse of laxatives or diuretics.

On a statistical scale that runs from zero (no shared genes) to 1 (all genes shared), the researchers found that the genetic correlation between binge eating and alcohol dependence was statistically significant at 0.26.

Among women in the study, the genetic correlation between compensatory behaviors and alcohol dependence was significant at 0.32.

"Those numbers suggest that there are shared genetic risk factors for these behaviors, such as purging and fasting," Munn-Chernoff said. "It appears that some genes that influence alcohol dependence also influence binge eating in men and women, and compensatory behaviors in women."

In the future, Munn-Chernoff would like to expand the scope of the study. Because most of the twins in this dataset were Caucasian, she’d like to study twins of different races to see whether these genetic findings occur in other ethnic groups. She also would like to get beyond statistical relationships and gather blood or saliva samples in an attempt to identify the actual genes that contribute both to alcohol dependence and eating-disorder symptoms.

She believes physicians and therapists who treat people for alcohol dependence and eating disorders should be more aware that the problems can occur together.

"When you go to an eating disorder treatment center, they don’t often ask questions about alcoholism. And when you go for alcoholism treatment, they don’t generally ask questions about eating disorder symptoms," she said. "If centers could be aware of that and perhaps treat both problems at the same time, that would be a big help."

Reference:


Gut Microbes Closely Linked to Range of Health Issues

A new understanding of the essential role of gut microbes in the immune system may hold the key to dealing with some of the more significant health problems facing people in the world today, Oregon State University (OSU) researchers say in a new analysis (1).

Problems ranging from autoimmune disease to clinical depression and simple obesity may in fact be linked to immune dysfunction that begins with a “failure to communicate” in the human gut, the scientists say. Health care of the future may include personalized diagnosis of an individual’s “microbiome” to determine what prebiotics or probiotics are needed to provide balance.

Appropriate sanitation such as clean water and sewers are good. But some erroneous lessons in health care may need to be unlearned – leaving behind the fear of dirt, the love of antimicrobial cleansers, and the outdated notion that an antibiotic is always a good idea. We live in a world of “germs” and many of them are good for us.

“Asked about their immune system, most people might think of white blood cells, lymph glands or vaccines,” said Dr. Natalia Shulzhenko, author of a new report in Clinical Reviews in Allergy and Immunology, and assistant professor and physician in the OSU Department of Biomedical Sciences. “They would be surprised that’s not where most of the action is. Our intestines contain more immune cells than the entire rest of our body.

“The human gut plays a huge role in immune function,” Shulzhenko said. “This is little appreciated by people who think its only role is digestion. The combined number of genes in the microbiota genome is 150 times larger than the person in which they reside. They do help us digest food, but they do a lot more than that.”

An emerging theory of disease, Shulzhenko said, is a disruption in the “crosstalk” between the microbes in the human gut and other cells involved in the immune system and metabolic processes.

“In a healthy person, these microbes in the gut stimulate the immune system as needed, and it in turn talks back,” Shulzhenko said. “There’s an increasing disruption of these microbes from modern lifestyle, diet, overuse of antibiotics and other issues. With that disruption, the conversation is breaking down.”

An explosion of research in the field of genomic sequencing is for the first time allowing researchers to understand some of this conversation and appreciate its significance, Shulzhenko said. The results are surprising, with links that lead to a range of diseases, including celiac disease and inflammatory bowel disease. Obesity may be related. And some studies have found relevance to depression, late-onset autism, allergies, asthma and cancer.

In the new review, researchers analyzed how microbe dysfunction can sometimes result in

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malabsorption and diarrhea, which affects tens of millions of children worldwide and is often not cured merely by better nutrition. In contrast, a high-fat diet may cause the gut microbes to quickly adapt to and prefer these foods, leading to increased lipid absorption and weight gain.

The chronic inflammation linked to most of the diseases that kill people in the developed world today – heart disease, cancer, diabetes – may begin with dysfunctional gut microbiota.

Understanding these processes is a first step to addressing them, Shulzhenko said. Once researchers have a better idea of what constitutes healthy microbiota in the gut, they may be able to personalize therapies to restore that balance. It should also be possible to identify and use new types of probiotics to mitigate the impact of antibiotics, when such drugs are necessary and must be used.

Such approaches are “an exciting target for therapeutic interventions” to treat health problems in the future, the researchers concluded.

Reference:


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**Resources**

**Academy of Nutrition and Dietetics Facts Sheets on Coconut Water and Coconut Oil**

Coconut water and coconut oil have been in popping up a lot more frequently in the media and in grocery stores. Many proponents tout coconut water as an excellent post-work out beverage, or claim it has anti-aging properties and hydrates better than water. In addition, claims have been circulating that coconut oil, while very high in saturated fat, is still a healthy fat because most of the saturated fat is lauric acid, a medium-chain fatty acid. Are these products really as healthy as their enthusiasts claims? The Academy of Nutrition and Dietetics has developed helpful fact sheets to demystify the claims, myths, and facts about coconut water and coconut oil.

Check them out at:

Coconut Water – Is It What It’s Cracked Up to Be?: [http://www.eatright.org/Public/content.aspx?id=6442471128](http://www.eatright.org/Public/content.aspx?id=6442471128)

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