

Nutrition Perspectives

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

FDA and EPA Issue Final Fish Consumption Advice

The U.S. Food and Drug Administration and the U.S. Environmental Protection Agency have issued final advice regarding fish consumption. This advice is geared toward helping women who are pregnant or may become pregnant – as well as breastfeeding mothers and parents of young children – make informed choices when it comes to fish that are healthy and safe to eat.

(This advice refers to fish and shellfish collectively as “fish.”)

To help these consumers more easily understand the types of fish to select, the agencies have created an easy-to-use reference chart that sorts 62 types of fish into three categories:

- “Best choices” (eat two to three servings a week)

- “Good choices” (eat one serving a week)

- “Fish to avoid”

Fish in the “best choices” category make up nearly 90 percent of fish eaten in the United States.



The guidance expands the list of fish to avoid from four species in the previous guidance to seven.

An FDA analysis of fish consumption data found that 50 percent of pregnant women surveyed ate fewer than 2 ounces a week, far less than the amount recommended.

Because the nutritional benefits of eating fish are important for growth and development during pregnancy and early childhood, the agencies are advising and promoting a minimum level of fish consumption for these groups. The advice recommends 2-3 servings of lower-mercury fish per week, or 8 to 12 ounces. However,

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all fish contain at least traces of mercury, which can be harmful to the brain and nervous system if a person is exposed to too much of it over time. The maximum level of consumption recommended in the final advice is consistent with the previous recommended level of 12 ounces per week.

The new advice is consistent with the 2015 - 2020 Dietary Guidelines for Americans.

For adults, a typical serving is 4 ounces of fish, measured before cooking. Serving sizes for children should be smaller and adjusted for their age and total calorie needs. It is recommended that children eat fish once or twice a week, selected from a variety of fish types.

"Fish are an important source of protein and other nutrients for young children and women who are or may become pregnant, or are breastfeeding. This advice clearly shows the great diversity of fish in the U.S. market that they can consume safely," said FDA Deputy Commissioner for Foods and Veterinary Medicine Stephen Ostroff, M.D. "This new, clear and concrete advice is an excellent tool for making safe and healthy choices when buying fish." Choices lower in

mercury include some of the most commonly eaten fish, such as shrimp, pollock, salmon, canned light tuna, tilapia, catfish and cod.

When updating the advice, the agencies took a cautious and highly protective approach

to allow consumers to enjoy the benefits of fish while avoiding those with higher levels of mercury, which is especially important during pregnancy and early childhood. The

average mercury content of each type of fish was calculated based on FDA data and information from other sources. The updated advice cautions parents of young children and certain women to avoid seven types of fish that typically have higher mercury levels: tilefish from the Gulf of Mexico; shark; swordfish; orange roughy; bigeye tuna; marlin; and king mackerel.

For fish caught recreationally, consumers are urged to check for local advisories where they are fishing and gauge their fish consumption based on any local and state advisories for those

What is a serving?

To find out, use the palm of your hand!

For an adult
4 ounces

For children,
ages 4 to 7
2 ounces

The guidance provides advice on how to easily determine a 4 ounce or 2 ounce serving of fish.

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

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waters. If no information on fishing advisories is available, eat just one fish meal a week from local waters and also, avoid other fish that week. Consumers should clean and trim the fish they catch of fat and skin, since locally-caught fish may contain contaminants besides mercury that can be reduced by proper trimming and cooking, (e.g. broiling instead of frying can reduce some contaminants by letting fat drip away from the fish).

“It’s all about eating and enjoying fish of the right kind and in the right amounts,” said EPA Director for Water Science and Technology, Elizabeth Southerland, Ph.D. “This joint advice not only provides information for fish consumers who buy from local markets, but it also contains good information for people who catch their own fish or are provided fish caught by friends or relatives.”

All retailers, grocers and others are urged to post this new advice, including the reference chart listing fish to choose, prominently in their stores so consumers can make informed decisions when and where they purchase fish. The agencies will be implementing a consumer education campaign working with a wide array of public and private partners featuring the new advice.

In June 2014, the agencies issued draft advice which encouraged pregnant women and others to eat between 8 and 12 ounces of fish a week of fish “lower in mercury” but did not provide a list showing consumers which

fish are lower in mercury. The advice issued today also takes into account more than 220 comments received from academia, industry, nongovernmental organizations and consumers as well as an external peer review of the information and method used to categorize the fish.

The updated advice, along with downloadable posters and flyers, can be found on the FDA website at: <https://www.fda.gov/Food/FoodborneIllnessContaminants/Metals/ucm393070.htm>



“It’s all about eating and enjoying fish of the right kind and in the right amounts.”

The FDA, an agency within the U.S. Department of Health and Human Services, protects the public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation’s

food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.

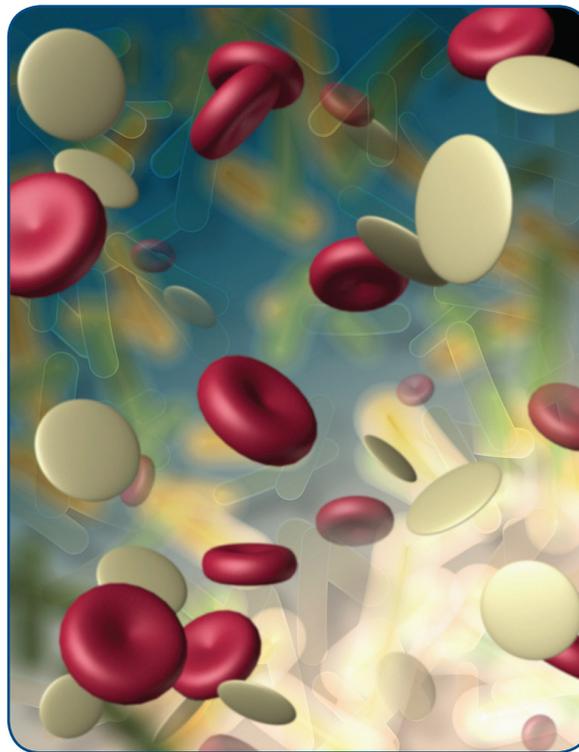
The EPA, a federal agency, works to protect all Americans from significant risks to human health and the environment where they live, learn and work. The agency focuses on all parts of society, from individuals to businesses and local governments. It develops regulations concerning natural resources, energy, transportation, agriculture, and industry and supports the various facets of environmental research and protection.

Source: FDA News and Events; Jan. 18, 2017; <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm537362.htm>

Delayed Umbilical Cord Clamping Reduces Infant Anemia at Age 8, 12 Months

Delaying umbilical cord clamping for at least three minutes following birth may be an effective way to reduce the prevalence of iron deficiency anemia at 8 and 12 months, according to a new study published in *JAMA Pediatrics* (1).

Iron deficiency is one of the most common nutritional deficiencies among children in the developing world. Iron deficiency anemia at a young age can result in delayed or impaired cognitive, motor, and behavioral development, the impacts of which can be life-long. The most common preventative measures for iron deficiency anemia are supplementation and food fortification, however delayed umbilical cord clamping, which involves waiting three minutes or longer to clamp, has potential to be an effective means of prevention. The benefit to delayed cord clamping derives from the continued infusion of blood from the placenta to the neonate following birth, which has been shown to increase early iron stores and reduce the prevalence of iron deficiency at four and six months of age. In countries where there is a high prevalence of iron deficiency in children, such as Nepal, delayed clamping is a low-cost method of improving the iron status of infants. However, there is little data on whether these benefits persist after the first six months of life.



Iron deficiency, one of the most common nutritional deficiencies, can lead to anemia. Anemia is a red blood cell disorder that results in reduced ability of the red blood cells to carry oxygen.

This study examined the impact of delayed clamping on iron status at ages 8 and 12 months in a randomized controlled trial.

Infants (n=540) born in the intervention hospital in Kathmandu, Nepal were randomly assigned to either early clamping (less than one minute) or delayed clamping (three minutes or more). The early clamping time was determined based on the average umbilical clamping time in the intervention hospital.

Delayed umbilical cord clamping resulted in a significant reduction in anemia prevalence of 9 percent at 8 months of age and 8 percent at 12 months of age, compared to the early clamping group.

“This study shows that delayed cord clamping for [three minutes] was an effective intervention to reduce anemia at 8 and 12 months of age in a high-risk population with minimal cost and without apparent adverse effects, the authors state. “If the intervention was implemented on a global scale, this could translate to 5 million fewer infants with anemia at 8 months of age, with particular public health significance in South Asia and Sub-Saharan Africa, where the prevalence of anemia is the highest.”

Anemia continued with references on page 5

Anemia (Continued from Page 4)

Reference:

1. Kc A, Rana N, Målqvist M, Jarawka Ranneberg L, et al. Effects of Delayed Umbilical Cord Clamping vs Early Clamping on Anemia in Infants at 8 and 12 Months: A Randomized Clinical Trial. *JAMA Pediatr.* 2017 Mar 1;171(3):264-270. doi: 10.1001/jamapediatrics.2016.3971.

Source: JAMA News Releases; Jan. 17, 2017; <https://media.jamanetwork.com/news-item/can-delayed-umbilical-cord-clamping-reduce-infant-anemia-at-age-8-12-months/>

Findings Suggest Causal Association Between Abdominal Fat and Development of Type 2 Diabetes, Coronary Heart Disease

A study published in *JAMA* has found that a genetic predisposition for abdominal fat was associated with an increased risk of type 2 diabetes and coronary heart disease, suggesting a causal association (1).

Having more abdominal fat is associated with higher risk of type 2 diabetes and heart disease compared to storing fat around the hips and thighs. However, it's unclear whether this is a causal relationship. Being able to determine if individuals with genes related to abdominal fat are more likely to develop type 2 diabetes or heart disease is a way to explore whether or not there is a causal association between abdominal fat and these chronic diseases. This is because genetic variants are determined at conception and predate both the development of abdominal fat and chronic disease.

The researchers identified 48 genetic variations called single nucleotide polymorphisms (SNPs) that were associated with

waist-to-hip ratio, which is a measure of how much abdominal fat an individual has relative to the fat they have around hips and thighs.



The researchers identified 48 single nucleotide polymorphisms that were related to waist-to-hip ratio. These were used to create a polygenic risk score to reflect the genetic predisposition for a higher waist-to-hip ratio.

Using an aggregate of these 48 SNPs, a polygenic risk score was generated to reflect the genetic predisposition for a higher waist-to-hip ratio.

Several large data sets that included up to 322,154 participants were used to estimate type 2 diabetes and heart disease risk. Individual-level, cross-sectional data from a separate study was also used and included 111,986 individuals. All individuals included in these data sets were of European descent.

The researchers found that being genetically predisposed to more abdominal fat was associated with increased risk for type 2 diabetes and heart disease as well as other risk factors, such as insulin levels, triglycerides, and blood pressure.

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Abdominal Fat (Continued from Page 5)



Body fat distribution could explain part of the variation in risk of type 2 diabetes and CHD across individuals and subpopulations.

Reference:

1. Emdin CA, Khera AV, Natarajan P, et al. Genetic Association of Waist-to-Hip Ratio With Cardiometabolic Traits, Type 2 Diabetes, and Coronary Heart Disease. *JAMA*. 2017 Feb 14;317(6):626-634. doi: 10.1001/jama.2016.21042.

Source: JAMA News Releases; Feb. 14, 2017; <https://media.jamanetwork.com/news-item/findings-suggest-causal-association-between-abdominal-fat-and-development-of-type-2-diabetes-coronary-heart-disease/>.

“These results provide evidence supportive of a causal association between abdominal [fat] and these outcomes,” the authors state. “Body fat distribution, beyond simple measurement of BMI, could explain part of the variation in risk of type 2 diabetes and CHD noted across individuals and subpopulations.”

The authors also propose that targeting abdominal fat specifically may be useful in developing therapies to prevent type 2 diabetes and heart disease.

However, because the study included only those of European descent, more research is needed to determine how this association may differ by race and ethnic background.

Compared to Type 1, Children with Type 2 Diabetes More Likely to Experience Complications as Teens, Young Adults

Among teenagers and young adults who had been diagnosed with diabetes during childhood or adolescence, the prevalence of diabetes-related complications was higher among those with type 2 than with type 1, but complications were frequent in both groups, according to a study appearing *JAMA*.

The increased prevalence of type 2 diabetes among children and adolescents has been relatively recent in most populations, beginning in the early to mid-1990s. Additionally, a long-term increase in type 1 diabetes has been observed both worldwide and in the United States. These recent trends in type 1 and 2 diabetes diagnosed in young individuals raise the question of whether the pattern of

complications differs by diabetes type at similar ages and diabetes duration.

Dana Dabelea, M.D., Ph.D., of the Colorado School of Public Health, Aurora, and colleagues estimated the prevalence of multiple diabetes-related complications among 2,018 study participants with type 1 and type 2 diabetes diagnosed at younger than 20 years. Of the participants, 1,746 had type 1 diabetes and 272 had type 2. Average diabetes duration was 7.9 years (both groups).

The researchers found that approximately one in three teenagers and young adults with type 1 diabetes (32 percent) and almost 3 of 4 of those with type 2 diabetes (72 percent) had

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a complication. Patients with type 2 diabetes vs those with type 1 had higher age-adjusted prevalence for:

- diabetic kidney disease (19.9 percent vs 5.8 percent)
- retinopathy (9.1 percent vs 5.6 percent)
- peripheral neuropathy (17.7 percent vs 8.5 percent)
- arterial stiffness (47.4 percent vs 11.6 percent)
- hypertension (21.6 percent vs 10.1 percent)

After adjustment for established risk factors measured over time, participants with type 2 diabetes vs those with type 1 had significantly higher odds of diabetic kidney disease, retinopathy, and peripheral neuropathy but no significant difference in the odds of arterial stiffness and hypertension.

“These findings support early monitoring of youth with diabetes for development of complications,” the authors write.



Complications from diabetes were more common among teens and young adults with type 2 diabetes compared to those with type 1 diabetes.

Reference:

1. Dabelea D1, Stafford JM2, Mayer-Davis EJ3, et al. Association of Type 1 Diabetes vs Type 2 Diabetes Diagnosed During Childhood and Adolescence With Complications During Teenage Years and Young Adulthood. *JAMA*. 2017 Feb 28;317(8):825-835. doi: 10.1001/jama.2017.0686.

Source: <https://media.jamanetwork.com/news-item/compared-to-type-1-children-with-type-2-diabetes-more-likely-to-experience-complications-as-teens-young-adults/>

Insulin Resistance May Lead to Faster Cognitive Decline



Insulin resistance was linked to a more rapid decline in cognitive performance.

A new Tel Aviv University study published in the *Journal of Alzheimer's Disease* finds that insulin resistance, caused in part by obesity and physical inactivity, is also linked to a more rapid decline in cognitive performance (1). According to the research, both diabetic and non-diabetic subjects with insulin resistance experienced accelerated cognitive decline in executive function and memory.

The study was led jointly by Prof. David Tanne and Prof. Uri Goldbourt and conducted by Dr. Miri Lutski, all of TAU's Sackler School of Medicine.

“These are exciting findings because they

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may help to identify a group of individuals at increased risk of cognitive decline and dementia in older age," says Prof. Tanne. "We know that insulin resistance can be prevented and treated by lifestyle changes and certain insulin-sensitizing drugs. Exercising, maintaining a balanced and healthy diet, and watching your weight will help you prevent insulin resistance and, as a result, protect your brain as you get older."

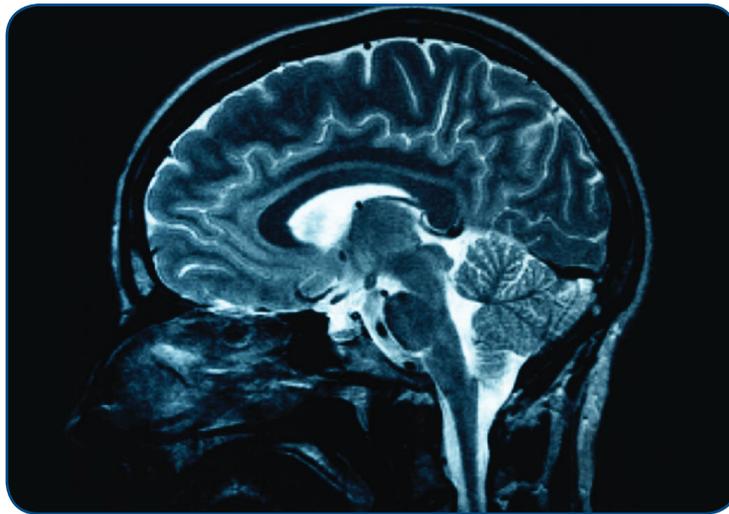
Insulin resistance is a condition in which cells fail to respond normally to the hormone insulin. The resistance prevents muscle, fat, and liver cells from easily absorbing glucose. As a result, the body requires higher levels of insulin to usher glucose into its cells. Without sufficient insulin, excess glucose builds up in the bloodstream, leading to prediabetes, diabetes, and other serious health disorders.

The scientists followed a group of nearly 500 patients with existing cardiovascular disease for more than two decades. They first assessed the patients' baseline insulin resistance using the homeostasis model assessment (HOMA), calculated using fasting blood glucose and

fasting insulin levels. Cognitive functions were assessed with a computerized battery of tests that examined memory, executive function, visual spatial processing, and attention. The follow-up assessments were conducted 15 years after the start of the study, then again five years after that.

The study found that individuals who placed in the top quarter of the HOMA index were at an increased risk for poor cognitive performance and accelerated cognitive decline compared to those in the remaining three-quarters of the HOMA index. Adjusting for established cardiovascular risk factors and potentially confounding factors did not diminish these associations.

"This study lends support for more research to test the cognitive benefits of interventions such as exercise, diet, and medications that improve insulin resistance in order to prevent dementia," says Prof. Tanne. The team is currently studying the vascular and non-vascular mechanisms by which insulin resistance may affect cognition.



"This study lends support for more research to test the cognitive benefits of interventions such as exercise, diet, and medications that improve insulin resistance in order to prevent dementia."

Reference:

1. Lutski M, Weinstein G, Goldbourt U, Tanne D. Insulin Resistance and Future Cognitive Performance and Cognitive Decline in Elderly Patients with Cardiovascular Disease. *J Alzheimers Dis.* 2017;57(2):633-643. doi: 10.3233/JAD-161016.

Source: American Friends of Tel Aviv University News Room; March 21, 2017; <https://www.aftau.org/weblog-medicine--health?&storyid4704=2321&ncs4704=3>

Poor Vitamin B12 status in the First Year of Life Impacts Cognitive Development

In a recent study published in the *American Journal of Clinical Nutrition*, researchers reported a connection between poor vitamin B12 status in infancy and measures of cognitive function at five years of age. The results of the study suggest that B12 deficiency may impair or delay brain development in children (1).

Micronutrient deficiencies, including poor B12 status, are prevalent in many developing countries. In Nepal, there is high risk for B12 deficiency due to high rates of poverty and low consumption of animal products, the primary source of dietary B12. Previous research has found B12 deficiency in infants to negatively impact neurodevelopment.

To examine this link, researchers measured B12 status in a random sample of Nepalese infants between the ages of 2 and 12 months. At age five, children enrolled in the study (n=320) underwent a series of cognitive and developmental tests to measure motor skills, problem solving, communication skills, inhibition, visuospatial skills and other markers of development.

The initial B12 status measured in infancy found that 14.7 percent of children in the sample were B12 deficient, based on serum cobalamine levels. However, researchers also assessed other markers of B12 status, such as total homocysteine.



At age five, children underwent a series of cognitive and developmental tests to measure motor skills, problem solving, communication skills, inhibition, visuospatial skills and other markers of development.



B12 deficiency is more common in countries where there is low consumption of animal products, the primary dietary source of B12.

Researchers found that children who were who were B12-deficient in infancy were more likely to be in the lowest quartile of problem solving scores at age five. However, even those with marginal B12 status were reported to have impaired visuospatial performance. No statistically significant association was reported between B12 status and executive functioning. The authors speculate this may be because rapid executive function development begins around age 5 and suggest that assessing executive functioning at an older age would be beneficial.

“Our results clearly demonstrate associations between early vitamin B12 status and various measures on development and cognitive

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functioning, as for example the ability to interpret complex geometrical figures, and the ability to recognize other children’s emotions,” said Ingrid Kvestad, first author and researcher at

Uni Research in Bergen Norway.

Dr. Kvestad stated that they are conducting randomized controlled trials to confirm their results.

References:

1. Kvestad I, Hysing M, Shrestha M, et al. Vitamin B-12 status in infancy is positively associated with development and cognitive functioning 5 y later in Nepalese children. *Am J Clin Nutr.* 2017 Mar 22. pii: ajcn144931. doi: 10.3945/ajcn.116.144931. [Epub ahead of print]

Source: UniResearch Health News; March 24, 2017; <http://uni.no/en/news/2017/03/24/children-poor-vitamin-b12-status-early-life-strugg/>

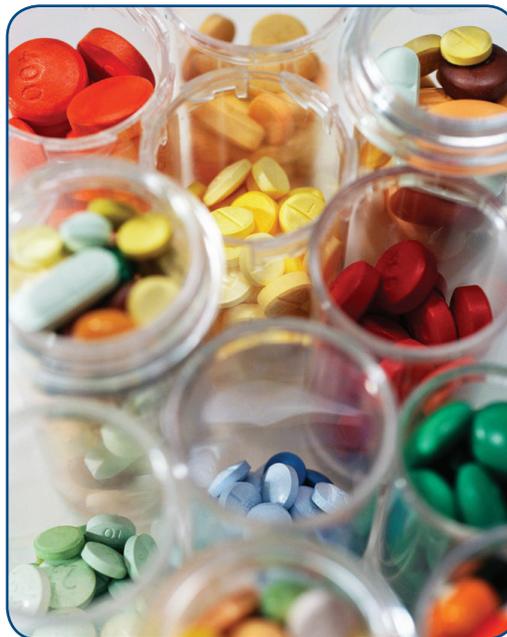
Study Finds That Melatonin Content of Supplements Varies Widely

A new study conducted at the University of Guelph in Canada has found that melatonin supplements may not contain the amount advertised on the product label and may also contain potentially harmful ingredients (1).

In addition to the variability in melatonin concentrations, over a quarter of the tested supplements contained undeclared serotonin. Significant quantities of serotonin could lead to serious side effects.

Researchers evaluated a broad range of over-the-counter melatonin supplements, including liquids, capsules, and chewable tablets from 16 different brands.

In over 70 percent of the 31 supplements tested using ultraperformance liquid chromatography, the amount of melatonin present varied substantially from the labeled amount. The actual content of melatonin ranged from 17 percent to 468 percent of what was displayed on the label. Concentrations should vary by less than 10 percent of the labeled amount. Significant variation from lot-to-lot was also detected in some products. In one case, the amount of melatonin varied by 465 percent within the same product.



Over 70 percent of the supplements tests varied more than 10 percent from the labeled amount.

Because the Food and Drug Administration classifies melatonin as a dietary supplement, it is subject to minimal regulation compared to medications. However, the U.S. Pharmacopeial Convention (USP), a non-profit that sets purity and quality standards for supplements, issues a “USP Verified” mark to supplements that have been verified to meet standards. Participation is voluntary and requires the product undergo laboratory testing, an audit of manufacturing processes, and a review of manufacturing documentation.

“Millions of people use melatonin for a

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variety of purposes, including as a sleep aid,” said lead author Lauren A.E. Erland. “It is important that clinicians and patients have confidence in the quality of supplements used in the treatment of sleep disorders.”

Many adults use melatonin as a sleep aid because it is a naturally occurring hormone involved in regulating the sleep-wake cycle. The American Academy of Sleep Medicine (AASM) recommends melatonin as an option for those with sleep-wake disorders such as jet-lag disorder or shift work disorder. Due to a lack of sufficient evidence, the AASM does not recommend melatonin to treat sleep onset or sleep maintenance insomnia. Consultation with a physician is recommended before taking melatonin supplements.



Many adults use melatonin as a sleep aid.

Reference:

1. Erland LA, Saxena PK. Melatonin Natural Health Products and Supplements: Presence of Serotonin and Significant Variability of Melatonin Content. *J Clin Sleep Med*. 2017 Feb 15;13(2):275-281. doi: 10.5664/jcsm.6462.

Source: American Academy of Sleep Medicine News Archive; Feb. 14, 2017; <http://www.aasmnet.org/articles.aspx?id=6743>

Helping Parents Understand BMI May Lead to Positive Changes in Childhood Obesity



Schools are taking a proactive approach to get students to move more and improve their eating habits. But it takes a team effort at both school and home to make a difference, said Greg Welk, a professor of kinesiology at Iowa State University.

To that end, Welk was part of a new study, published in *Childhood Obesity*, which found parents were more likely to change their child’s lifestyle when schools provided educational materials along with the results of their child’s body mass index screening (1). Some parents in

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the study received only BMI results, while others had access to the Family Nutrition and Physical Activity (FNPA) screening tool, an online tool designed to help parents evaluate their home environments and practices.

“The FNPA assessment can be a good supplement to any school obesity prevention program and it is also useful for clinical evaluations,” Welk said. “Some clinics are now using it in parent well-child visits so that pediatricians can advise parents about how to help their kids.”

Welk says the supplemental information appeared to help parents in the study understand BMI results, as well as identify strategies to take at home, such as offering more fruits and vegetables, limiting screen time, helping their child be more active and making sure he or she gets enough sleep. The study analyzed nearly 1,500 parental surveys from 31 Pennsylvania elementary schools. The work was led by Lisa Bailey-Davis with Geisinger Health System, but was part of a larger study funded by a grant from the National Institutes of Health. Welk led the overall project along with former Ph.D. student, Karissa Peyer, now at the University of Tennessee-Chattanooga.

As of 2012, 21 states require schools to measure and collect BMI statistics. However, as researchers explained in the paper, a third of these schools did not require parental

notification and only one-quarter had a policy regarding referrals. Welk says BMI is useful for school screening because it is quick and non-invasive. However, the statistics are of little use if not shared with parents.

“The use of BMI screening on a regular basis can help schools by providing information to help evaluate changes at the school level. It can also directly help individual children and parents to potentially identify growth patterns that may predispose youth to becoming overweight or obese,” Welk said.



Parents were more likely to change their child's lifestyle when schools provided educational materials along with the results of their child's body mass index screening.

The American Academy of Pediatrics and the Institute of Medicine have endorsed BMI screening for use in school assessments, but it is important to follow recommended practices for assessment and notification, he added. Supplemental information such as the

FNPA is also recommended since it gives parents information that they can use to help their child.

Obesity affects one in six children and teens in the U.S., according to the Centers for Disease Control and Prevention. Researchers say their results show there is potential to increase awareness and access to educational tools related to BMI reports. If this information prompts parents to make changes, it could help reduce obesity rates.

In the paper, researchers cited prevalence

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estimates that indicate more than 17 percent of American youth are obese, but very few parents identify their own children as having weight problems. As few as 2 percent of parents with overweight children and 17 percent of parents with obese children describe their children as overweight.

Welk works with several Iowa school districts to develop physical activity programming, including the Iowa FITNESSGRAM Initiative and the SWITCH program. He is also working on a new grant proposal to develop ways to share school BMI data with pediatricians and have parents complete the FNPA in the clinic. Welk says these efforts would help promote better exchanges with pediatricians and changes in parenting practices.

Reference:

1. Bailey-Davis L, Peyer KL, Fang Y et al. Effects of Enhancing School-Based Body Mass Index Screening Reports with Parent Education on Report Utility and Parental Intent To Modify Obesity Risk Factors. *Child Obes.* 2017 Apr;13(2):164-171. doi: 10.1089/chi.2016.0177. Epub 2017 Jan 18.

Source: Iowa State News Service; Feb. 21, 2017; <http://www.news.iastate.edu/news/2017/02/21/schoolbmi>



The supplemental material contined strategies for parents, such as offering more fruits and vegetables and helping their child be more active.

Food Subsidies and Taxes Significantly Improve Dietary Choices



Several cities have implemented "soda taxes" that tax sugar-sweetened beverages.

A new systematic review and meta-analysis finds that lowering the cost of healthy foods significantly increases their consumption, while raising the cost of unhealthy items significantly reduces their intake (1).

While everyone has a sense that food prices matter, the magnitude of impact of food taxes and subsidies on dietary intakes, and whether this varies by the food target, has not been clear. For the review, a team of researchers identified and pooled findings from a total of 30 interventional and longitudinal studies, including 11 that assessed the effect of higher prices (taxation) of unhealthy foods and 19 that assessed the effect of lower prices (subsidies) of healthy foods.

The findings were published in *PLOS ONE*.

"To date, evidence on effectiveness of fiscal policies on diet has mostly come from cross-sectional studies, which cannot infer causality. This is why we evaluated studies that

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examined the relationship between food price and diet over time," said co-first author Ashkan Afshin, M.D., former postdoctoral fellow at the Friedman School of Nutrition Science & Policy at Tufts University and now at the University of Washington. "Our results show how 10 to 50 percent changes in price of foods and beverages at checkout could influence consumers' purchasing behaviors over a relatively short period of time."

In the pooled analysis, each 10 percent decrease in price of fruits and vegetables increased their consumption by 14 percent, and each 10 percent decrease in price of other healthy foods increased their consumption by 16 percent. A change in price of fruits and vegetables was also associated with body mass index (BMI): for every 10 percent price decrease, BMI declined by 0.04 kg/m².

Conversely, each 10 percent price increase of sugar-sweetened beverages and unhealthy fast foods decreased their consumption by 7 percent and 3 percent, respectively. Every 10 percent price increase in unhealthy foods and drinks was associated with a trend toward lower BMI (per 10 percent price increase: -0.06 kg/m²), but this did not achieve statistical significance.

Reference:

1. Afshin A, Peñalvo JL, Del Gobbo L, et al. The prospective impact of food pricing on improving dietary consumption: A systematic review and meta-analysis. PLoS One. 2017 Mar 1;12(3):e0172277. doi: 10.1371/journal.pone.0172277. eCollection 2017.

Source: Tufts Now News Releases; Mar. 1, 2017; <http://now.tufts.edu/news-releases/food-subsidies-and-taxes-significantly-improve-dietary-choices>

"The global food system is causing a staggering toll on human health. And this is very costly, both in terms of real healthcare expenses and lost productivity," said senior author Dariush Mozaffarian, M.D., Dr.P.H., dean of the Friedman

School. "Our findings suggest that subsidies and taxes are a highly effective tool for normalizing the price of foods toward their true societal costs. This will not only prevent disease but also reduce spiraling healthcare costs, which are causing tremendous strain on both private businesses and government budgets."

By merging findings from 23 interventional and 7 prospective cohort studies, the researchers evaluated relationships between the change in the price of specific foods or beverages and the change in their intake. Studies evaluated people's reported intake

or data on sales of foods and beverages. The study populations included children, adults, or both; and countries included the United States, the Netherlands, France, New Zealand, and South Africa. Price change interventions were conducted in various settings such as cafeterias, vending machines and supermarkets. The findings were centrally pooled in a meta-analysis.



Each 10 percent decrease in price of fruits and vegetables increased their consumption by 14 percent, and each 10 percent decrease in price of other healthy foods increased their consumption by 16 percent.

How Many Extra Calories are Americans Consuming in their Coffee and Tea?

A new study conducted at University of Illinois found that the calories Americans consume in their daily coffee and tea can really add up. On average, those who consume their coffee or tea with add-ins such as sugar or cream consume an extra 69 and 44 calories respectively compared to those that drink their beverage plain (1). The majority of these calories were from sugar.

“Our findings indicate that a lot of coffee and tea drinkers regularly use caloric add-ins to improve the flavor of their beverages, but possibly without fully realizing or taking into consideration its caloric and nutritional implications,” said lead author Ruopeng An. An is a professor of kinesiology and community health at the University of Illinois.

To arrive at these numbers, researchers looked at 12 years of data from the National Health and Nutrition Examination Survey (NHANES). This study, which included 13,185 adults that consumed coffee and 6,215 that consumed tea, suggests that over three-quarters of American adults drink coffee or tea on any given day. Of those that consumed coffee, 67.5 percent added sugar, cream, or other caloric add-ins. Among tea-drinkers, 33.4 percent consumed their beverage with add-ins.

The most common add-ins for coffee

were sugar or non-nutritive sweeteners, cream or cream substitutes, half and half, or milk. Common add-ins for tea included sugar or non-nutritive sweeteners, honey, or milk.

“Many people prefer drinking coffee and tea with sugar, cream, half-and-half or honey,”

said An. “These add-in items are often dense in energy and fat but low in nutritional value.”

Cream and milk add-ins did contribute a small amount of calcium to the diet, 22 milligrams and 2.9 milligrams for coffee and tea respectively. However, for most adults the recommended dietary allowance for calcium

is between 1,000 and 1,200 milligrams per day. Overall, the contribution of coffee and tea add-ins to calcium intake is at most 2 percent of the daily recommendation.

The 2015-2020 Dietary Guidelines for Americans recommends that caloric beverages, including coffee and tea with add-ins, be factored into the overall eating pattern. The Centers for Disease Control and Prevention also provides advice in the form of the “Rethink Your Drink” campaign, which encourages Americans to choose fat-free milk and non-nutritive sweeteners and to skip calorie-dense add-ins at the coffee shop, such as flavored syrups and whipped cream.



Americans that add sugar or cream to their coffee consume an average of 69 calories more than those who drink theirs black.

Reference:

1. R. An, Y. Shi. Consumption of coffee and tea with add-ins in relation to daily energy, sugar, and fat intake in US adults, 2001–2012. *Public Health*, 2017; 146: 1 DOI: 10.1016/j.puhe.2016.12.032

Source: Diana Yates. University of Illinois News Bureau, Jan. 30, 2017; <https://news.illinois.edu/blog/view/6367/457582>

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