



The Vitamin & Herb Stores

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Higher urinary levels of commonly used chemical, BPA, linked with cardiovascular disease, diabetes

Higher urinary levels of commonly used chemical, BPA, linked with cardiovascular disease, diabetes
Higher levels of urinary Bisphenol A (BPA), a chemical compound commonly used in plastic packaging for food and beverages, is associated with cardiovascular disease, type 2 diabetes and liver-enzyme abnormalities, according to a study in the September 17 issue of JAMA.

This study is being released early to coincide with a Food and Drug Administration (FDA) hearing on BPA.

BPA is one of the world's highest production-volume chemicals, with more than two million metric tons produced worldwide in 2003 and annual increase in demand of 6 percent to 10 percent annually, according to background information in the article. It is used in plastics in many consumer products. "Widespread and continuous exposure to BPA, primarily through food but also through drinking water, dental sealants, dermal exposure, and inhalation of household dusts, is evident from the presence of detectable levels of BPA in more than 90 percent of the U.S. population," the authors write. Evidence of adverse effects in animals has created concern over low-level chronic exposures in humans, but there is little data of sufficient statistical power to detect low-dose effects. This is the first study of associations with BPA levels in a large population, and it explores "normal" levels of BPA exposure.

David Melzer, M.B., Ph.D., of Peninsula Medical School, Exeter, U.K., and colleagues examined associations between urinary BPA concentrations and the health status of adults, using data from the National Health and Nutrition Examination Survey (NHANES) 2003-2004. The survey included 1,455 adults, age 18 through 74 years, with measured urinary BPA concentrations.

The researchers found that average BPA concentrations, adjusted for age and sex, appeared higher in those who reported diagnoses of cardiovascular diseases and diabetes. **A 1-Standard Deviation (SD) increase in BPA concentration was associated with a 39 percent increased odds of cardiovascular disease (angina, coronary heart disease, or heart attack combined) and diabetes.**

When dividing BPA concentrations into quartiles, participants in the highest BPA concentration quartile had nearly three times the odds of cardiovascular disease compared with those in the lowest quartile. Similarly, those in the highest BPA concentration quartile had 2.4 times the odds of diabetes compared with those in the lowest quartile.

In addition, higher BPA concentrations were associated with clinically abnormal concentrations for three liver enzymes. No associations with other diagnoses were observed.

"Using data representative of the adult U.S. population, we found that higher urinary concentrations of BPA were associated with an increased prevalence of cardiovascular disease, diabetes, and liver-enzyme abnormalities. These findings add to the evidence suggesting adverse effects of low-dose BPA in animals. Independent replication and follow-up studies are needed to confirm these findings and to provide evidence

on whether the associations are causal," the authors conclude. "Given the substantial negative effects on adult health that may be associated with increased BPA concentrations and also given the potential for reducing human exposure, our findings deserve scientific follow-up."

Public release date: 16-Sep-2008

Research supports correlation between finger lengths and stress hormones

Edmonton—If you find yourself lacking in motivation to go for a run or hit the gym, you may want to check your fingers. According to a joint University of Alberta/ University of California- Riverside research study to be published by PLoS ONE, the online, open-access journal from the Public Library of Science, there is a direct correlation between digit length and voluntary exercise.

The study also casts some doubt on a previously released study which linked digit length and male aggression.

While both situations were first thought to have been caused by exposure to elevated levels of prenatal testosterone in the womb, research conducted using lab mice yielded no concrete evidence to support that original hypothesis. The new study, conducted using 1,000 white mice, seems to support a stronger connection between digit length, voluntary exercise and high levels of prenatal stress hormones, which was indicated by the difference in activity level between the control mice and the selectively-bred active mice. Given the results, the findings suggest that prenatal stress rather than prenatal testosterone levels in the womb, forms a component of the inherent desire for physical activity.

"The research shows a link, or relationship, between the brain, behaviour and personality traits and the shape of the hand," said Peter Hurd, University of Alberta psychology professor and one of the lead researchers. "It opens the door to the notion that aspects of one's personality, in this case the desire to exercise, are fixed very early in life."

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Colds and flu cut by one-third in study of Canada's top cold fighter in vaccinated seniors

A winter free from colds and flu? Not yet. But a new study offers new evidence that Canada's top cold and flu-fighting product provides significant help. The three-year study showed that trial participants who took COLD-FX were about one-third less likely to get a "Jackson" cold or flu. The very sensitive Jackson scoring method is a well-accepted scientific approach for judging clinical symptoms, which include coughing, sneezing, runny noses and others. COLD-FX is a unique extract of North American ginseng discovered by 25 Canadian scientists. The multi-center study also revealed that COLD-FX gave trial participants added protection on top of the flu shot's benefit.

The multi-centre study confirmed the results of previous clinical trials reviewed by Health Canada, the federal government's regulatory body. One study published in the Canadian Medical Association Journal showed that for trial participants who regularly suffer two colds a year, COLD-FX reduced their chance of getting a second one by 56%. Health Canada approved strong claims for the product last year.

The multi-centre trial involved 780 healthy seniors in four major Canadian cities who took the flu shot just prior to their six-month treatment phase as part of the study. Participants were given either the standard dose of two capsules a day or double the standard dose or a placebo. The study was led by Dr. Gerald Predy, Medical Officer of Health for Alberta Health Services, in collaboration with various leading Canadian researchers. Neither the participants nor the investigators were aware of who was receiving what

in this double-blind, placebo controlled trial.

The viral analysis was conducted in the lab of internationally recognized influenza expert, Dr. Albert Osterhaus. Based in the Netherlands, Dr. Osterhaus is one of the world's leading virologists and utilizes the most sensitive test methods available. Among his achievements and those of his group of 100 scientists were the identification of the first human infection with avian flu H5N1 in 1997 and the identity of the SARS virus during the first outbreak in Hong Kong in 2003.

Investigators employed two principal methods to check on upper respiratory infections: lab tests and the Jackson method. (A third method – non-Jackson assessment of symptoms in combination with lab tests – was also used.) While both methods were utilized, the Jackson method is actually more sensitive than lab testing in confirming symptomatic upper respiratory infections and gauging their severity.)

Compared to the placebo, both COLD-FX regimes produced similar and statistically significant reductions in the number of upper respiratory infections per individual – 36% for the lower dose and 33% for the higher dose.

Also, the number of Jackson infections in the standard dose COLD-FX group was 31% less than for the placebo group, while infections for the double dose group were 33% below the placebo group – statistically significant results.

However, investigators did not find statistically significant differences in confirmed infections, compared to placebo, when they looked at the data in a couple of other ways: based on lab testing alone; and considering lab plus symptom-based (but not Jackson) testing. It's possible the differences weren't statistically significant in these scenarios because the overall influenza numbers were so low during the two flu seasons studied. Also, the trial wasn't designed to measure viral load (the amount of virus in the body). So COLD-FX may actually have reduced the degree of infection in some people but the trial didn't check this.

It did confirm that both COLD-FX dosage levels were safe and well tolerated. Adverse events in the COLD-FX groups showed up at about the same rates as for the placebo group – with one intriguing exception. Both COLD-FX groups showed fewer negative cardiovascular events. The reason might be found in COLD-FX's effectiveness in reducing upper respiratory infections, which often go hand in hand with cardiovascular problems in seniors. This result was obtained through assessing safety aspects of the trial. It represents a potential new application for COLD-FX which, if pursued, would require more in-depth review.

Other than COLD-FX, there is no known clinically proven therapy for both prevention and treatment that naturally enhances the immune system to fight viral respiratory infections.

Public release date: 16-Sep-2008

Older people who diet without exercising lose valuable muscle mass

Exercise improves fitness, reduces fat

BETHESDA, Md. (Sept. 17, 2008) - A group of sedentary and overweight older people placed on a four-month exercise program not only became more fit, but burned off more fat, compared to older sedentary people who were placed on a diet but did not exercise.

The new study also showed that when older people diet without exercising, they lose more lean muscle compared to those who exercise, said senior researcher Bret H. Goodpaster. When they combined weight loss with exercise, it nearly completely prevented the loss of lean muscle mass. The results are important because older people tend to lose muscle mass as they age and too much muscle loss may interfere with

activities of daily living.

The study, "Separate and combined effects of exercise training and weight loss on exercise efficiency and substrate oxidation," appears in the current issue of the Journal of Applied Physiology, published by The American Physiological Society. Francesca Amati, John J. Dube, Chris Shay and Goodpaster, all of the University of Pittsburgh, carried out the study.

Study looks at exercise efficiency

The researchers wanted to know the best way to get better (more efficient) at completing a defined exercise task. In particular, they wanted to know if greater fitness could be achieved through exercise training, weight loss (through dieting), or both. In addition, they wanted to know which fuel source the body would draw upon, carbohydrates or fats, under these different conditions.

The 64 participants were 60-75 years of age and were either overweight or obese. All of the participants were sedentary at the outset of the study. The researchers divided the participants into three groups:

- exercise only
- diet only
- exercise plus diet

Those who exercised could either walk on a treadmill or ride a stationary bicycle, although most chose to walk. The dieters reduced their caloric intake to achieve a 10% weight loss by the end of the four-month study period. The final group combined both the daily exercise and the diet. Exercise increases efficiency, burns more fat

The researchers measured how many calories the participants expended during a set work load on a stationary bicycle at the beginning and at the end of the experiment. They found that the:

- Exercise group expended fewer calories (became more efficient) on the exercise task at the end of the study compared to the beginning.
- Exercise group drew more on fat stores as the source of their body's fuel.
- Diet-only group did not gain efficiency in performing the exercise task, even though they weighed less at the end of the experiment.
- Diet-only group's weight loss resulted from a loss of both muscle and fat.
- Exercise plus diet group was the most efficient at the exercise task at the end of the experiment. This shows an additive effect of both dieting and exercise, but most of that benefit was due to exercise.
- Exercise plus diet group, like the exercise-only group, drew more on fat stores as an energy source.

"The take-home message is that, even among older people and during a fairly short period of time, exercise produces metabolic changes that require the expenditure of fewer calories during physical activity," Goodpaster said. Exercise also allowed

Public release date: 18-Sep-2008

Does probiotic intervention induce the serum global lipid profile change?

The new global metabolic profiling techniques, like lipidomics as a branch of metabolomics, have made it possible to measure large numbers of different metabolites, and are currently being applied to increase our understanding of the health and disease continuum.

A Finland research group investigated the effect of a three weeks intervention of a probiotic LGG intervention on serum global lipidomics profiles in healthy adults. This will be published on 28 May 2008, in the World Journal of Gastroenterology. The result showed that there were decreases in the levels of lysophosphatidylcholines (LysoGPCho), sphingomyelins (SM) and several glycerophosphatidylcholines (GPCho), and increases in triacylglycerols (TAG) in the probiotic LGG group. These changes may contribute, for example, to the metabolic events behind the beneficial effects of LGG on gut barrier function seen in previous studies.

This study, done in collaboration with research groups of Associate Professor Riitta Korpela and Professor Matej Orešič, was the first to characterise the effect of probiotics on global lipidomics profiles. There were indications that **probiotic LGG** intervention may lead to changes in global lipidomics profiles reflected in decreased LysoGPCho and SM, mainly decreased GPCho and mainly elevated TAG. In addition, among the inflammatory variables, IL-6 was moderately associated by changes in global lipidomics profiles, while there was only a weak association between the lipidomics profiles and the two other inflammatory markers, TNF- α and CRP.

The new analytical capacity of lipidomics as a branch of metabolomics can increase our understanding of lipid biology, improve the characterisation of global lipid profiles and result in the identification of previously unknown changes in lipid metabolism. Probiotics have been mostly studied in the prevention and treatment of different gastrointestinal diseases and allergy, but the action mechanisms of probiotics are poorly understood. Metabolomics may provide powerful tools for identifying new biomarkers behind the clinical effects of probiotic intervention trials and for establishing relationships between molecular profiles and other known data from the same individual.

Public release date: 17-Sep-2008

Top-selling prescription drug mismarketed to women

Ithaca, N. Y. – September 17, 2008 – Lipitor has been the top-selling drug in the world and has accounted for over \$12 billion in annual sales. It has been prescribed to both men and women to lower cholesterol and reduce the risk of heart attack and stroke in patients with common risk factors for heart disease. However, a new study appearing in the Journal of Empirical Legal Studies was unable to find high quality clinical evidence documenting reduced heart attack risk for women in a primary prevention context. Furthermore, advertising omits label information relevant to women.

Theodore Eisenberg of Cornell Law School and Martin T. Wells of Cornell University assembled studies for a meta analysis of drugs' effects on cardiovascular risk, taking into account all relevant studies reporting risks for both men and women.

Not one of the studies that included women with a mixture of risk factors for heart attacks provided statistically significant support for prescribing Lipitor or other statins to protect against cardiovascular problems. Pfizer's claims of clinical proof that Lipitor reduces risk of heart attack in patients with multiple risk factors for heart disease does not appear to be scientifically supported for large segments of the female population.

In addition, Lipitor's advertising repeatedly fails to report that clinical trials were

statistically significant for men but not for women. Unqualified advertising claims of protection against heart attacks may therefore be misleading. Pfizer's advertising also does not disclose critical portions of the Lipitor FDA-approved label, which acknowledges the absence of evidence with respect to women.

"Our findings indicate that each year, reasonably healthy women spend billions of dollars on drugs in the hope of preventing heart attacks but that scientific evidence supporting their hope does not exist," the authors conclude.

Public release date: 18-Sep-2008

'Estrogen flooding our rivers,' Université de Montréal study

Montreal water treatment plants dumping as much as 90 times the critical amount of estrogen products into the river

The Montreal water treatment plant dumps 90 times the critical amount of certain estrogen products into the river. It only takes one nanogram (ng) of steroids per liter of water to disrupt the endocrinal system of fish and decrease their fertility.

These are the findings of Liza Viglino, postdoctoral student at the Université de Montréal's Department of Chemistry, at the NSERC Industrial Research Chair in Drinking Water Treatment and Distribution, who is under the supervision of Professors Sébastien Sauvé and Michèle Prévost.

The presence and effects of estrogen residues on aquatic wildlife are well documented. However, this research is unique because it didn't only consider natural hormones and those used in oral contraceptives – it also included products used in hormone therapy that is prescribed to menopausal women. Data indicates that 128 million contraceptive pills and 107 million doses of hormone therapy are consumed every year in Quebec.

Water samples were taken in five different spots: the Mille-Îles river, the St. Lawrence River, the two water collectors entering the Montreal treatment plant and at the exit of the plant.

The only compound detected in the St. Lawrence River was estradiol, a natural hormone. The water still contained 90 ng of estradiol per liter after being treated. "If other products weren't detected it doesn't mean they aren't present," says Viglino. "Our method doesn't detect amounts lower than 7 ng per liter."

According to Professor Sauvé, ozone treatments could eliminate these hormonal compounds. **He also stresses that 80 to 90 percent of antidepressants remain in the water after treatment.** These molecules can have a variety of effects on aquatic wildlife. Again, ozone treatment could destroy these molecules.

Public release date: 19-Sep-2008

Can Taurine be a potent antioxidant drug in the future?

Taurine is a potent antioxidant with hepatoprotective effects. Organelle based changes in hepatocytes after taurine treatment in experimental liver fibrosis were searched systematically and organelle injury scores decreased were found to decrease significantly. Moreover, ultrastructural and

histopathological scores in both groups were in strong correlation.

A research article to be published on August 21, 2008 in the World Journal of Gastroenterology addresses this question. The research team led by Mehmet Refik Mas from Gulhane School of Medicine in Turkey added a new information to their ongoing research works. Based on the fact that tissue health is directly related to functional recovery of the parenchyma cells during injury, the authors addressed the changes in major organelles in hepatocytes after administration of a hepatoprotective agent.

They not only demonstrated ultrastructural recovery with Taurine, but also reported that electron microscopy findings are reflected truly with light microscopy with the currently used scoring systems.

The results are to be helpful in future research in liver fibrosis.

The study is experimental; therefore, clinical confirmation is necessary. However, it can be postulated that similar changes occur in human hepatocytes in human chronic liver diseases if recovery can be attained.

Gulhane School of Medicine is a part of a large medical academy that was founded more than a century ago as a health staff source for the Turkish army. The academy currently supports not only institutional research projects but also keeps national and international scientific collaborations

Public release date: 22-Sep-2008

Acupuncture reduces side effects of breast cancer treatment as much as conventional drug therapy

Therapy shown to increase energy and overall well-being for breast cancer patients
Boston – Acupuncture is as effective and longer-lasting in managing the common debilitating side effects of hot flashes, night sweats, and excessive sweating (vasomotor symptoms) associated with breast cancer treatment and has no treatment side effects compared to conventional drug therapy, according to a first-of-its-kind study presented September 24, 2008, at the American Society for Therapeutic Radiology and Oncology's 50th Annual Meeting in Boston.

Findings also show there were additional benefits to acupuncture treatment for breast cancer patients, such as an increased sense of well being, more energy, and in some cases, a higher sex drive, that were not experienced in those patients who underwent drug treatment for their hot flashes.

"Our study shows that physicians and patients have an additional therapy for something that affects the majority of breast cancer survivors and actually has benefits, as opposed to more side effects. The effect is more durable than a drug commonly used to treat these vasomotor symptoms and, ultimately, is more cost-effective for insurance companies," Eleanor Walker, M.D., lead author of the study and a radiation oncologist at the Henry Ford Hospital Department of Radiation Oncology in Detroit, said.

The reduction in hot flashes lasted longer for those breast cancer patients after completing their acupuncture treatment, compared to patients after stopping their drug therapy plan.

Eighty percent of women treated for breast cancer suffer from hot flashes after being treated with chemotherapy and/or anti-estrogen hormones, such as Tamoxifen and Arimidex. Although hormone replacement therapy is typically used to relieve these symptoms, breast cancer patients cannot use this therapy because it may increase the risk of the cancer coming back. As a treatment alternative, patients are generally treated with steroids and/or antidepressant drugs. These drugs, however, have additional side effects, such as weight gain, nausea, constipation and fatigue. The antidepressant, venlafaxine (Effexor), a selective serotonin reuptake inhibitor, is one of the most common drugs used to treat these hot flashes. However, many women decide against this treatment choice because of potential side effects, including decreased libido, insomnia, dizziness and nausea, or because they simply do not want to take any more medications.

The randomized clinical trial compared acupuncture treatment to venlafaxine for 12 weeks to find out if acupuncture reduced vasomotor symptoms in breast cancer patients receiving hormonal therapy and produced fewer side effects than venlafaxine. The study involved 47 breast cancer patients who received either Tamoxifen or Arimidex and had at least 14 hot flashes per week. Results show that acupuncture reduces hot flashes as effectively as venlafaxine, with no side effects, and also provides additional health benefits to patients.

Public release date: 22-Sep-2008

Statins increase risk of postoperative delirium in elderly patients

The use of statins is associated with a 28% increased risk of postoperative delirium in elderly patients, found University of Toronto professor Dr. Donald Redelmeier and colleagues in a retrospective cohort analysis involving more than 280 000 patients.

Ontario's Institute for Clinical Evaluative Sciences (ICES) looked at elderly patients who underwent elective surgery in Ontario and who had received 2 or more prescriptions for statins in the year before surgery, including at least one prescription in the 90 days preceding surgery. Many patients took multiple medications, underwent abdominal, musculoskeletal or urogenital surgery which had a mean duration of about 115 minutes.

Delirium, in addition to causing anxiety in patients and families, contributes to longer hospital stays, a prolonged need for intensive care, and can disrupt and delay care.

They found that 1 in 14 elderly patients were taking statins before surgery and 1 in 90 experienced delirium. Longer surgeries and age over 70 years increased the risk of delirium.

"Our results suggest that this association was more than a coincidence, particularly among patients who received higher doses of statins and had longer duration noncardiac surgeries," state Dr. Redelmeier and colleagues. "The association between statins and risk of delirium was distinct and was not observed with other lipid-lowering medications, cardiovascular medications or common drugs that reflect underlying chronic diseases but have no major effects on the cardiovascular system."

The researchers suggest patients temporarily stop taking statins before surgery to lower their risk. If needed, restarting statins after surgery might provide their heart protecting benefits without the risk of delirium.

Public release date: 22-Sep-2008

Half of trials supporting FDA applications go unpublished

Over half of all supporting trials for FDA-approved drugs remained unpublished 5 years after approval, says new research published in this week's PLoS Medicine. The most important trials determining efficacy, and those with statistically significant results and larger sample sizes, are more likely to be published.

Ida Sim and colleagues from the University of California San Francisco searched the medical literature to determine the publication status of all 909 clinical trials that supported the 90 new drug approval applications approved by the US Food and Drug Administration (FDA) between 1998 and 2000. Although 76% of the pivotal trials (typically large Phase II or III trials designed to provide evidence on the overall risks and benefits of a drug) had been published in medical journals—usually within 3 years of FDA approval—only 43% of all of the submitted trials had been published.

The researchers also found evidence of selective reporting of the results from these trials. For example, Sim

and colleagues report that a pivotal trial in which a new drug works better than an old drug is more likely to be published than a trial in which the new drug does no better. This is a form of publication bias that may lead to an inappropriately favorable record in the medical literature of a drug's true risk-benefit profile relative to other standard therapies, and can lead to preferential prescribing of newer and more-expensive treatments, say the authors.

These new results provide a baseline for monitoring the effects of the FDA Amendments Act 2007, which was introduced to improve the accuracy and completeness of drug trial reporting. Under this Act, all trials supporting FDA-approved drugs must be registered when they start and the results of all the outcomes declared at trial registration as well as specific details about the trial protocol must be publicly posted within a year of drug approval on the US National Institutes of Health clinical trials.gov site.

Public release date: 22-Sep-2008

Indian spice reduces size of hemorrhagic stroke

You might want to make curcumin part of your daily diet.

This active ingredient of the Indian curry spice, turmeric, not only lowers your chances of getting cancer and Alzheimer's disease, but may reduce the size of a hemorrhagic stroke, say Medical College of Georgia researchers.

Second-year medical student Jay McCracken is working with Dr. Krishnan Dhandapani, neuroscientist in the MCG School of Medicine, using animal models to study curcumin's effect on intracerebral hemorrhages, bleeding in the brain caused by ruptured vessels.

Patients with this type of stroke are often treated for symptoms – such as headache and nausea – with medications, but not the stroke itself. Invasive surgery to remove the clot is usually needed, but some patients may not be good candidates, says Mr. McCracken. About 17 percent of strokes are hemorrhagic, according to the American Stroke Association, and usually occur in people with high blood pressure.

"We found that curcumin significantly decreases the size of a blood clot, but we're not sure why it happens," says the Alpharetta native. He thinks it may be because curcumin is a potent anti-inflammatory and antioxidant. For the study, he dissolved the yellow powder, which gives turmeric its color, in corn oil and injected it into the abdomen of an animal model of hemorrhagic stroke three times over three hours. He suspects less may work and is trying to establish the optimal dose and timing.

Timing is critical for patients who often don't know they have had a stroke and may not be seen by a physician for several hours. "Usually, patients can experience other symptoms like seizures, vision or cognitive problems, so they come to the (emergency room) fairly quickly under most circumstances," says Dr. Dhandapani. "Many patients also arrive due to head trauma and are seen within an hour or so. However, treating these injuries, even after an hour, can be tricky."

Patients likely will need to get curcumin intravenously. The researchers believe it may also help prevent strokes; they intend to pursue this line of study with the idea of also making it available in a concentrated tablet form for those at-risk.

Mr. McCracken has worked on this project since May as part of the School of Medicine Dean's Summer Research Fellowship, which enables rising sophomore students to design and participate in cutting-edge basic and/or clinical research. He is among 25 students who presented their findings Sept. 22. School of Medicine Dean D. Douglas Miller recognized students for their work and talked about the importance and role of research.

Mr. McCracken will continue his research through the year. "I like the research, and I think it's good preparation for residency," he says. He hopes to pursue a neurosurgery residency after graduation.

A graduate of the University of Georgia, where he received biochemistry and microbiology degrees, it was a high school football injury that inspired Mr. McCracken to pursue medicine.

"I snapped my ankle, and when I met the orthopedic surgeon, I thought he was so nice and interesting," says Mr. McCracken. "And then, for an anatomy class, we had to interview someone in science or health care, and I chose my surgeon. He let me shadow him, and I thought it was the best thing in the world."

During his first year at MCG, Mr. McCracken found he really enjoyed anatomy, especially neuroanatomy.

"I think it's interesting and challenging," he says. "I've seen patients come in who have terrible tumors or hemorrhages, and neurosurgeons can change their life in a matter of hours. Patients come in expecting three months to live, and surgeons give them years to live. It's amazing."

Public release date: 23-Sep-2008

Honey effective in killing bacteria that cause chronic sinusitis

Chicago, IL – **Honey is very effective in killing bacteria in all its forms, especially the drug-resistant biofilms that make treating chronic rhinosinusitis difficult**, according to research presented during the 2008 American Academy of Otolaryngology-Head and Neck Surgery Foundation (AAO-HNSF) Annual Meeting & OTO EXPO, in Chicago, IL.

The study, authored by Canadian researchers at the University of Ottawa, found that in eleven isolates of three separate biofilms (*Pseudomonas aeruginosa*, and methicillin-resistant and -susceptible *Staphylococcus aureus*), honey was significantly more effective in killing both planktonic and biofilm-grown forms of the bacteria, compared with the rate of bactericide by antibiotics commonly used against the bacteria.

Given the historical uses of honey in some cultures as a homeopathic treatment for bad wound infections, the authors conclude that their findings may hold important clinical implications in the treatment of refractory chronic rhinosinusitis, with topical treatment a possibility.

Chronic rhinosinusitis affects approximately 31 million people each year in the United States alone, costing over \$4 billion in direct health expenditures and lost workplace productivity. It is among the three most common chronic diseases in all of North America.

Public release date: 23-Sep-2008

Dark chocolate: Half a bar per week to keep at bay the risk of heart attack

An Italian study, the first outcome of a large epidemiological investigation, finds new beneficial effects of chocolate in the prevention of cardiovascular disease

Maybe gourmands are not jumping for joy. Probably they would have preferred bigger amounts to support their passion. Though the news is still good for them: 6.7 grams of chocolate per day represent the ideal amount for a protective effect against inflammation and subsequent cardiovascular disease. A new effect,

demonstrated for the first time in a population study by the Research Laboratories of the Catholic University in Campobasso, in collaboration with the National Cancer Institute of Milan.

The findings, published in the last issue of the Journal of Nutrition, official journal of the American Society of Nutrition, come from one of the largest epidemiological studies ever conducted in Europe, the Moli-sani Project, which has enrolled 20,000 inhabitants of the Molise region so far. By studying the participants recruited, researchers focused on the complex mechanism of inflammation. It is known how a chronic inflammatory state represents a risk factor for the development of cardiovascular disease, from myocardial infarction to stroke, just to mention the major diseases. Keeping the inflammation process under control has become a major issue for prevention programs and C reactive protein turned out to be one of the most promising markers, detectable by a simple blood test.

The Italian team related the levels of this protein in the blood of examined people with their usual chocolate intake. Out of 11,000, researchers identified 4,849 subjects in good health and free of risk factors (normal cholesterol, blood pressure and other parameters). Among them, 1,317 did not use to eat any chocolate, while 824 used to have chocolate regularly, but just the dark one.

"We started from the hypothesis- says Romina di Giuseppe, 33, lead author of the study- that high amounts of antioxidants contained in the cocoa seeds, in particular flavonoids and other kinds of poly-phenols, might have beneficial effects on the inflammatory state. Our results have been absolutely encouraging: people having moderate amounts of dark chocolate regularly have significantly lower levels of C-reactive protein in their blood. In other words, their inflammatory state is considerably reduced." The 17% average reduction observed may appear quite small, but it is enough to decrease the risk of cardio-vascular disease for one third in women and one fourth in men. It is undoubtedly a remarkable outcome".

Chocolate amounts are critical. "We are talking of a moderate consumption. **The best effect is obtained by consuming an average amount of 6.7 grams of chocolate per day, corresponding to a small square of chocolate twice or three times a week.** Beyond these amounts the beneficial effect tends to disappear".

From a practical point of view, as the common chocolate bar is 100 grams, the study states that less than half a bar of dark chocolate consumed during the week may become a healthy habit. What about the milk chocolate? "Previous studies- the young investigator continues- have demonstrated that milk interferes with the absorption of polyphenols. That is why our study considered just the dark chocolate".

Researchers wanted to sweep all the doubts away. They took into account that chocolate lovers might consume other healthy food too, as wine, fruits and vegetables. Or they might exercise more than others people do. So the observed positive effect might be ascribed to other factors but not to cocoa itself. "In order to avoid this- researcher says- we "adjusted" for all possible "confounding" parameters. But the beneficial effect of chocolate still remained and we do believe it is real".

"This study- says Licia Iacoviello, Head of the Laboratory of Genetic and Environmental Epidemiology at the Catholic University of Campobasso and responsible for the Moli-sani Project- is the first scientific outcome published from the Moli-sani Project. We consider this outcome as the beginning of a large series of data which will give us an innovative view on how making prevention in everyday life, both against cardiovascular disease and tumors".

"Maybe- Giovanni de Gaetano, director of the Research Laboratories of the Catholic University of Campobasso, adds - time has come to reconsider the Mediterranean diet pyramid and take the dark chocolate off the basket of sweets considered to be bad for our health".

Public release date: 23-Sep-2008

Popular COPD treatment increases risk for cardiac events, cardiac death

WINSTON-SALEM, N.C. – New research out of Wake Forest University School of Medicine shows that use of the most commonly prescribed once-a-day treatment for chronic obstructive pulmonary disease (COPD) for longer than one month increases the risk of cardiovascular death, heart attack or stroke by more than 50 percent.

Researchers Sonal Singh, M.D., M.P.H., and Curt Furberg, M.D., Ph.D., of Wake Forest, along with Yoon K. Loke, at the University of East Anglia, UK, conducted a meta-analysis of 17 double-blind, randomized trials involving a total of 14,783 patients with COPD. Participants received treatment with inhaled anticholinergics, another form of active therapy or a placebo inhaler.

An analysis of the data showed that use of inhaled anticholinergics for more than one month significantly increased the risk of cardiovascular death, heart attacks, or strokes in COPD patients by 58 percent.

The results appear in the Sept. 24 issue of *The Journal of the American Medical Association*.

Inhaled anticholinergics are a class of drugs that relax the airways and prevent them from getting narrower, making it easier to breathe. They also protect the airways from spasms that can suddenly cause the airway to become narrower (bronchospasm).

The two most commonly used inhalers from the anticholinergic class are tiotropium bromide, marketed by Pfizer as Spiriva™, and ipratropium bromide, made and marketed by Boehringer Ingelheim as Atrovent™.

"Patients with COPD who use these inhalers are at a high risk of excess serious cardiovascular events due to their use," said Singh, an assistant professor of internal medicine. "In absolute terms, if these inhalers are used for one year, nearly one in 40 patients using these inhalers may develop cardiac death related to the drug, and nearly one in 174 patients may develop a heart attack associated with these inhalers."

COPD is the fourth-leading cause of chronic morbidity and mortality in the United States, and is projected to rank fifth in 2020 in burden of disease worldwide. Cardiac death is leading cause of death among patients with COPD. Inhaled tiotropium is indicated for the long-term, once-daily maintenance treatment of symptoms associated with COPD and is the most widely used drug in COPD treatment. More than 8 million patients worldwide have used inhaled tiotropium since its approval.

The increased risk of cardiovascular events and cardiovascular death was particularly manifest in the five long-term trials (longer than 6 months) studied. In the 12 short-term trials, the direction of the drug effect was similar to that of the long-term trials.

"A regulatory reassessment of the cardiovascular safety concerns with this class of inhalers in patients with COPD is urgently needed," Singh said.

"These findings, especially the magnitude of the risk, and the consistency of the risk for heart attack, stroke and cardiac death, urge caution in the widespread use of these agents," he added. "Patients and doctors should decide whether these serious long-term cardiovascular risks outweigh their symptomatic benefits."

Public release date: 23-Sep-2008

Plant antioxidant may protect against radiation exposure

PITTSBURGH, Sept. 23 – Resveratrol, the natural antioxidant commonly found in red wine and many plants, may offer protection against radiation exposure, according to a study by the University of Pittsburgh School of Medicine. **When altered with acetyl, resveratrol administered before radiation exposure proved to protect cells from radiation in mouse models. The results of the research will be presented during the American Society for Therapeutic Radiology and Oncology's (ASTRO) 50th Annual Meeting in Boston.**

The study, led by Joel Greenberger, M.D., professor and chairman of the Department of Radiation Oncology at the University of Pittsburgh School of Medicine, is overseen by Pitt's Center for Medical Countermeasures Against Radiation. The center is dedicated to identifying and developing small molecule radiation protectors and mitigators that easily can be accessed and administered in the event of a large-scale radiological or nuclear emergency.

"New, small molecules with radioprotective capacity will be required for treatment in case of radiation spills or even as countermeasures against radiological terrorism," said Dr. Greenberger. "Small molecules which can be easily stored, transported and administered are optimal for this, and so far acetylated resveratrol fits these requirements well."

"Currently there are no drugs on the market that protect against or counteract radiation exposure," he added. "Our goal is to develop treatments for the general population that are effective and non-toxic."

Dr. Greenberger and his team are conducting further studies to determine whether acetylated resveratrol eventually can be translated into clinical use as a radioprotective agent. In 2004, this same team of researchers identified the drug JP4-039, which can be delivered directly to the mitochondria, the energy producing areas of cells. When this occurs, the drug assists the mitochondria in combating radiation-induced cell death.

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Isoflavone dietary supplement improves the functioning of the arteries in stroke patients

A dietary supplement containing isoflavone – a chemical found in soybeans, chickpeas, legumes and clovers – can improve artery function in stroke patients according to new research published online in Europe's leading cardiology journal, the European Heart Journal [1] today (Wednesday 24 September).

The study is believed to be the first randomised controlled trial to investigate the effects of isoflavone supplement on the way the brachial artery (the main artery in the arm) dilates in response to an increase in blood flow – a phenomenon known as flow-mediated dilation (FMD) – in patients with established cardiovascular disease. Brachial FMD is an indicator of the functioning of the cells that line the inner surfaces of blood vessels (vascular endothelium), and endothelial dysfunction is implicated in cardiovascular disease.

Professor Hung-Fat Tse, William MW Mong Professor in Cardiology and Academic Chief of the Cardiology Division in the Department of Medicine, Queen Mary Hospital, **The University of Hong Kong (Hong Kong, China) and his team found that 12 weeks of isoflavone supplement, at a dose of 80 mg a day, significantly improved brachial FMD and, therefore, vascular endothelial dysfunction in patients who had suffered an ischaemic stroke (a stroke caused by blood clots or other obstructions).**

"These findings may have important implications for the use of isoflavone for secondary prevention in patients with cardiovascular disease, on top of conventional treatments," the authors wrote in their EHJ paper.

The trial was a double-blind, placebo-controlled trial, involving 50 patients taking the isoflavone supplement, and 52 taking a placebo pill. The researchers measured FMD by using ultrasound to record the performance of the brachial artery as the blood flow returned to normal after having a pneumatic tourniquet on the forearm inflated and then released. FMD was defined as the percentage change in the brachial artery diameter between its normal size (baseline) and one minute after the tourniquet's deflation.

Eighty per cent of the patients had an impaired FMD of less than 3.7% at the start of the study, but after 12 weeks of isoflavone or placebo, there was an improvement of one per cent in the isoflavone-treated patients compared with the controls.

Prof Tse explained: "Although the absolute increase in brachial diameter – one per cent – is small, the relative increase actually amounted to about 50% because the mean average FMD in these stroke patients was about two per cent. In fact, in patients with severe endothelial dysfunction, there might not be dilatation of brachial diameter at all."

In their paper, the authors wrote: "The treatment effect of isoflavone in our study was comparable with lifestyle changes with endurance training or pharmacological interventions with statin therapy."

In addition, the prevalence of impaired FMD after 12 weeks became significantly lower in isoflavone-treated patients than in the controls (isoflavone: 58%, control: 79%). There was also a greater effect in patients with more severe endothelial dysfunction.

"The patients who had a lower initial FMD were found, in general, to respond with a larger absolute increase in FMD after receiving 12 weeks of isoflavone intervention, compared to patients who had a better baseline FMD in the first place," said Prof Tse. "These findings suggest that isoflavone reverses endothelial dysfunction in this group of patients with cardiovascular disease. This has important clinical implications, as the benefit of the treatment is conferred to the group of patients with the highest risks for cardiovascular events, and this effect persists, even at this rather late stage of the cardiovascular continuum."

No improvement from isoflavone treatment was found in diabetic patients compared with non-diabetic patients, but there was an improvement of one per cent in patients who were current smokers or who had smoked in the past compared with non- or never smokers. "Since smoking is known to be associated with more severe endothelial dysfunction, this observation was coherent with our hypothesis that patients with worse baseline endothelial function are, in general, more responsive to isoflavone treatment," said Prof Tse.

The researchers also found that 12 weeks of isoflavone treatment resulted in a significant decrease in levels of high-sensitivity C-reactive protein. This protein increases during systemic inflammation and is an independent predictor of cardiovascular-related events. "These findings suggested that isoflavone treatment alleviated vascular inflammatory stress and was an important component that mediated the reversal of endothelial dysfunction in this group of patients," wrote the authors.

Prof Tse said that the mechanisms by which isoflavone produces these changes in FMD were not completely understood. Other than the anti-inflammatory effect observed in this study, isoflavone is a major class of phytoestrogens – naturally occurring chemicals that mimic the effect of the human hormone oestrogen. Oestrogen is known to protect against heart disease and so this could be a possible mechanism.

He said it was too early to make clinical recommendations about the use of isoflavone supplements for stroke patients. "Our study implied that diets with higher isoflavone contents might be beneficial in reducing cardiovascular risk in ischaemic stroke patients. Since atherosclerosis is a generalised process, it might be reasonable to propose that a similar effect be observed in other kinds of CVD. However, specific response from different CVD-related conditions requires further testing. At this juncture, regular isoflavone supplement might not be advocated since the benefits and side effects of long-term supplementation are still unknown.

"A balanced diet is still the top priority in promoting health. Diets with higher soy content might be beneficial due to the isoflavone contents. These food products also, in general, have higher contents of

polyunsaturated fats, fibre, vitamins and less saturated fat."

Prof Tse and his colleagues are continuing with prospective studies of isoflavone to see what effect it has on clinical outcomes such as overall survival and the incidence of cardiovascular events.

Public release date: 24-Sep-2008

Probiotic bacteria can induce monocyte-derived dendritic cells maturation?

Probiotic bacteria are widely used to relieve the symptoms of many disorders such as inflammatory bowel syndrome, diarrhea, and allergies. Probiotic mixtures have also been found to reduce the symptoms of diarrhea. In children a probiotic bacterium *L. rhamnosus* GG has been shown to prevent the onset of atopy and allergies. However, the mechanisms that cause these beneficial actions are yet to be characterized. One of the factors contributing to the health promoting effects of probiotic bacteria could be their capacity to induce cytokine production that further regulates the development of innate and adaptive immune responses. Cytokines are small signaling molecules secreted by immune cells that direct the activation of innate and adaptive immune responses during microbial infections. Cytokines activate and recruit immune cells to the site of infection and increase host responses to pathogens. Many clinical trials have proven probiotic bacteria to be effective in preventing certain diseases or relieving their symptoms. However, there is a need for novel probiotic bacteria for clinical use.

A research article to be published on September 28, 2008 in the World Journal of Gastroenterology addresses this question. The research team led by Prof. Ilkka Julkunen from the National Public Health Institute (Finland) in collaboration with Valio Ltd (Finland), systematically screened nine potentially probiotic bacteria for their abilities to induce maturation and cytokine production in human monocyte-derived dendritic cells (moDC). MoDC were stimulated with different probiotic bacteria and cytokine levels were measured by enzyme-linked immunosorbent assay (ELISA). Maturation marker proteins from the surface of moDCs were stained with fluorescent dyes and detected by flow cytometry. The article further investigated the signaling pathways involved in bacteria induced cytokine gene expression by using pharmacological inhibitors.

All studied bacteria induced the maturation of moDCs. More detailed analysis with *Streptococcus thermophilus* THS, *B. breve* Bb99, and *L. subsp. cremoris* ARH74 indicated that these bacteria induced the expression of moDC maturation markers HLA class II and CD86 as efficiently as pathogenic bacteria. The bacterial strains studied differed in their ability to induce moDC cytokine gene expression. *S. thermophilus* induced the expression of pro-inflammatory (TNF-gamma?, IL-12, IL-6, and CCL20) and Th1 type (IL-12 and IFN-gamma?) cytokines, while *B. breve* and *L. lactis* were also potent inducers of anti-inflammatory IL-10. The results suggest that potentially probiotic bacteria are able to induce moDC maturation, but their ability to induce cytokine gene expression varies significantly from one bacterial strain to another. This article also demonstrates that mitogen-activated protein kinase (MAPK) p38, phosphatidylinositol 3 (PI3) kinase, and nuclear factor-kappa B signaling pathways are involved in bacteria-induced cytokine production.

This data is helpful in selecting new probiotic bacteria for in vivo trials and the knowledge of the cytokine production profiles of different probiotic bacteria may help in selecting specific probiotic strains for therapeutic purposes.

Public release date: 24-Sep-2008

Fishy diet in early infancy cuts eczema risk

Early introduction of fish decreases the risk of eczema in infants

An infant diet that includes fish before the age of 9 months curbs the risk of developing eczema, indicates research published ahead of print in the Archives of Disease in Childhood.

The prevalence of atopic eczema and other allergic disease has risen sharply in developed countries in recent decades, say the authors. Environmental and dietary factors are thought to play a part.

The researchers quizzed the parents of 6 month old babies born in western Sweden in 2003 about their child's diet and any evidence of allergic eczema. They were quizzed again when the children reached the age of 12 months.

The children were all part of an ongoing health study, Infants of Western Sweden, which is tracking the long term health of almost 17000 babies.

Complete birth data and two sets of questionnaires were obtained for almost 5000 of the 8000 families contacted.

At six months, 13% of families said that their youngest child had already developed eczema. By the time the children had reached 12 months of age, one in five had the condition.

The average age at which first symptoms appeared was 4 months.

Genes had a significant impact. Children with a sibling or mother who had the condition were almost twice as likely to be affected by the age of 12 months.

But breast feeding, the age at which dairy products were introduced into the diet, and keeping a furry pet in the house had no impact on risk. Around one in five households had a pet.

However, the introduction of fish into the diet before the age of 9 months cut the risk of developing the disease by 25%. And a pet bird was also associated with a significant reduction in risk.

Public release date: 24-Sep-2008

Researchers note differences between people and animals on calorie restriction

St. Louis, Sept. 24, 2008 — Calorie restriction, a diet that is low in calories and high in nutrition, may not be as effective at extending life in people as it is in rodents, according to scientists at Washington University School of Medicine in St. Louis.

Previous research had shown that laboratory animals given 30 percent to 50 percent less food can live up to 50 percent longer. Because of those findings, some people have adopted calorie restriction in the hope that they can lengthen their lives. But the new research suggests the diet may not have the desired effect unless people on calorie restriction also pay attention to their protein intake.

In an article published online this month in the journal Aging Cell, investigators point to a discrepancy between humans and animals on calorie restriction. In the majority of the animal models of longevity, extended lifespan involves pathways related to a growth

factor called IGF-1 (insulin-like growth factor-1), which is produced primarily in the liver. Production is stimulated by growth hormone and can be reduced by fasting or by insensitivity to growth hormone. In calorie-restricted animals, levels of circulating IGF-1 decline between 30 percent and 40 percent.

"We looked at IGF-1 in humans doing calorie restriction," says first author Luigi Fontana, M.D., Ph.D., assistant professor of medicine at Washington University and an investigator at the Istituto Superiore di Sanità in Rome, Italy. "For years, we have been following a cohort of people from the CR Society who have been on long-term calorie restriction. We found no difference in IGF-1 levels between people on calorie restriction and those who are not."

The CR Society members, who call themselves CRONies (Calorie Restriction with Optimal Nutrition), had been on a calorie-restriction diet for an average of seven years when Fontana did the measurements, but their IGF-1 levels were virtually identical to sedentary people who ate a standard, Western diet.

Because calorie restriction is linked to extraordinary increases in maximal lifespan in rats and mice, Fontana and colleagues at Washington University, including principal investigator John O. Holloszy, M.D., professor of medicine, have been involved in a scientific study that compares calorie restriction to exercise and measures many biological factors linked to longevity and health. Called the CALERIE study (Comprehensive Assessment of the Long term Effects of Reducing Intake of Energy), the project randomly divided 48 people into three groups: Eighteen cut their caloric intake by 25 percent for one year. Another 18 started exercising to increase their energy expenditure by 25 percent for a year. A third group of 10 people didn't change anything.

At the end of that year, the investigators measured IGF-1 levels in all three groups. Again they found no reductions in the group on calorie restriction.

"That was puzzling because it was the first time we hadn't seen agreement between mice and rats on calorie restriction and humans on calorie restriction," Fontana explains. "But we know there are two major influences on IGF-1 levels: calorie intake and protein intake. So we decided to look at the influence of protein."

Again, Fontana had a ready-made study group. His team has been following a population of strict vegans for several years. They tend to eat less protein than the CRONies from the CR Society, so he compared IGF-1 levels between the two groups.

"The vegans had significantly less circulating IGF-1, even if they were heavier and had more body fat than CRONies," he says. "Protein in the diet seemed to correlate with the lower levels of IGF-1. The strict vegans took in about 10 percent of their total calories from protein, whereas those on calorie restriction tended to get about 23 or 24 percent of calories from protein."

The investigators wanted to take one more look at the relationship between dietary

protein and IGF-1, so Fontana asked a group of CRONies to eat less protein for a few weeks. He says it was not easy to cut protein because those on calorie restriction have to do a lot of calculating and juggling to ensure they take in very few calories and still get adequate nutrition. Increasing dietary protein is one way many CRONies guard against becoming malnourished.

"But six of them agreed to lower their protein intake," Fontana explains, "and after three weeks their circulating IGF-1 declined dramatically."

Previous research from Fontana's group had found that a diet lower in protein might protect against some cancers. These more recent findings suggest lowering protein also might be important to longevity. Fontana admits his evidence is preliminary, but the findings suggest that when people adjust their diets to improve health and lengthen life, they should control not only calories and fat but also keep an eye on protein.

Fontana isn't proposing radical low-protein diets. Instead, he is suggesting the current recommended daily allowance (RDA) for protein, which is 0.82 grams of protein per kilogram of body weight, or about 56 grams of protein for an average, adult man and 46 grams for an average, adult woman. Most people, including CRONies, consume much more protein than the RDA recommendation.

"It's much easier to restrict protein than to restrict calories," he says. "If our research is on the right track, maybe humans don't need to be so calorie restricted. Limiting protein intake to .7 or .8 grams per kilogram per day might be more effective. That's just a hypothesis. We have to confirm it in future studies."

Until then, Fontana suggests people might want to look at protein consumption and tailor it to RDA recommendations. Traditionally, he says, nutritionists have not worried about people eating too much protein, but these findings suggest perhaps they should.

Public release date: 24-Sep-2008

How does ellagic acid exert anti-cancer effect on pancreatic cancer cells?

Ellagic acid was previously shown to have anticarcinogenic, antioxidant and antifibrosis properties. The anticarcinogenic effect of ellagic acid was shown in several types of cancers including skin, esophageal, and colon cancers. However the mechanisms mediating anti-cancer effect of ellagic acid, in general, remain unknown.

A research article to be published on 21 June 2008, in the World Journal of Gastroenterology addresses this question. The research team led by Dr. Edderkaoui from West Los Angeles VA Healthcare Center showed that Ellagic acid increases programmed cell death and decreases proliferation of pancreatic cancer cells. They showed that the mechanism through which ellagic acid causes cell death is through decreasing the activity

of the pro-survival transcription factor NF- κ B. The compound does not affect mitochondria. The results presented in this article show for the first time how this polyphenol regulates cancer cell proliferation and resistance to death and may help surpass the resistance of these cells to radio and chemotherapies.

The data of this article demonstrate the anti-cancer properties of ellagic acid as well as its mechanism of action. This opens the possibilities of using this compound in combination with other drugs that target other pro-survival proteins to increase cell death in pancreatic cancer cells

Public release date: 25-Sep-2008

Animals farmed for meat are the No. 1 source of food poisoning bug, study shows

A study by researchers from Lancashire, England, and Chicago, IL, found that 97 percent of campylobacteriosis cases sampled in Lancashire were caused by bacteria typically found in chicken and livestock. The work, which appears September 26 in the open-access journal PLoS Genetics, is based on DNA-sequence comparison of thousands of bacteria collected from human patients and animal carriers.

Campylobacter jejuni causes more cases of gastroenteritis in the developed world than any other bacterial pathogen, including E. coli, Salmonella, Clostridium and Listeria combined. Wild and domestic animals act as natural reservoirs for the disease, which can also survive in water and soil. However, the relative importance of these sources is unclear, and recent work has suggested that livestock are not the main reservoir for human disease.

Researchers led by Daniel Wilson, of the University of Chicago, and formerly Lancaster University, United Kingdom, sequenced the DNA of bacteria collected from 1,231 patients and compared it to Campylobacter jejuni DNA sequences collected from wild and domestic animals, and the environment. They used evolutionary modeling to trace the ancestry of human C. jejuni back to one of seven source populations.

In 57 percent of cases, the bacteria could be traced to chicken, and in 35 percent to cattle. Wild animal and environmental sources were accountable for just three percent of disease.

"The dual observations that livestock are a frequent source of human disease isolates and that wild animals and the environment are not, strongly support the notion that preparation or consumption of infected meat and poultry is the dominant transmission route," Wilson said.

Further studies are underway in the United States, the United Kingdom and New Zealand to determine the generality of the result. But the authors say they hope the current study will add impetus to initiatives aimed at controlling food-borne pathogens.

Public release date: 25-Sep-2008

Cholesterol-lowering drugs and the effect on muscle repair and regeneration

HILTON HEAD, SC—Statins are powerful drugs that reduce "bad" cholesterol and thus cut the risk of a heart attack. While these medications offer tremendous benefits to millions, they can carry side effects for some. **The most frequently reported consequence is fatigue, and about nine percent of patients report statin-related pain. Both can be exacerbated when statin doses are increased, or physical**

activity is added. The results of a new study may offer another note of caution for high-dose statin patients. Working with primary human satellite cell cultures, researchers have found that statins at higher doses may affect the ability of the skeletal muscles—which allow the body to move—to repair and regenerate themselves.

The study is entitled "Simvastatin Reduces Human Primary Satellite Cell Proliferation in Culture." It was conducted by Anna Thalacker-Mercer, Melissa Baker, Chris Calderon and Marcas Bamman, University of Alabama at Birmingham. They will discuss their findings at the American Physiological Society (APS; www.The-APS.org) conference, The Integrative Biology of Exercise V. The meeting is being held September 24-27, 2008 in Hilton Head, SC.

The Study

Statins have been reported to have adverse effects on skeletal muscle in both human and animal models causing cramping and fatigue and potentially myopathy. Relatively little is known regarding the effect of statins on the muscle progenitor cells (i.e., satellite cells (SC)) which play a key role in skeletal muscle repair and regeneration following exercise or injury. SC remain in a quiescent state until stimulated to proliferate. Statins are known to have antiproliferative effects in other cell types and therefore may inhibit or effect this critical step in muscle repair. Thus it is important to understand the influence of statins on SC function which may further affect the overall health and physiology of human skeletal muscle..

The study examined the proliferative capacity of human satellite cells in culture, which were exposed, to a lipophilic statin: simvastatin. The aim of the study was to determine SC viability during proliferation when treated with statins which may be indicative of the ability of SCs to undergo mitosis (i.e. divide to make new cells).

The research team used primary cell lines isolated from quadriceps muscle biopsies. SC were mixed and grown for 48 hours with several concentrations of statin: 0.0, 0 plus the solvent DMSO (control), 0.05, 0.1, 1.0, 10, or 100 μ M. The MTS assay was utilized to measure cell viability/reproducibility.

Additionally the investigators determined the effects of varying concentrations of simvastatin on SCs in different states (i.e., undergoing differentiation or differentiated into myotubes).

Key Findings

The researchers found the following:

There was a dose dependent decrease in the viability of the satellite cells at 1.0, 10 and 100 μ M concentrations of simvastatin. At approximately 5.0 μ M concentration the viability of the proliferating cells was reduced by 50% (equivalent to the availability of simvastatin in circulation from a 40 milligram dose per day used in some patients). Specifically, the higher end concentrations led to reduced SC proliferation, which would likely negatively affect the muscle's ability to heal and/or repair itself.

There was no change in the viability of satellite cells at concentrations of 0.05 or 0.1 μ M.

Cell viability was reduced by approximately half in differentiating cells and myotubes with concentrations of 1.0 and 5.0 μ M, respectively.

Next Steps

According to Dr. Thalacker-Mercer, a member of the research team, "While these are preliminary data and more research is necessary, the results indicate serious adverse effects of statins that may alter the ability of

skeletal muscle to repair and regenerate due to the anti-proliferative effects of statins."

Looking ahead, she added, "**We are very interested in these effects in the older population. It is possible that older adults may not be able to distinguish between muscle pain related to a statin effect or an effect of aging and therefore adverse effects of statins in older adults may be under-reported.** Therefore, our next step is to examine statins among older adults."

Public release date: 25-Sep-2008

Majority of children vaccinated against hepatitis B not at increased risk of MS

ST. PAUL, Minn. – The majority of children vaccinated against hepatitis B are not at an increased risk of developing multiple sclerosis (MS), according to a study to be published in the October 8, 2008, online issue of Neurology®, the medical journal of the American Academy of Neurology.

The study based in France involved 349 children with MS and 2,941 children without the disease. The children were all under the age of 16. A total of 24.4 percent of the children with MS were vaccinated for hepatitis B in the three years before the study, compared to 27.3 percent for the children without MS.

Although the study found that hepatitis B vaccination does not generally increase the risk of multiple sclerosis, the children with MS were 1.74 times more likely to have received a certain type of hepatitis B vaccine, called Engerix B®. Those children with MS developed symptoms three or more years after the vaccine. The risk was only found for this specific type of hepatitis B vaccine and not found for all vaccines against hepatitis B.

This association cannot be taken as confirmation that the vaccine caused MS. Further studies are needed to determine whether this is a causal relationship.

Ralph's Note - Pull the vaccine, until it can be determined whether is harming children or not. In addition, by now means should it be mandatory if risk outweighs benefit.

Public release date: 26-Sep-2008

Researchers study how pistachios may improve heart health

Going green may be heart healthy if the green you choose is pistachio nuts, according to researchers at Penn State who conducted the first study to investigate the way pistachios lower cholesterol.

"We investigated mechanisms of action to explain the cholesterol-lowering effects of the pistachio diets," says Sarah K. Gebauer, recent Penn State Ph.D. recipient, currently a post-doctoral research associate, USDA Beltsville Human Nutrition Research Center.

The researchers conducted a randomized, crossover design, controlled feeding experiment to test the effects of pistachios added to a heart healthy moderate-fat diet on cardiovascular disease risk factors. Controlled feeding experiments provide all the food eaten by study subjects for the duration of the study segment.

The participants began the study by eating a typical American diet consisting of 35 percent total fat and 11 percent saturated fat for two weeks. They then tested three diets for four weeks each with about a two-week break between each diet. All three diets were variations on the Step I Diet, a cholesterol-lowering diet in general use. The diets included, as a control, a Step I Diet with no pistachios and about 25 percent total fat and 8 percent saturated fat. The pistachio enhanced diets were Step I Diets with 10 and 20 percent of the energy supplied by pistachio nuts, respectively. The 10 percent pistachio diet had 30 percent total fat and 8 percent saturated fat and the 20 percent pistachio diet had 34 percent total fat and 8 percent saturated fat.

The participants ate half their pistachios as a snack and the rest incorporated into meals.

The researchers report in the most recent issue of the American Journal of Clinical Nutrition that "Inclusion of pistachios in a healthy diet beneficially affects cardiovascular disease risk factors in a dose-dependent manner, which may reflect effects on Stearoyl CoA Desaturase (SCD)." The researchers used the ratio of two fatty acids, 16:1 and 16:0 in plasma as a marker for SCD, an enzyme that is involved in the body's synthesis of fatty acids.

"SCD is an important enzyme involved in cholesterol metabolism," says Gebauer.

They found the ratio of 16:1/16:0 was significantly lower, suggesting a decrease in SCD activity, after eating the 20 percent energy pistachio diet compared to the control diet which had no pistachios. Also, the change in the 16:1/16:0 ratio was correlated with the change in cholesterol, suggesting that SCD activity may contribute to the lipid-lowering effects of pistachios. That, accompanied by the dose-dependent effects of the pistachios, begins to unravel the way in which pistachios improve cardiovascular health.

Compared to the control diet, the 20 percent pistachio diet lowered LDL cholesterol -- bad cholesterol -- about 12 percent and the 10 percent energy pistachio diet lowered LDL cholesterol by 9 percent that suggests a 9 to 12 percent decrease in coronary heart disease risk. The relationships of total cholesterol to HDL cholesterol and LDL cholesterol to HDL cholesterol may be more powerful predictors of cardiovascular risk. The effects of the 10 and 20 percent energy diets showed a dose dependent effect on these ratios.

However, the researchers note that the reduction in LDL cholesterol observed was seven times greater than would be expected from only the fatty acid profile of pistachios. They suggest that the lipid lowering effects not only reflect the fatty acid profile of the diet, but also are the result of other bioactive substances in pistachios, perhaps phytosterols and fiber.

"Our study has shown that pistachios, eaten with a heart healthy diet, may decrease a person's CVD risk profile, says Penny Kris-Etherton, distinguished professor of nutrition and primary investigator of the study."

Public release date: 29-Sep-2008

Blood thinning drug linked to increased bleeding in brain

ST. PAUL, Minn. – A new study shows that people who take the commonly used blood thinning drug warfarin may have larger amounts of bleeding in the brain and increased risk of death if they suffer a hemorrhagic stroke. The study is published in the September 30, 2008, print issue of *Neurology*, the medical journal of the American Academy of Neurology.

Warfarin is commonly prescribed to prevent blood clotting. Studies have shown it helps prevent ischemic stroke for patients with an abnormal heart rhythm called atrial fibrillation. However, if the drug makes the

blood too thin, it can increase the risk of brain hemorrhage, a type of stroke caused by bleeding in the brain.

The study involved 258 people who had brain hemorrhage, 51 of whom were taking warfarin. Participants were 69 years old on average and lived in or near Cincinnati. The group underwent brain scans to confirm the type of stroke. The brain scans were used to measure the size of the blood clots.

The study found that people who took warfarin and suffered a brain hemorrhage while their international normalized ratio (INR) was above three had about twice as much initial bleeding as those not taking warfarin. However, this effect was not seen in people whose blood was more likely to clot as determined by an INR of less than three. An INR test measures the blood's ability to clot.

"Warfarin is very effective for preventing ischemic strokes among people with atrial fibrillation and for most patients with this condition it is the right choice," said study author Matthew L. Flaherty, MD, with the University of Cincinnati and member of the American Academy of Neurology. "However, people who have bleeding into the brain while taking warfarin are at greater risk of dying than other people with hemorrhagic stroke. Our study may help to explain why. Fortunately, we did not see larger blood clots in people with an INR of less than three. For most patients on warfarin, the goal INR is between two and three. This shows the importance of good monitoring and adjustment of warfarin dose. People should talk to their doctors about the proper management of warfarin and learn the signs of stroke so they can get to an emergency room immediately if a stroke occurs."

Ralph's note - Duh...

Public release date: 29-Sep-2008

New study proves that pain is not a symptom of arthritis, pain causes arthritis

New treatments will seek to interrupt 'crosstalk' between joints and the spinal cord
Pain is more than a symptom of osteoarthritis, it is an inherent and damaging part of the disease itself, according to a study published today in journal *Arthritis and Rheumatism*. **More specifically, the study revealed that pain signals originating in arthritic joints, and the biochemical processing of those signals as they reach the spinal cord, worsen and expand arthritis.** In addition, researchers found that nerve pathways carrying pain signals transfer inflammation from arthritic joints to the spine and back again, causing disease at both ends.

Technically, pain is a patient's conscious realization of discomfort. Before that can happen, however, information must be carried along nerve cell pathways from say an injured knee to the pain processing centers in dorsal horns of the spinal cord, a process called nociception. The current study provides strong evidence that two-way, nociceptive "crosstalk" may first enable joint arthritis to transmit inflammation into the spinal cord and brain, and then to spread through the central nervous system (CNS) from one joint to another.

Furthermore, if joint arthritis can cause neuro-inflammation, it could have a role in conditions like Alzheimer's disease, dementia and multiple sclerosis. Armed with the results, researchers have identified likely drug targets that could interfere with key inflammatory receptors on sensory nerve cells as a new way to treat osteoarthritis (OA), which destroys joint cartilage in 21 million Americans. The most common form of arthritis, OA eventually brings deformity and severe pain as patients lose the protective cushion between bones in weight-bearing joints like knees and hips.

"Until relatively recently, osteoarthritis was believed to be due solely to wear and tear, and inevitable part of aging," said Stephanos Kyrkanides, D.D.S., Ph.D., associate professor of Dentistry at the University of Rochester Medical Center. "Recent studies have revealed, however, that specific biochemical changes contribute to the disease, changes that might be reversed by precision-designed drugs. Our study provides the first solid proof that some of those changes are related to pain processing, and suggests the mechanisms

behind the effect," said Kyrkanides, whose work on genetics in dentistry led to broader applications. The common ground between arthritis and dentistry: the jaw joint is a common site of arthritic pain.

**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.**