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Public release date: 28-Oct-2009

Why fish oils help and how they could help even more

New research from Queen Mary, University of London and Harvard Medical School has revealed precisely why taking fish oils can help with conditions like rheumatoid arthritis.

In a paper published in Nature today*, researchers describe how the body converts an ingredient found in fish oils into another chemical called Resolvin D2 and how this chemical reduces the inflammation that leads to a variety of diseases.

The research also suggests that Resolvin D2 could be the basis for a new treatment for diseases including sepsis, stroke and arthritis. Unlike other anti-inflammatory drugs, this chemical does not seem to suppress the immune system.

The researchers, who were funded by the Arthritis Research Campaign, the Wellcome Trust and the National Institutes of Health, looked at a particular ingredient of fish oils called DHA. They were able to show how the body converts DHA into Resolvin D2 and discover its exact chemical structure.

Mauro Perretti, Professor of Immunopharmacology at Queen Mary, University of London, led the UK team. He said: "We have known for some time that fish oils can help with conditions like arthritis which are linked to inflammation. What we've shown here is how the body processes a particular ingredient of fish oils into Resolvin D2. We've also looked in detail at this chemical, determining at least some of the ways it relieves inflammation. It seems to be a very powerful chemical and a small amount can have a large effect."

"This research is important because it explains at least one way in which fish oils can help in different types of arthritis. We can also work on this chemical and see if it can be used not only to treat or even prevent arthritis, but also as a possible treatment for a variety of other diseases associated with inflammation."

Arthritis, and many other diseases, are caused by inflammation. This means that the body's natural defences against infections are mistakenly directed at healthy tissue.

Previous research has shown that a crucial step in this process occurs when white blood cells, called leukocytes, stick to the inner lining of the blood vessels, called the endothelium.

Researchers studied these blood cells and how they interact with the endothelium in the lab. When they added Resolvin D2 they found that the endothelial cells produced small amounts of nitric oxide, which acts as a chemical signal discouraging the white blood cells from sticking to the endothelial cells and preventing inflammation.

October 28, 2009

Mortality Rates Reduced among Children Whose Mothers Received

Iron-folic Acid Supplements

Offspring whose mothers had been supplemented with iron-folic acid during pregnancy had dramatically reduced mortality through age 7, according to researchers at the Johns Hopkins Bloomberg School of Public Health. Researchers found that other supplement combinations, including the multiple micronutrient supplement, did not confer the same benefit. Nearly 40 percent of pregnant women worldwide are estimated to be anemic. Although there is an international policy for antenatal iron-folic acid supplementation, coverage and use of this antenatal intervention is low in many developing countries. The results are featured in the September 24 issue of the American Journal of Epidemiology.

“In a setting where maternal iron deficiency and anemia are common, we found a 31 percent reduction in childhood mortality due to maternal antenatal and postnatal supplementation with iron-folic acid compared to a control,” said Parul Christian, DrPH, MSc, lead author of the study and an associate professor in the Bloomberg School’s Department of International Health. “A reduction in mortality resulting from an intervention, such as iron-folic acid supplementation during pregnancy, provides a new and previously unreported evidence of benefit to offspring during childhood. To our knowledge this is the first time the long-term effects of maternal iron-folic acid supplementation on childhood survival have been examined.”

Christian and colleagues examined the long-term impact of micronutrient supplementation on childhood survival, growth, and early markers of chronic disease among the offspring of women who received micronutrient supplementation. The study is a follow-up to a 1999 to 2001 randomized, double-masked trial of the administration of micronutrients during pregnancy to women in the rural southern plains district of Sarlahi, Nepal. At the time the team examined folic acid; folic acid-iron; folic acid-iron-zinc, as well as a multiple micronutrients that contained the foregoing plus 11 other micronutrients. Vitamin A alone was provided in the control group and each of the four supplement groups also contained vitamin A. They found that iron-folic acid supplementation relative to the control significantly reduced the prevalence of low birth weight by 16 percent and the prevalence of maternal anemia during pregnancy and the postpartum period by 50 percent.

“Supplementation with iron and folic acid during pregnancy is a common policy in many low- and middle-income countries, although implementation is typically not very good,” said James Tielsch, PhD, professor and associate chair for academic programs at the Bloomberg School of Public Health. “This policy has been motivated primarily by the beneficial effects of supplementation on anemia in pregnancy and maternal iron stores. Following their previous demonstration that iron-folic acid supplementation during pregnancy increased birth weight, Christian, et al., have now provided unique data on the critical importance of this intervention for improving child survival. This strong evidence should reenergize programs for the delivery of this critical intervention for maternal and child health.”

“Antenatal and Postnatal Iron Supplementation and Childhood Mortality in Rural Nepal: A Prospective Follow-up in a Randomized, controlled Community Trial” was written by Parul Christian, Christine P. Stewart, Steven C. LeClerq, Lee Wu, Joanne Katz, Keith P. West Jr., and Subarna K Khattri.

The research was supported by the Center for Human Nutrition; National Society for the Prevention of Blindness; the Bill & Melinda Gates Foundation; the Sight and Life Research Institute; the National Institutes of Health; the US Agency for International Development and the Johns Hopkins University.

Public release date: 28-Oct-2009

Statins show dramatic drug and cell dependent effects in the brain

Besides their tremendous value in treating high cholesterol and lowering the risk of heart disease, statins have also been reported to potentially lower the risks of other diseases, such as dementia. However, a study in the October Journal of Lipid Research finds that similar statin drugs can have profoundly different effects on brain cells –both beneficial and detrimental. These findings reinforce the idea that great care should be taken when deciding on the dosage and type of statin given to individuals, particularly the

elderly.

John Albers and colleagues compared the effects of two commercially used statins, simvastatin and pravastatin, on two different types of brain cells, neurons and astrocytes (support cells that help repair damage). By directly applying the drugs to cells as opposed to administering them to animals, they could eliminate differences in the drugs' ability to cross the blood-brain barrier as a reason for any differing effects. Albers and colleagues looked at the expression of genes related to neurodegeneration, and found that indeed, despite using biologically equivalent drug concentrations, differences were seen both between cells, and between drugs; for example, simvastatin reduced the expression of the cholesterol transporter ABCA1 by approximately 80% in astrocytes, while pravastatin lowered expression by only around 50%. Another interesting difference was that while both statins decreased expression of the Tau protein – associated with Alzheimer's disease—in astrocytes, they increased Tau expression in neurons; pravastatin also increased the expression of another Alzheimer's hallmark, amyloid precursor protein (APP).

While increased levels of these two proteins may account for potential risks of disease, Albers and colleagues also note that large decreases in cholesterol proteins like ABCA1 should be considered. **Brain cholesterol levels tend to be reduced in elderly people, and in such individuals the long-term effects of statin therapy could lead to transient or permanent cognitive impairment.**

Ralph's Note - In such Individuals = Everybody.

Public release date: 28-Oct-2009

Attention-Deficit/Hyperactivity Problems Associated with Low Folate Levels in Pregnant Women

It has long been suggested that healthy folate (the natural form of folic acid) levels in expectant mothers goes hand in hand with healthy nervous system development in their children. A study published in an upcoming issue of *The Journal of Child Psychology and Psychiatry* finds that low maternal folate levels is linked to the development of attention-deficit/hyperactivity problems in children at age seven to nine years.

Researcher Dr. Wolff Schlotz points out, "Our findings further support the hypothesis that maternal nutrition contributes to an individuals' development, with potential consequences for their behavior later in life." The long term effects of poor maternal nutrition may even branch out to the child's ability to interact with peers or form social bonds.

The researchers also found that children born from mothers with a low folate status had a notably smaller head circumference at birth, which may indicate a smaller rate of prenatal brain growth in children adversely affected by low folate levels. This is a cause for concern among low-income populations where the nutritional health of the mother is a low priority, and women are less likely to take folate supplements in advance of pregnancy.

Public release date: 28-Oct-2009

Exercise Keeps Dangerous Visceral Fat Away a Year After Weight Loss, Finds UAB Study

BIRMINGHAM, Ala. - A study conducted by exercise physiologists in the University of Alabama at Birmingham (UAB) Department of Human Studies finds that as little as 80 minutes a week of aerobic or resistance training helps not only to prevent weight gain, but also to inhibit a regain of harmful visceral fat one year after weight loss.

The study was published online Oct. 8 and will appear in a future print edition of the journal *Obesity*.

Unlike subcutaneous fat that lies just under the skin and is noticeable, visceral fat lies in the abdominal cavity under the abdominal muscle. Visceral fat is more dangerous than subcutaneous fat because it often surrounds vital organs. The more visceral fat one has, the greater is the chance of developing Type 2 diabetes and heart disease.

In the study, UAB exercise physiologist Gary Hunter, Ph.D., and his team randomly assigned 45 European-American and 52 African-American women to three groups: aerobic training, resistance training or no exercise. All of the participants were placed on an 800 calorie-a-day diet and lost an average 24 pounds. Researchers then measured total fat, abdominal subcutaneous fat and visceral fat for each participant.

Afterward, participants in the two exercise groups were asked to continue exercising 40 minutes twice a week for one year. After a year, the study's participants were divided into five groups: those who maintained aerobic exercise training, those who stopped aerobic training, those who maintained their resistance training, those who stopped resistance training and those who were never placed on an exercise regimen.

"What we found was that those who continued exercising, despite modest weight gains, regained zero percent visceral fat a year after they lost the weight," Hunter said. "But those who stopped exercising, and those who weren't put on any exercise regimen at all, averaged about a 33 percent increase in visceral fat.

"Because other studies have reported that much longer training durations of 60 minutes a day are necessary to prevent weight regain, it's not too surprising that weight regain was not totally prevented in this study," Hunter said. "It's encouraging, however, that this relatively small amount of exercise was sufficient to prevent visceral fat gain."

The study also found that exercise was equally effective for both races.

Public release date: 29-Oct-2009

High fructose corn syrup: A recipe for hypertension

Elevated dietary fructose linked to high blood pressure

A diet high in fructose increases the risk of developing high blood pressure (hypertension), according to a paper being presented at the American Society of Nephrology's 42nd Annual Meeting and Scientific Exposition in San Diego, California. The findings suggest that cutting back on processed foods and beverages that contain high fructose corn syrup (HFCS) may help prevent hypertension.

Over the last 200 years, the rate of fructose intake has directly paralleled the increasing rate of obesity, which has increased sharply in the last 20 years since the introduction of HFCS. Today, Americans consume 30% more fructose than 20 years ago and up to four times more than 100 years ago, when obesity rates were less than 5%. While this increase mirrors the dramatic rise in the prevalence of hypertension, studies have been inconsistent in linking excess fructose in the diet to hypertension.

Diana Jalal, MD (University of Colorado Denver Health Sciences Center), and her colleagues studied the issue in a large representative population of US adults. They examined 4,528 adults 18 years of age or older with no prior history of hypertension. Fructose intake was calculated based on a dietary questionnaire, and foods such as fruit juices, soft drinks, bakery products, and candy were included. Dr. Jalal's team found that people who ate or drank more than 74 grams per day of fructose (2.5 sugary soft drinks per day) increased their risk of developing hypertension. Specifically, a diet of more than 74 grams per day of fructose led to a

28%, 36%, and 87% higher risk for blood pressure levels of 135/85, 140/90, and 160/100 mmHg, respectively. (A normal blood pressure reading is below 120/80 mmHg.)

"These results indicate that high fructose intake in the form of added sugars is significantly and independently associated with higher blood pressure levels in the US adult population with no previous history of hypertension," the authors concluded. Additional studies are needed to see if low fructose diets can normalize blood pressure and prevent the development of hypertension.

Study co-authors include Richard Johnson, MD, Gerard Smits, PhD, and Michel Chonchol, MD (University of Colorado Denver Health Sciences Center). Dr. Richard Johnson reports a conflict of interest as the author of "The Sugar Fix". The authors report no other financial disclosures.

Public release date: 29-Oct-2009

Low vitamin D levels explains most ESRD risk in African-Americans

Future studies will tell whether raising vitamin D Levels can slow kidney disease
Low levels of vitamin D may account for nearly 60 percent of the elevated risk of end-stage renal disease (ESRD) in African Americans, according to a report in the December Journal of the American Society of Nephrology (JASN). "Our study adds to previous evidence linking vitamin D deficiency to the progression of kidney disease and the need for dialysis," comments Michal L. Melamed, MD, of Albert Einstein College of Medicine (Bronx, NY). "It also explains a fair amount of the increased risk of ESRD in African Americans." Vitamin D is obtained from sun exposure, food and food supplements.

Melamed and colleagues analyzed a nationwide sample of 13,000 Americans, including measurements of the vitamin D metabolite 25(OH)D. Medicare data were used to identify participants who eventually required dialysis therapy for ESRD. "We found that the participants with the lowest 25(OH)D levels were 2.6 times as likely to end up on dialysis compared to those with higher levels," says Melamed.

The researchers then tested whether 25(OH)D levels could contribute to the higher risk of ESRD in African Americans, compared to whites. "African Americans have lower 25(OH)D levels and a higher risk of ESRD," Melamed explains. "We found that 25(OH)D deficiency was responsible for about 58 percent of the excess risk for ESRD experienced by African Americans."

Vitamin D deficiency is a very common problem in the United States. In recent years, studies have linked low vitamin D to many different health problems, including diabetes, high blood pressure, cancers, and heart disease. The new results add to previous evidence that low 25(OH)D levels are an important risk factor for ESRD. "This is another good reason to make sure that people get enough vitamin D," Melamed adds.

Although it can't prove any cause-and-effect relationship, the study also suggests that vitamin D deficiency is a key contributor to the high risk of ESRD in African Americans. More research is needed to confirm these findings, and to determine whether treatment to raise low vitamin D levels can help to preserve kidney function. "We are currently in the process of enrolling for a clinical trial of vitamin D repletion in patients with chronic kidney disease to further test these hypotheses," says Melamed.

Public release date: 29-Oct-2009

Scientists discover influenza's Achilles heel: Antioxidants

New research in the FASEB Journal opens the door for new drugs that could prevent severe flu-related lung damage

As the nation copes with a shortage of vaccines for H1N1 influenza, a team of

Alabama researchers have raised hopes that they have found an Achilles' heel for all strains of the flu—antioxidants. In an article appearing in the November 2009 print issue of the FASEB Journal (<http://www.fasebj.org>) they show that antioxidants—the same substances found in plant-based foods—might hold the key in preventing the flu virus from wreaking havoc on our lungs.

"The recent outbreak of H1N1 influenza and the rapid spread of this strain across the world highlights the need to better understand how this virus damages the lungs and to find new treatments," said Sadis Matalon, co-author of the study. **"Additionally, our research shows that antioxidants may prove beneficial in the treatment of flu."**

Matalon and colleagues showed that the flu virus damages our lungs through its "M2 protein," which attacks the cells that line the inner surfaces of our lungs (epithelial cells). Specifically, the M2 protein disrupts lung epithelial cells' ability to remove liquid from inside of our lungs, setting the stage for pneumonia and other lung problems. The researchers made this discovery by conducting three sets of experiments using the M2 protein and the lung protein they damage. First, frog eggs were injected with the lung protein alone to measure its function. Second, researchers injected frog eggs with both the M2 protein and the lung protein and found that the function of the lung protein was significantly decreased. Using molecular biology techniques, scientists isolated the segment of the M2 protein responsible for the damage to the lung protein. Then they demonstrated that without this segment, the protein was unable to cause damage. Third, the full M2 protein (with the "offending" segment intact) and the lung protein were then re-injected into the frog eggs along with drugs known to remove oxidants. This too prevented the M2 protein from causing damage to the lung protein. These experiments were repeated using cells from human lungs with exactly the same results.

"Although vaccines will remain the first line of intervention against the flu for a long time to come, this study opens the door for entirely new treatments geared toward stopping the virus after you're sick," said Gerald Weissmann, M.D., Editor-in-Chief of the FASEB Journal, "and as Thanksgiving approaches, this discovery is another reason to drink red wine to your health."

Public release date: 29-Oct-2009

Pregnant women risk early delivery from using psychiatric medication

The odds triple for premature child delivery pregnant women with a history of depression who used psychiatric medication, according to a new study.

Researchers at the University of Washington, University of Michigan and Michigan State University found that a combination of medication use and depression – either before or during pregnancy – was strongly linked to delivery before 35 weeks' gestation.

Amelia Gavin, lead author and UW assistant professor of social work, said the findings highlight the need for carefully planned studies that can clarify associations between depression, psychiatric medications and preterm delivery.

"Women with depression face difficult decisions regarding the benefits and risks of using psychotropic medications in pregnancy," Gavin said. "Therefore, a focus on disentangling medication effects and depression effects on mother and offspring health should be a major clinical priority."

"Medication use may be an indicator of depressive symptom severity, which is a direct or indirect contributing factor to pre-term delivery," added Kristine Siefert, co-author and a Michigan professor of social work.

Most physicians initiated preterm deliveries after the women suffered complications, such as pre-eclampsia, poor fetal growth or acute hemorrhage.

The study examined the associations among maternal depression, psychiatric medication use in pregnancy and preterm delivery among women in five Michigan communities who received prenatal care at one of 52 participating clinics between September 1998 and June 2004. These women had to be at least 15 years old, with no history of diabetes, and were 15 to 27 weeks pregnant.

Researchers analyzed responses of nearly 3,020 women who participated in the Michigan-based Pregnancy Outcomes and Community Health Study, which asked about depressive symptoms that occurred within the week of taking the questionnaire. The study also asked about the women's history of depression that required medication, such as tranquilizers or sleeping pills.

Overall, 335 women (11 percent) delivered preterm. Among the women who reported having depression during pregnancy, 75 percent had a history of depression and 62 percent used medication in the first half of pregnancy.

Another finding showed that without medication use, elevated levels of depressive symptoms at midpregnancy and history of depression did not pose an increased risk of preterm delivery.

Public release date: 1-Nov-2009

Commentary warns of unexpected consequences of proton pump inhibitor use in reflux disease

Alexandria, VA – Despite being highly effective and beneficial for many patients, unexpected consequences are emerging in patients who are prescribed proton pump inhibitors (PPIs) for reflux diseases. Physicians are warned to monitor these effects and prescribe these medications carefully, according to a new commentary published in the November 2009 issue of *Otolaryngology – Head and Neck Surgery*.

According to the authors, gastroesophageal reflux (GERD) and laryngopharyngeal reflux (LPR) are diseases that have undergone a remarkable growth in public health relevance over the last 20 years. While it has been known historically that more than 50 percent of adults in Western countries have occasional symptoms of reflux, there has been a more than four-fold increase in how many patients seek medical care for their symptoms.

PPIs are a class of important and generally safe medicines that prevent the release of stomach acid, which is one cause of the burning sensation many reflux patients experience. PPIs are among the most widely prescribed classes of medications for GERD and LPR diseases. **But according to the authors, there is a growing body of literature demonstrating that acid is not the only causal agent of tissue damage in reflux disease, and that PPIs are not effective at treating all cases of GERD and LPR.**

In addition to the evidence that acid isn't the only contributing agent in reflux disease, the authors' search of recent research on PPIs pointed out that there are many unexpected consequences and side effects from this class of drugs. **They can include: increased rates of hip fractures, possibly related to altered calcium absorption; possible but yet unproven altered vitamin B12 and iron absorption, related to alteration of the gastric pH; increased odds of acquiring nosocomial *Clostridium difficile*-associated diarrhea; and increased odds of contracting community-acquired pneumonia.**

The authors say while it may be premature to make global recommendations about PPI prescribing patterns, they applaud the idea of raising clinical awareness of this medication class and its potential unexpected consequences. In addition, appropriate evaluation and monitoring of patients taking PPIs will be important in determining the need and duration of the use of the medications. The authors further advise physicians treating reflux disease patients to weigh the risks of treatment versus the risks of not treating the disease, and to consider a goal of a more holistic approach that includes diet and lifestyle modification. These additional steps could prove beneficial in lowering healthcare costs associated with reflux diseases, and encourage patients to continue practicing behaviors that would improve their overall health.

Public release date: 2-Nov-2009

First national zinc campaign for childhood diarrhea increases awareness, but use lags behind

Press release from PLoS Medicine

In a study assessing the impact of the first national campaign to scale up zinc treatment of diarrhea in Bangladesh, researchers found that awareness was high but usage lagged behind. In this week's open access journal PLoS Medicine, Charles Larson and colleagues from International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) report the results of seven repeated ecologic surveys in four areas in Bangladesh, representing 1.5 million children under the age of 5.

The researchers found that awareness was less than 10% in all communities pre-launch and peaked 10 months later at 90, 74, 66 and 50% in urban non-slum, municipal, urban slum, and rural sites, respectively. After 23 months 25% of urban non-slum, 20% of municipal and urban slum, and 10% of rural children under 5 years were actually receiving zinc for childhood diarrhea. **Use of zinc was found to be safe, with few side-effects, and did not affect the use of traditional treatments for diarrhea. The researchers also found that many children were not given the correct 10-day course of treatment: 50% of parents were sold seven or fewer zinc tablets.**

The "Scaling Up of Zinc for Young Children" (SUZY) project, funded by the Bill & Melinda Gates Foundation, was established in 2003 to develop a scale-up campaign, produce and distribute zinc tablets, train health professionals to provide zinc treatment, and create media campaigns (such as adverts in TV, radio, and newspapers) to raise awareness and promote the use of zinc for diarrhea.

Diarrheal disease is a significant global health problem causing about 4 billion cases and 2.5 million deaths annually, and disproportionately affecting those in the developing world. Clinical trials show that zinc can help reduce the severity and duration of diarrhea as well as lower the likelihood of a repeat episode in the future. Zinc is now included in the guidelines by the World Health Organization (WHO)/UNICEF for treatment of childhood diarrhea.

Ralph's Note - Wow, How many people in the U.S. know Zinc is good for kids...

Public release date: 2-Nov-2009

Study examines associations between antibiotic use during pregnancy and birth defects

Penicillin and several other antibacterial medications commonly taken by pregnant women do not appear to be associated with many birth defects, according to a report in the November issue of Archives of Pediatrics & Adolescent Medicine, one of the JAMA/Archives journals. **However, other antibiotics, such as sulfonamides and nitrofurantoin, may be associated**

with several severe birth defects and require additional scrutiny.

Treating infections is critical to the health of a mother and her baby, according to background information in the article. Therefore, bacteria-fighting medications are among the most commonly used drugs during pregnancy. Although some classes of antibiotics appear to have been used safely during pregnancy, no large-scale studies have examined safety or risks involved with many classes of antibacterial medications.

Krista S. Crider, Ph.D., of the Centers for Disease Control and Prevention, Atlanta, and colleagues analyzed data from 13,155 women whose pregnancies were affected by one of more than 30 birth defects (cases). The information was collected by surveillance programs in 10 states as part of the National Birth Defects Prevention Study. The researchers compared antibacterial use before and during pregnancy between these women and 4,941 randomly selected control women who lived in the same geographical regions but whose babies did not have birth defects.

Antibacterial use among all women increased during pregnancy, peaking during the third month. A total of 3,863 mothers of children with birth defects (29.4 percent) and 1,467 control mothers (29.7 percent) used antibacterials sometime between three months before pregnancy and the end of pregnancy.

"Reassuringly, penicillins, erythromycins and cephalosporins, although used commonly by pregnant women, were not associated with many birth defects," the authors write. Two defects were associated with erythromycins (used by 1.5 percent of the mothers whose children had birth defects and 1.6 percent of controls), one with penicillins (used by 5.5 percent of case mothers and 5.9 percent of controls), one with cephalosporins (used by 1 percent of both cases and controls) and one with quinolones (used by 0.3 percent of both cases and controls).

Two medications—sulfonamides and nitrofurantoin (each used by 1.1 percent of cases and 0.9 percent of controls)—were associated with several birth defects, suggesting that additional study is needed before they can be safely prescribed to pregnant women.

"Determining the causes of birth defects is problematic," the authors write. "A single defect can have multiple causes, or multiple seemingly unrelated defects may have a common cause. This study could not determine the safety of drugs during pregnancy, but the lack of widespread increased risk associated with many classes of antibacterials used during pregnancy should be reassuring."

Public release date: 3-Nov-2009

Statins may worsen symptoms in some cardiac patients

Although statins are widely used to prevent heart attacks, strokes, and other cardiovascular disorders, new research shows that the class of drugs may actually have negative effects on some cardiac patients. A new study presented at CHEST 2009, the 75th annual international scientific assembly of the American College of Chest Physicians (ACCP), found that statins have beneficial effects on patients with systolic heart failure (SHF), but those with diastolic heart failure (DHF) experienced the opposite effect, including increased dyspnea, fatigue, and decreased exercise tolerance.

"Systolic heart failure is most often due to coronary artery disease and appears to have more of an inflammatory component than diastolic heart failure," said Lawrence P. Cahalin, PhD, PT, Northeastern University, Boston, MA. "It is possible that statins would help patients with systolic heart failure more than patients with diastolic heart failure due to the cholesterol-lowering and antiinflammatory effects of statins."

Researchers from Northeastern University and Massachusetts General Hospital, Boston, MA, retrospectively reviewed the charts of 136 patients with heart failure in order to examine the effect of statins on pulmonary function (PF) and exercise tolerance (ET) in patients with DHF vs. SHF. A non-statin group (82 percent of patients had DHF) of 75 patients was compared with a statin group (72 percent of patients had DHF) of 61 patients. Atorvastatin was prescribed in 75 percent of the patients on statins.

Results of the analysis showed that overall PF and ET of patients in the statin group were significantly lower than patients in the non-statin group. Further subgroup analyses revealed that PF measures in the DHF statin group were 12 percent lower than PF measures in the DHF non-statin group. Furthermore, the amount of exercise performed by patients with DHF who were on a statin was almost 50 percent less than patients with DHF not on a statin.

"Some patients with diastolic heart failure may be more prone to the adverse effect of statins on muscle. It may be that patients with particular preexisting factors will experience unfavorable results from statin therapy, including exercise intolerance, dyspnea, and fatigue," said Dr. Cahalin.

Although the PF and ET measures in the SHF statin group were not significantly greater than in the SHF non-statin group, the PF measures were 11 percent to 14 percent higher, and the peak ET measures were 2 percent to 7 percent higher than the PF and ET measures of the SHF non-statin group, suggesting that statins did benefit patients with SHF.

"Not all statins are alike and not all patients are alike. Some statins are stronger than others and are likely to act differently, given particular patient characteristics, and produce different degrees of wanted and unwanted effects," said Dr. Cahalin. "In our continuing study, we hope to identify patient characteristics that are associated with favorable and less than favorable results from statin therapy."

Although the new data suggest that statins may actually worsen symptoms in patients with DHF, researchers feel that the benefits of using statins in patients with SHF and DHF outweigh the risks.

"Due to beneficial effects on lipids and other cardiovascular factors, statins are becoming a standard treatment for many patients with or without systolic or diastolic heart failure. It is likely that the use of statins for these conditions will continue to increase," said Dr. Cahalin. "However, if patients taking a statin are short of breath, fatigued, and unable to exercise or perform functional tasks, then exams of muscle strength and endurance, as well as pulmonary function and exercise tolerance, are warranted."

"Statins provide significant benefits for patients with cardiovascular disease, said Kalpalatha Guntupalli, MD, FCCP, President of the American College of Chest Physicians. "However, as for any new medication prescribed, clinicians should closely monitor the effects that different types of statins have on individual patients."

Public release date: 3-Nov-2009

Children who often drink full-fat milk weigh less

Eight-year-old children who drink full-fat milk every day have a lower BMI than those who seldom drink milk. This is not the case for children who often drink medium-fat or low-fat milk. This is one conclusion of a thesis presented at the Sahlgrenska Academy.

The study showed that children who drink full-fat milk every day weigh on average just over 4 kg less.

"This is an interesting observation, but we don't know why it is so. It may be the case that children who drink full-fat milk tend also to eat other things that affect their weight. Another possible explanation is that children who do not drink full-fat milk drink more soft drinks instead", says dietician Susanne Eriksson, author of the thesis.

The scientists also discovered a difference between overweight children who drink full-fat milk every day and those who do not. Children who often drink milk with a fat content of 3% are less overweight. The thesis shows also that the children eat more saturated fat than recommended, but those children who have a

high intake of fat have a lower BMI than the children with a lower intake of fat.

Susanne Eriksson has investigated the nutrition, body composition and bone mineralization of 120 healthy 8-year-olds. Much of the results can now be used as a standard to determine what is normal for healthy children at that age. The children recounted what they had eaten during the previous day, and answered questions concerning how often they ate certain foods. Various risk markers in the children's blood were also measured.

"Many of these children had been examined when they were four years old, and we discovered that their eating habits were pretty much unchanged four years later. It appears to be the case that eating habits are established early", says Susanne Eriksson.

The thesis found that 62% of the children had low levels of vitamin D in their blood. The general guideline value for all people for vitamin D is 75-100 nmol/l, but most children had less than this. High levels of vitamin D are found in oily fish, while certain dairy products have been fortified with vitamin D. It can be difficult to obtain sufficient levels of the vitamin through the diet.

"We could not determine whether the children's level of vitamin D is correlated with their consumption of fish, but we did see that those children who ate oily fish, such as salmon and mackerel, at least once a week have higher values of the long-chain fatty acids EPA and DHA in their blood. This shows how important it is to eat such fish, instead of processed fish such as fish fingers", says Susanne Eriksson.

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Does green tea prevent cancer? Evidence continues to brew, but questions remain

PHILADELPHIA – Although scientists are reluctant to officially endorse green tea as a cancer prevention method, evidence continues to grow about its protective effects, including results of a new study published in *Cancer Prevention Research*, a journal of the American Association for Cancer Research, which suggests some reduction in oral cancer.

Vassiliki Papadimitrakopoulo, M.D., professor of medicine in the Department of Thoracic/Head and Neck Medical Oncology at the University of Texas M. D. Anderson Cancer Center, and colleagues tested green tea extract taken orally for three months at three doses among 41 patients: 500 mg/m², 750 mg/m² or 1,000 mg/m².

The researchers assessed clinical response in oral pre-malignant lesions and found 58.8 percent of patients at the highest doses displayed clinical response, compared with 18.2 percent among those taking placebo. They also observed a trend toward improved histology, and a trend towards improvement in a handful of biomarkers that may be important in predicting cancer development.

Patients were followed for 27.5 months and at the end of the study period, 15 developed oral cancer. Although there was no difference in oral cancer development overall between those who took green tea and those who did not, patients who presented with mild to moderate dysplasia had a longer time to develop oral cancer if they took green tea extract.

Although encouraged by the results, Papadimitrakopoulo cautioned against any recommendations that green tea could definitely prevent cancer.

"This is a phase II study with a very limited number of patients who took what would be the equivalent of drinking eight to 10 cups of green tea every single day," said Papadimitrakopoulo. "We cannot with certainty claim prevention benefits from a trial this size."

Dong Shin, M.D., professor of hematology and medical oncology and Blomeyer Endowed Chair in Cancer

Research at Emory School of Medicine, agreed, but said this trial is certainly a step in the right direction.

"A clinical trial with a natural compound is no easy task, and these researchers have accomplished that," said Shin, an editorial board member of Cancer Prevention Research. "The lack of toxicity is also important because often when you give supplements at higher doses than what would occur naturally, you induce nausea and vomiting. That did not happen in this trial."

Neither researchers had a reason why patients concerned about cancer should not drink green tea, but they cautioned against relying on the beverage to definitively reduce their risk of cancer.

"The goal of this kind of research is to determine whether or not these supplements have long-term prevention effects. More research including studies in which individuals at high risk are exposed to these supplements for longer time period is still needed to answer that sort of question," said Papadimitrakopoulou.

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Acetaminophen may be linked to asthma in children and adults

New research shows that the widely used pain reliever acetaminophen may be associated with an increased risk of asthma and wheezing in both children and adults exposed to the drug. Researchers from the University of British Columbia, Vancouver, BC, Canada, conducted a systematic review and metaanalysis of 19 clinical studies (total subjects=425,140) that compared the risk of asthma or wheezing with acetaminophen exposure.

The analysis showed that the pooled odds ratio (odds ratio for all studies combined) for asthma among users of acetaminophen was 1.63. The risk of asthma in children who used acetaminophen in the year prior to asthma diagnosis or in the first year of life was elevated to 1.60 and 1.47, respectively.

Furthermore, results showed a slight increase in the risk of asthma and wheezing with prenatal use of acetaminophen by mothers. Researchers speculate that acetaminophen's lack of inhibition of cyclooxygenase, the key enzyme involved in the inflammatory response of asthma, may be one explanation for the potential link between acetaminophen use and asthma.

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Researchers explore new ways to prevent spinal cord damage using a vitamin B3 precursor

Weill Cornell Medical College team receives \$2.5 million New York State research grant to undertake laboratory study

NEW YORK (November 5, 2009) -- Substances naturally produced by the human body may one day help prevent paralysis following a spinal cord injury, according to researchers at Weill Cornell Medical College. A recent \$2.5 million grant from the New York State Spinal Cord Injury Research Board will fund their research investigating this possibility.

The Weill Cornell team believes that permanent nerve damage may be avoided by raising levels of a compound that converts to nicotinamide adenine dinucleotide (NAD+) -- the active form of vitamin B3. The compound would potentially be administered immediately following spinal cord injury.

"Boosting NAD+ after injury may prevent permanent nerve death," explains Dr. Samie Jaffrey, associate professor of pharmacology at Weill Cornell Medical College. "Our study is aimed at synthesizing a molecule that, when given soon after injury, may augment the body's production of NAD+ and rescue these

cells before they are stressed beyond recovery."

The compound, called nicotinamide riboside (NR) -- a natural NAD⁺ precursor found in foods like milk -- as well as other NR derivatives have already been proven to protect against cell death and axonal degeneration in cultured cells and in models of spinal cord injury. In 2007, the authors reported results of laboratory experiments finding that NR can increase NAD⁺ concentrations as high as 270 percent when compared with untreated control cells. No other known agent has been shown to achieve these types of increases in cells.

NAD⁺ is known to play a key role in human cells by activating proteins called sirtuins that help the cells survive under stress. Sirtuins, which can be activated by compounds like resveratrol (found in large concentrations in the skin of grapes used to make red wine) have been shown to possess anti-aging and healing properties. The researchers believe that quickly increasing the NAD⁺ levels may help to activate the sirtuin levels in the cells and prevent cell death. This is especially important because when cells and tissues experience extreme trauma, NAD⁺ levels drop quickly.

In the newly funded research, the Weill Cornell team will conduct a lab study to see how NR compounds can raise NAD⁺ levels in cells that are stressed to the point that they will die within three to four hours, and instead survive as a consequence of treatment. In a separate study, Dr. Brett Langley from the Burke Rehabilitation Center in Westchester, N.Y. -- a hospital affiliated with Weill Cornell Medical College -- will test the compounds in mice with spinal injuries, with the hope of observing physical recovery and improvement in behavioral testing.

"We hope to show that a natural compound that can be produced cheaply and efficiently could be the key to preventing permanent injury," explains Dr. Anthony Sauve, associate professor of pharmacology at Weill Cornell Medical College. "We also believe that the compound would be perfectly safe to use in humans, since it is a vitamin that has not been shown to have negative effects on the body when artificially elevated."

Dr. Sauve has patented and pioneered a way to produce compounds that regulate NAD⁺ and specializes in making an array of NAD derivatives to determine which one best augments NAD⁺ levels in neurons.

"If this study is successful in animal testing, we hope to study the compound clinically," says Dr. Jaffrey.

Public release date: 9-Nov-2009

Antimicrobials: Silver (and copper) bullets to kill bacteria

November 9, 2009 -- Dana Filoti of the University of New Hampshire will present thin films of silver and copper she has developed that can kill bacteria and may one day help to cut down on hospital infections. The antimicrobial properties of silver and copper have been known for centuries -- last year, the U.S.

Environmental Protection Agency officially registered copper alloys, allowing them to be marketed with the label "kills 99.9% of bacteria within two hours." Copper ions are known to penetrate bacteria and disrupt molecular pathways important for their survival.

Using zeolite ceramic structures, Filoti is testing the hypothesis that the combination of silver and copper might work synergistically to better kill bacteria, work that she will present on November 12 at a meeting of the scientific society AVS in San Jose. "The hard ceramic structure looks like Swiss cheese and inside the holes there are ions of silver and copper," says Filoti.

By experimenting with the ratio of the two metals and the texture of the thin films, she has been able to reduce the amount of microbes present on the surface by 99 percent. One application of these antimicrobials, which Filoti is developing in partnership with a company in New Hampshire, is an

antimicrobial face mask designed to protect against pathogens that cause many hospital-acquired infections.

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People with less education could be more susceptible to the flu

ANN ARBOR, Mich.—People who did not earn a high school diploma could be more likely to get H1N1 and the vaccine might be less effective in them compared to those who earned a diploma, new research shows. The University of Michigan study looked at a latent virus called CMV in young people, and the body's ability to control the virus. Previous studies have shown that elderly people with less education are less successful at fighting off CMV, but this is the first known study to make that connection in younger adults as well, said study co-author Jennifer Dowd, who began the work while in the Health and Society Scholars program at the U-M School of Public Health. Previous studies have shown that high levels of CMV antibodies make it tougher for the elderly to fight new infections like H1N1, and hampers the body's immune response to the flu vaccine. The U-M findings suggest that lower socioeconomic status may make it tougher even for adults of all ages to fight new infections and may make the flu vaccine less effective. "We're showing that the ability to keep CMV under control varies by income and education even at much younger ages, and this could have implications for the ability to fight new infections like H1N1 for all ages, not just the elderly," said Dowd, now an assistant professor of epidemiology and biostatistics at Hunter College. Allison Aiello, assistant professor of epidemiology at University of Michigan SPH, is co-author. "We looked at CMV because it is an infection that is not cleared from the body but rather persists in a latent state with periodic reactivations in generally healthy individuals," Aiello said. "Immune response to CMV may serve as a marker of general immune alterations and is therefore an important indicator of health risks." CMV is a latent virus in the herpes family. Infection is common but the majority of people aren't symptomatic because the immune system keeps the virus under control. People of lower income and education lose immune control more easily, Dowd said. Their weakened immune systems, which may be due to increased levels of stress, make them more susceptible to other infections as well. "What is going on with the dramatic (downturn) in the economy could actually translate into people's susceptibility to these diseases," Dowd said. CMV is thought to be a prime culprit in breaking down the immune system as we age, and CMV is also associated with chronic conditions like heart disease. **In the study, a person with less than a high school education had the same level of immune control as someone 15-20 years older with more than a high school education, Dowd said.** **"When you listen to the current news about H1N1, it's interesting because everyone feels that this is a random threat, that we all have an equal chance of getting it,"** Dowd said. "This study points out that certain groups are potentially more susceptible and it's not just people with existing chronic illness." The study, "Socioeconomic Differentials in Immune Response," will appear in an upcoming issue of the journal Epidemiology.

The University of Michigan School of Public Health has been working to promote health and prevent disease since 1941, and is consistently ranked among the top five public health schools in the nation. Whether making new discoveries in the lab or researching and educating in the field, our faculty, students, and alumni are deployed around the globe to promote and protect our health. For more: <http://www.sph.umich.edu/>

Ralph's Note - Totally Bizarre...

These reports are done with the appreciation of all the Doctors, Scientist, and other Medical Researchers who sacrificed their time and effort. In order to give people the ability to empower themselves. Without the base aspirations for fame, or fortune.

Just honorable people, doing honorable things.