



The Vitamin & Herb Stores

Human Technology Research Synopsis

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Compiled By Ralph Turchiano

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Public release date: 1-Apr-2008

Could Botulinum Toxin Be Bad for You?

Botulinum toxins (BoNTs) are used increasingly to treat maladies from spasms and migraines to obesity and wrinkles. It has been assumed that the toxin remains localized at the injection site, where it cleaves proteins involved in vesicle fusion, thereby blocking neurotransmitter release. But now Antonucci et al. demonstrate that BoNT/A is retrogradely transported along microtubules, transcytosed, and taken up by afferent terminals. When BoNT/A was injected into one hippocampus in rats, it cleaved its target [synaptosomal-associated protein of 25 kDa (SNAP-25)] in the contralateral hippocampus, resulting in reduced neuronal activity. Similarly, when BoNT/A was injected into the superior colliculus or whisker pads, SNAP-25 was cleaved in the retina and facial nucleus, respectively. In the retina, BoNT/A remained active for at least 25 d after injection. Although cleaved SNAP-25 was detected only in afferents that projected directly to the injection site, it is not clear whether further transcytosis would occur over time.

Ralph's Note - It has been a long held hypothesis of mine. That the way botulism effects the acetyl choline receptors, would lead to memory disorders.

Public release date: 1-Apr-2008

Viruses, oxygen and our green oceans

Some of the oxygen we breathe today is being produced because of viruses infecting micro-organisms in the world's oceans, scientists heard today (Wednesday 2 April 2008) at the Society for General Microbiology's 162nd meeting being held this week at the Edinburgh International Conference Centre.

About half the world's oxygen is being produced by tiny photosynthesising creatures called phytoplankton in the major oceans. These organisms are also responsible for removing carbon dioxide from our atmosphere and locking it away in their bodies, which sink to the bottom of the ocean when they die, removing it forever and limiting global warming.

“In major parts of the oceans, the micro-organisms responsible for providing oxygen and

locking away carbon dioxide are actually single celled bacteria called cyanobacteria,” says Professor Nicholas Mann of the University of Warwick. “These organisms, which are so important for making our planet inhabitable, are attacked and infected by a range of different types of viruses.”

The researchers have identified the genetic codes of these viruses using molecular techniques and discovered that some of them are responsible for providing the genetic material that codes for key components of photosynthesis machinery.

“It is beginning to become clear to us that at least a proportion of the oxygen we breathe is a by-product of the bacteria suffering from a virus infection,” says Professor Mann. **“Instead of being viewed solely as evolutionary bad guys, causing diseases, viruses appear to be of central importance in the planetary process. In fact they may be essential to our survival.”**

Viruses may also help to spread useful genes for photosynthesis from one strain of bacteria to another.

Public release date: 2-Apr-2008

Feta cheese made from raw milk has natural anti-food-poisoning properties

Eating Feta cheese made from raw milk in small seaside tavernas when you are on holiday in Greece could be a good way to combat food poisoning, according to researchers speaking today (Thursday 3 April 2008) at the Society for General Microbiology’s 162nd meeting being held this week at the Edinburgh International Conference Centre.

“We were able to isolate lactic acid bacteria found in raw sheep milk from small farms in Macedonia, northern Greece. Several of these friendly bacteria naturally produce antibiotics that killed off dangerous food-poisoning bacteria like Listeria,” says Panagiotis Chanos, a researcher from the University of Lincoln. “Interestingly, we identified these friendly bacteria as enterococci, more commonly recognised as virulent and/or antibiotic resistant bacteria in hospitals. We found some strains could produce up to three different natural substances to fight different food pathogens.”

The unique taste of many local cheeses, especially from Greece and other parts of the Mediterranean, is mainly due to the enterococcal bacteria they contain. Apart from their sometimes sinister role when antibiotic resistant strains cause hospital infections, enterococci are important in the food flavouring and manufacturing industries.

Listeria is one of the most dangerous food poisoning bacteria because it can survive in places and conditions that other bacteria cannot. It can be found in foods made from animal products as a result of poor heat processing or mishandling, which causes post-production contamination, for example when butchers or retailers fail to wash their hands

between touching cooked pies and raw meats.

“We hope that this work will lead to ways of fighting foodborne pathogens, using the naturally produced compounds called bacteriocins made by other bacteria,” says Mr Chanos. “We discovered that all the useful strains of bacteria that produced bacteriocins were able to grow in extreme conditions resembling those commonly found in foods, including the low temperatures found in our refrigerators and the salty conditions found in some cheese.”

Instead of putting additives and synthetic preservatives in foods, the scientists hope they can harness the properties of the useful bacteria to use them as micro-allies against disease-causing bacteria like Listeria.

Listeria is particularly dangerous, causing food poisoning or even death in vulnerable people like children and the elderly, and in pregnant women where it commonly triggers miscarriages. Patients on medication for cancer or HIV, or with heart, liver or kidney transplants are also particularly at risk as their immune systems are weakened.

“It is known that enterococci in general may have the same properties as good gut bacteria. We hope our bacteria possess these properties too, so they could colonise our small intestine and fight Listeria from within the body,” says Panagiotis Chanos. “If we can ensure the safety of these useful bacteria, they could guard us humans by killing foodborne pathogens,”

The researchers hope to minimise the use of ‘not-so-friendly’ synthetic preservatives in foods by replacing them with naturally produced bacteriocins, which may open up new opportunities for organic food production.

Public release date: 2-Apr-2008

Stanford researcher criticizes FDA plans to reduce oversight of off-label drug use

STANFORD, Calif. - Proposed guidelines from the U.S. Food and Drug Administration would allow companies to market more drugs for unapproved uses and are a step in the wrong direction, said a researcher from the Stanford University School of Medicine.

In an editorial to be published in the April 3 issue of The New England Journal of Medicine, Randall Stafford, MD, PhD, associate professor of medicine at the Stanford Prevention Research Center, criticized the draft guidelines, which are subject to public comment through April 21. They curtail the FDA's already limited authority over the marketing of drugs for off-label uses, Stafford said.

While most people assume that the medicines prescribed by doctors in the United States have the FDA's stamp of approval, that's only partially true. The FDA approves drugs for

specific purposes, but doctors can use drugs "off-label" for medical conditions not approved by the FDA.

Off-label prescribing for medical conditions not scrutinized during the FDA approval process is common. There's nothing illegal about off-label prescribing, and in many cases it's good medicine, said Stafford, who directs Stanford's Program on Prevention Outcomes and Practices. As long as the FDA has approved a drug for one condition, physicians are free to prescribe it for anything.

Unfortunately, what's known about the use of a drug for one situation may not apply to other clinical scenarios. Stafford pointed to the use of antidepressants in children and the use of antipsychotic medications for dementia as key examples.

"The FDA should not suddenly start telling physicians how to practice. Physician judgment is critical, especially when approved therapies have not succeeded. Off-label prescribing can be an important tool in such cases," he said. "But in other cases, off-label prescribing has become first-line therapy even in the absence of strong evidence of benefits and safety. This is problematic."

Stafford said these types of situations suggest the need for a better way to evaluate and regulate off-label drug use. Ideally, he said, a drug company would go back to the FDA with additional clinical studies and obtain supplemental approval for a new clinical use.

Off-label drug use is already common, but applications to the FDA for approval of new uses are uncommon, said Stafford. This process may be seen as irrelevant by drug manufacturers, who have strategies for expanding their off-label markets and boosting drug sales without formal FDA approval.

Although FDA regulations restrict drug manufacturers from overtly promoting their drugs for unapproved conditions, they are free to share educational materials with physicians, most often as published journal articles. According to current FDA guidelines, this practice is acceptable, but only if the manufacturer submits the articles to the FDA for review and is pursuing formal FDA approval for the new use. In reality, however, FDA enforcement is limited, said Stafford.

The new draft guidelines further pull back FDA involvement by eliminating both of these requirements. In addition, they reduce the remaining policies to non-binding recommendations.

This concerned Stafford, who wrote in the NEJM editorial: "The FDA may be conceding to drug manufacturers the responsibility for regulating their own off-label marketing practices. The agency may also believe that its limited resources can be put to better or more effective use in confronting other ongoing challenges. Nevertheless, I believe that the FDA must take an active role in fostering evidence-based practice, eliminating subversion of the approval process, and requiring a balanced and fair presentation of the scientific evidence."

One of the proposed guidelines' major pitfalls, said Stafford, would be allowing drug manufacturers to skip obtaining approval for potentially lucrative drug uses. Instead, companies might seek approval only for a narrower use that's more easily and less expensively tested, and sponsor research on more commercially promising uses that are never evaluated by the FDA. Stafford warned that this might encourage widespread treatment of conditions with drugs never approved by the FDA for those purposes.

Off-label use is already burgeoning. In a 2006 examination of off-label prescribing of 160 common drugs, **Stafford found that off-label use accounted for 21 percent of all prescriptions and 73 percent of these uses had little or no scientific support** (Archives of Internal Medicine, May 8, 2006). Drugs approved for depression, schizophrenia and seizures were most likely to be used off-label without adequate support for other conditions.

Public release date: 2-Apr-2008

A coffee with your doughnut could protect against Alzheimer's disease

A daily dose of caffeine blocks the disruptive effects of high cholesterol that scientists have linked to Alzheimer's disease. A study in the open access publication, *Journal of Neuroinflammation* revealed that caffeine equivalent to just one cup of coffee a day could protect the blood-brain barrier (BBB) from damage that occurred with a high-fat diet.

The BBB protects the central nervous system from the rest of the body's circulation, providing the brain with its own regulated microenvironment. Previous studies have shown that high levels of cholesterol break down the BBB which can then no longer protect the central nervous system from the damage caused by blood borne contamination. BBB leakage occurs in a variety of neurological disorders such as Alzheimer's disease.

In this study, researchers from the University of North Dakota School of Medicine and Health Sciences gave rabbits 3 mg caffeine each day – the equivalent of a daily cup of coffee for an average-sized person. The rabbits were fed a cholesterol-enriched diet during this time.

After 12 weeks a number of laboratory tests showed that the BBB was significantly more intact in rabbits receiving a daily dose of caffeine.

“Caffeine appears to block several of the disruptive effects of cholesterol that make the blood-brain barrier leaky,” says Jonathan Geiger, University of North Dakota School of Medicine and Health Sciences. “High levels of cholesterol are a risk factor for Alzheimer's disease, perhaps by compromising the protective nature of the blood-brain barrier. For the first time we have shown that chronic ingestion of caffeine protects the BBB from cholesterol-induced leakage.”

Caffeine appears to protect BBB breakdown by maintaining the expression levels of tight junction proteins. These proteins bind the cells of the BBB tightly to each other to stop unwanted molecules crossing into the central nervous system.

The findings confirm and extend results from other studies showing that caffeine intake protects against memory loss in aging and in Alzheimer's disease.

“Caffeine is a safe and readily available drug and its ability to stabilise the blood-brain barrier means it could have an important part to play in therapies against neurological disorders,” says Geiger.

Public release date: 2-Apr-2008

Natural trans fats have health benefits, University of Alberta study shows

Contrary to popular opinion, not all trans fats are bad for you.

University of Alberta researcher Flora Wang found that a diet with enriched levels of trans vaccenic acid (VA) – a natural animal fat found in dairy and beef products – can reduce risk factors associated with heart disease, diabetes and obesity

Results indicated this benefit was due in part to the ability of VA to reduce the production of chylomicrons – particles of fat and cholesterol that form in the small intestine following a meal and are rapidly processed throughout the body. The role of chylomicrons is increasingly viewed as a critical missing link in the understanding of conditions arising from metabolic disorders.

“Our results provide further evidence of the important role of chylomicrons in contributing to risk factors associated with metabolic disorders,” said Wang, a PhD candidate in the University of Alberta Faculty of Agricultural, Life and Environmental Sciences. “They also indicate a strong opportunity for using diets with enhanced VA to help reduce these risk factors.”

The research involved two VA feeding trials – one short-term (three weeks) and one long-term (16 weeks) – using model rat species for obesity and the metabolic syndrome.

The results, presented recently at the International Symposium on Chylomicrons in Disease, included novel findings that VA may have direct effects on the intestine. In addition, they showed key metabolic risk factors were reduced. For example, in the long-term trial, total cholesterol was lowered by approximately 30 per cent, LDL cholesterol was lowered by 25 per cent and triglyceride levels were lowered by more than 50 per cent.

Because VA is the major natural trans fat in dairy and beef products, comprising more than 70 per cent of the proportion of natural trans fat content in those products, the findings support a growing body of evidence that indicates natural animal-based trans fat is different than harmful hydrogenated trans fat created through industrial processing, Wang noted.

“As the VA results illustrate, some natural trans fats are not harmful and may in fact be very good for you,” she said.

Public release date: 3-Apr-2008

Essential nutrient found in eggs reduces risk of breast cancer by 24 percent

Most women in the US consume too little choline

Park Ridge, Ill. (April 3, 2008) Choline, an essential nutrient found in foods such as eggs, is associated with a 24 percent reduced risk of breast cancer, according to a study supported by a grant from the U.S. National Institutes of Health (NIH), to be published in The FASEB Journal's print issue in June.(1) This study adds to the growing body of evidence that links egg consumption to a decreased risk of breast cancer.

In this new case-control study of more than 3,000 adult women, the risk of developing breast cancer was 24 percent lower among women with the highest intake of choline compared to women with the lowest intake. Women with the highest intake of choline consumed a daily average of 455 mg of choline or more, getting most of it from coffee, eggs and skim milk. Women with the lowest intake consumed a daily average of 196 milligrams or less.

"Choline is needed for the normal functioning of cells, no matter your age or gender," says Steven H. Zeisel, MD, PhD, University of North Carolina, who is an author of the study and a leading choline researcher. "Increasing evidence shows that it may be particularly important for women, particularly those of child-bearing age."

Only ten percent of Americans currently meet the recommended intake for choline, identifying a need to increase choline intake across the population.(2) According to the Institute of Medicine, adequate choline intake is 550 milligrams per day for men and breastfeeding women, 425 milligrams per day for women, and 450 milligrams per day for pregnant women.(3) One egg contains 125.5 milligrams of choline, or roughly a quarter the recommended daily supply, making eggs an excellent source of this essential nutrient.(4) Choline is found exclusively in the egg's yolk. Other top food sources of choline include liver, wheat germ and cauliflower.

"While choline is an essential nutrient to the human diet, most people haven't even heard of it," says Gerald Weissmann, MD, Editor in Chief of The FASEB Journal and research professor of medicine and director of the Biotechnology Study Center at the New York University School of Medicine. "Given that in the U.S. there is a real need to understand how much choline we require in our diet, we hope that research, education and awareness about choline will increase as a result of this study published in The FASEB Journal."

Eggs and Decreased Risk of Breast Cancer:

Two previously published studies, supported by NIH grants, have shown that women who eat eggs have a lower risk of developing breast cancer:

A study published in 2003 by researchers at Harvard University found that women who reported higher consumption of eggs, vegetable fat and fiber during adolescence had a smaller risk of developing breast cancer as adults. Specifically, eating one egg per day was associated with an 18 percent reduced risk of breast cancer.(5)

A study of Chinese women published in *Cancer Epidemiology, Biomarkers & Prevention* in 2005 showed that those who consumed the most fruit, vegetables and eggs were significantly less likely to have breast cancer. For those that reported eating at least six eggs per week, the risk of developing breast cancer was 44 percent lower than for those who ate two or less eggs per week.(6)

Other Benefits of Choline:

In addition to playing a role in the normal functioning of all cells, including brain and nerve function, liver metabolism and the transportation of nutrients throughout the body, choline has been shown to:

Prevent Birth Defects: According to population-based research, infants from mothers whose diets were deficient in choline were four times more likely to have neural tube defects such as spina bifida. This increased risk was observed even when other nutrients that help prevent birth defects, such as folic acid, were in adequate supply.(7)

Improve Memory: Research suggests that choline is essential for proper fetal and infant brain development. It appears that choline affects the areas of the brain responsible for memory function and life-long learning ability.(8)

Reduce Heart Disease Risk: Choline, like folate, is involved in breaking down homocysteine, an amino acid in the blood that may be associated with an increased risk of heart disease. In fact, research shows that choline deficiency results in increased homocysteine levels.(9) This may help to explain why 30 years of research have shown that healthy adults can consume eggs without increasing their risk of heart disease.(10)

Public release date: 4-Apr-2008

Inactive kids face 6-fold risk of heart disease by teen years, study finds

CHAPEL HILL – Young children who lead inactive lifestyles are five-to-six times more likely to be at serious risk of heart disease, with that degree of danger emerging as early as their teenage years, according to a new study by researchers at the University of North Carolina at Chapel Hill.

The findings, published Friday (April 4) in the open access journal *Dynamic Medicine*, looked at a group of children twice – first while in grade school, then again seven years later when they were in their teens.

Researchers wanted to know more about the early onset of metabolic syndrome, a

condition more commonly found in adults. Metabolic syndrome is the label given to a clustering of medical disorders that raise the risk of heart disease and diabetes, such as glucose intolerance, hypertension, elevated triglycerides, low HDL (so-called “good”) cholesterol and obesity. Previous studies have found that somewhere from four percent to nine percent of adolescents have the condition.

However, until now, no one had tracked the same group of children over time to see just how fitness and activity levels in their early years played a role in the likelihood of them developing metabolic syndrome by the time they were teenagers, said Robert McMurray, professor of exercise and sports science in the department of exercise and sports science in UNC’s College of Arts and Sciences.

The study looked at data from almost 400 children between the ages of seven and 10 from across North Carolina. Researchers measured factors such as height, body mass, percentage body fat, blood pressure and cholesterol levels. Participants were also surveyed about their physical activity and given an aerobic fitness test.

When the same children were examined again seven years later, 4.6 percent had three or more characteristics of metabolic syndrome.

McMurray said adolescents with the syndrome were six times more likely to have had low aerobic fitness as children and five times more likely to have low levels of physical activity at the time they joined the study.

For example, as children, those who had low levels of physical activity got no vigorous exercise (such as playing basketball or soccer) and spent less than 20 minutes a day doing moderate-intensity physical activity (walking briskly, riding a bike at a medium speed). That means that at best, they were getting just one-third of the 60 minutes a day that is currently recommended for children by the Centers for Disease Control and Prevention, said McMurray.

“This shows efforts need to begin early in childhood to increase exercise,” he said. “Children today live a very sedentary life and are prone to obesity. This is the first study to examine the importance of childhood fitness levels on your metabolism as a teenager. Previously we didn’t know if low fitness levels were an influence.

“It’s obvious now that there is a link and this is something which we need to pay attention to by encouraging our kids to keep fit, or suffer the consequences later in life,” said McMurray.

Public release date: 4-Apr-2008

Clinical trial volunteers mostly indifferent -- but not blind to -- researchers' financial conflicts

Unless a researcher has stock ownership in a company whose drug is being tested, telling

potential research volunteers about an investigator's financial interests is unlikely to affect their willingness to volunteer, a new study shows.

But, the results also show that many research volunteers put less trust in clinical trial leaders with financial conflicts.

"Though peoples' willingness to take part in a hypothetical clinical trial did not differ substantially based on the types of financial disclosures, and many of our study respondents were still likely to say that they would participate despite researchers' financial interests, we captured a sense of unease about some financial ties-particularly owning company stock-that did affect peoples' attitudes and trust in clinical research," says Jeremy Sugarman, M.D., M.P.H., M.A., professor at the Johns Hopkins Berman Institute of Bioethics and The Johns Hopkins School of Medicine.

"We need to keep this in mind as we determine how best to disclose acceptable financial interests to fully inform potential study participants."

The study, led by Sugarman and colleagues at Duke University showed that potential research participants were significantly less trustful of the researcher if the study's leader owned stock in the drug's maker.

"Ties between companies and physicians who do research with them are becoming more transparent, but it's been unclear how well this information is understood by the public and to what extent they influence people who consider enrolling in clinical trials," Sugarman says. "Our study offers some of the first clear insights on the impact of disclosures of this information."

For the study, Sugarman and his colleagues at Duke University School of Medicine and Wake Forest Schools of Medicine and Law recruited 3,623 adults with asthma or diabetes from a national database of individuals who are willing to participate in internet-based research. Overall, the recruits, almost all white, were well educated and had middle to high income levels. They were located in all regions of the United States.

Most of the respondents indicated that the financial disclosure was less important to their decision about participating than such factors as potential risks and benefits, and the purpose of the research.

In the computerized experiment, the investigators electronically sent each patient a description of a hypothetical clinical trial to test a drug that might treat their particular condition. The recipients were grouped by the severity of their illnesses.

Tagged onto the description of the clinical trial was one of five different financial disclosures: a generic one suggesting that the study leader might benefit financially from the study; one saying that the study leader would be reimbursed only for expenses pertaining to the trial; one indicating that the study leader receives extra money from the drug company for activities such as consulting or speaking; one indicating that the study

leader holds stock in the drug company; or one indicating that the researcher's institution holds stock in the drug company.

The "generic" disclosure, for example, said that the researcher's institution had reviewed "Dr. Smith's" financial conflict and concluded that it would not affect the safety or outcome of the clinical trial, but offered to provide more information if the participant wanted it.

The "equity" disclosure said that the amount of financial investment of "Dr. Smith" might be affected by the outcome of the clinical trial and that in effect, "Dr. Smith could gain or lose money depending on what the trial concluded."

The patients were asked to read the material then respond to a computer-based survey indicating their willingness to participate in the trial, the importance of the financial disclosure in making their decision, their trust in researchers, their level of surprise about the financial disclosure, and the perceived quality of the trial's research.

More than two-thirds of the respondents were "not at all surprised" that the researcher or institution in which he or she worked might benefit financially from the hypothetical clinical trial, with respondents "least surprised to learn that researchers got a per capita payment and most surprised to learn that the researcher owned stock.

Fifty-nine percent of the study respondents felt that the possibility of financial benefit did nothing to change their trust in the researcher or the institution, although 36 percent said their trust was diminished as a result of the disclosure.

Change in trust levels was not related to the disease the person had or the severity of the disease.

"A disclosure that the researcher received per capita payments was least likely to change respondents' level of trust...whereas a disclosure that the researcher held an equity interest was most likely to reduce trust," the study reported.

Sugarman and his colleagues say their results, published online April 2 in the Journal of General Internal Medicine, suggest that researchers and policymakers involved in clinical trials should probably pay close attention to the impact of financial disclosures on potential study subjects.

Ralph's Note - What we are witnessing is the end of scientific purity, and the beginning of a new era of medicine. There is really only one reason why this study would be done.

Public release date: 6-Apr-2008

'Healing clays' show promise for fighting deadly MRSA superbug

infections, other diseases

NEW ORLEANS, April 6, 2008 — Mud may be coming to a medicine cabinet or pharmacy near you. Scientists in Arizona report that minerals from clay could form the basis of a new generation of inexpensive, highly-effective antimicrobials for fighting MRSA infections that are moving out of health care settings and into the community. These “superbugs” are increasingly resistant to multiple antibiotics and cause thousands of deaths each year.

Unlike conventional antibiotics that are often administered by injection or pills, the so-called “healing clays” could be used as rub-on creams or ointments to keep MRSA infections from spreading, the researchers say. The clays also show promise against a wide range of other harmful bacteria, including those that cause skin infections and food poisoning, the scientists add. Their study, one of the first to explore the antimicrobial activity of natural clays in detail, was presented today at the 235th national meeting of the American Chemical Society.

Clays have been used for thousands of years as a remedy for infected wounds, indigestion, and other health problems, either by applying clay to the skin or eating it. Today, clays are commonly used at health spas in the form of mud baths and facials. Armed with new investigative tools, researchers are beginning to explore their health claims scientifically.

“Clays are little chemical drug-stores in a packet,” said study co-leader Lynda Williams, Ph.D., a geochemist at Arizona State University in Tempe. “They contain literally hundreds of elements. Some of these compounds are beneficial but others aren’t. Our goal is to find out what nature is doing and see if we can find a better way to kill harmful bacteria.”

In the new study, funded by the National Institutes of Health, Williams and her colleagues collected more than 20 different clay samples from around the world to investigate their antibacterial activities. In collaboration with study co-leader Shelley Haydel, Ph.D., a microbiologist with Arizona State, the researchers tested each of the clays against several different bacteria known to cause human diseases. These bacteria include MRSA (methicillin-resistant *Staphylococcus aureus*), *Mycobacterium ulcerans* (a microbe related to the tuberculosis bacterium that causes a flesh-eating disease known as Buruli ulcer), as well as *E. coli* and *Salmonella* (which cause food poisoning). The researchers identified at least three clays that killed or significantly reduced the growth of these bacteria.

The researchers are working to identify the specific compounds in the clays that may be responsible for its antibacterial activity. Using electron and ion microscopy, the researchers are also exploring how these antibacterial clays interact with the cell membranes of the bacteria in order to find out how they kill.

Williams and Haydel are continuing to test new clay samples from around the world to determine their germ-fighting potential. They hope that the more promising clays will be

developed into a skin ointment or pill to fight a variety of bacterial infections or possibly as an agricultural wash to prevent food poisoning. Several companies have expressed interest in forming partnerships to develop the clays as antimicrobial agents, the scientists say.

But ordinary mud can contain dangerous bacteria as well as toxic minerals like arsenic and mercury, the researchers point out. **Until healing clays are developed that are scientifically proven, which could take several years, handwashing and other proper hygiene techniques may be your best bet for keeping MRSA and other harmful bacteria at bay, they say.**

Ralph's Note - Didn't they just say that it was used successfully for thousands of years. So what things different things now?

Public release date: 6-Apr-2008

Ibuprofen or acetaminophen in long-term resistance training increases muscle mass/strength

Taking daily recommended dosages of ibuprofen and acetaminophen caused a substantially greater increase over placebo in the amount of quadriceps muscle mass and muscle strength gained during three months of regular weight lifting, in a study by physiologists at the Human Performance Laboratory, Ball State University.

Dr. Chad Carroll, a postdoctoral fellow working with Dr. Todd Trappe, reported study results at Experimental Biology 2008 in San Diego on April 6. His presentation was part of the scientific program of the American Physiological Society (APS).

Thirty-six men and women, between 60 and 78 years of age (average age 65), were randomly assigned to daily dosages of either ibuprofen (such as that in Advil), acetaminophen (such as that in Tylenol), or a placebo. The dosages were identical to those recommended by the manufacturers and were selected to most closely mimic what chronic users of these medicines were likely to be taking. Neither the volunteers nor the scientists knew who was receiving which treatment until the end of the study.

All subjects participated in three months of weight training, 15-20 minute sessions conducted in the Human Performance Laboratory three times per week. The researchers knew from their own and other studies that training at this intensity and for this time period would significantly increase muscle mass and strength. They expected the placebo group to show such increases, as its members did, but they were surprised to find that the groups using either ibuprofen or acetaminophen did even better. An earlier study from the laboratory, measuring muscle metabolism (or more precisely, muscle protein synthesis, the mechanism through which new protein is added to muscle), had looked at changes over a 24 hour period. This "acute" study found that both ibuprofen and acetaminophen had a negative impact, by blocking a specific enzyme cyclooxygenase, commonly referred to as COX.

But that study looked at only one day. Over three months, says Dr. Trappe, the chronic consumption of ibuprofen or acetaminophen during resistance training appears to have induced intramuscular changes that enhance the metabolic response to resistance exercise, allowing the body to add substantially more new protein to muscle.

The amount of change was measured in quadricep muscles using Magnetic Resonance Imaging (MRI), the gold standard for determining muscle mass. The researchers now are conducting assays of muscle biopsies taken before and after the three-month period of resistance training, in order to understand the metabolic mechanism of the positive effects of ibuprofen and acetaminophen.

One of the foci of Ball State's Human Performance Laboratory is the adaptation of the elderly to exercise. Another is the loss of muscle mass that takes place when astronauts are exposed to long-term weightlessness. This work has implications for both groups, says Dr. Trappe.

Public release date: 6-Apr-2008

Tart cherries may reduce factors associated with heart disease and diabetes

Inflammation, body fat, weight gain and blood cholesterol all lower in rats fed cherries on top of high-fat, Western style diet

ANN ARBOR, Mich. — Tart cherries – frequently sold dried, frozen or in juice – may have more than just good taste and bright red color going for them, according to new animal research from the University of Michigan Cardiovascular Center.

Rats that received whole tart cherry powder mixed into a high-fat diet didn't gain as much weight or build up as much body fat as rats that didn't receive cherries. And their blood showed much lower levels of molecules that indicate the kind of inflammation that has been linked to heart disease and diabetes. In addition, they had significantly lower blood levels of cholesterol and triglycerides than the other rats.

The results, which were seen in both lean and obese rats that were bred to have a predisposition to obesity and insulin resistance, were presented Sunday at the Experimental Biology 2008 meeting in San Diego, CA by a team from the U-M Cardioprotection Research Laboratory.

In addition, the obese rats that received cherry powder were less likely to build up fat in their bellies – another factor linked to cardiovascular disease. All the measures on which the two groups of animals differed are linked to cardiovascular disease and Type 2 diabetes.

The new findings build on results that were reported last year at the same meeting by the U-M team. Those data came from experiments involving lean rats that were prone to high blood pressure, high cholesterol and impaired glucose tolerance, but that received a low-fat diet with or without cherries. In that case, cherry-fed rats had lower total cholesterol, lower blood sugar, less fat storage in the liver and lower oxidative stress. However, it was unknown if these benefits would be observed in obesity-prone animals, or in animals fed a higher fat, western-style diet containing elevated saturated fat and cholesterol.

While it's still far too early to know whether tart cherries will have the same effect in humans, U-M researchers are preparing to launch a pilot-phase clinical trial later this spring. They note that if a human wanted to eat as many tart cherries as the rats in the new study did, they would have to consume 1.5 cups every day.

“These new findings are very encouraging, especially in light of what is becoming known about the interplay between inflammation, blood lipids, obesity and body composition in cardiovascular disease and diabetes,” says Steven Bolling, M.D., a U-M cardiac surgeon and the laboratory's director. “The fact that these factors decreased despite the rats' predisposition to obesity, and despite their high-fat ‘American-style’ diet, is especially interesting.”

The results were presented by E. Mitchell Seymour, M.S., a U-M research associate and the senior scientist on the project. “It was recently shown in humans that regular intake of darkly pigmented fruits like cherries is associated with reduced mortality from cardiovascular disease and coronary heart disease,” says Seymour. “The heart-health benefits of these colorful fruits were sustained even when corrected for age and other health conditions. We're now invested in exploring the specific mechanisms of these benefits.”

The experiments are funded by an unrestricted grant from the Cherry Marketing Institute, a trade association for the cherry industry. CMI has no influence on the design, conduct or analysis of any U-M research it funds.

The correlation between cherry intake and significant changes in cardiovascular risk factors suggests — but does not directly demonstrate — a positive effect from the high concentrations of antioxidant compounds called anthocyanins that are found in tart cherries. The anthocyanins are responsible for the color of these and of other darkly pigmented fruits.

The potential for protective effects from antioxidant-rich foods and food extracts is a promising area of research, says Bolling, who is the Gayle Halperin Kahn Professor of Integrative Medicine at U-M.

The team performed the study using 48 obesity-prone rats, half of which were obese, and a diet in which 45 percent of calories came from fat and 35 percent came from carbohydrates. All the rats were six weeks old when study began. For the next 90 days

they were fed either a cherry-enriched diet in which cherries made up 1 percent by weight, or a diet that contained an equivalent number of carbohydrates and calories.

At the end of the study, the rats had blood tests for glucose, cholesterol and triglyceride levels, received DEXA scans to measure their body fat and to see where the fat had collected, and had tests for two plasma inflammation markers: TNF-alpha and interleukin-6.

These two molecules are related to the level of vascular inflammation, or immune-system reaction to blood-vessel walls, that is often seen in people and animals with cardiovascular disease. While inflammation is a normal process the body uses to fight off infection or injury, according to recent science, a chronic state of inflammation may increase the risk for a number of diseases.

The cherries were Montmorency tart cherries grown in Michigan, which is the nation's largest producer of tart cherries. They are different from the sweet Bing cherries that are often eaten fresh. Tart cherries have higher concentrations of antioxidant anthocyanins than sweet cherries.

By the end of the study, the rats that received the cherries had lower body weight, fat mass, total cholesterol, triglyceride, TNF-alpha and IL-6 than the rats that did not receive cherries. In all, TNF-alpha was reduced by 50 percent in the lean rats and 40 percent in the obese rats and IL-6 was lowered by 31 percent in the obese rats and 38 percent in the lean rats.

The obese rats that received cherries also had lower-weight retroperitoneal fat, a type of belly fat that has been associated with especially high cardiovascular risk and inflammation in humans.

Public release date: 7-Apr-2008

Caffeine prevents multiple sclerosis-like disease in mice

Mice given caffeine equivalent to a human drinking six to eight cups of coffee a day were protected from developing experimental autoimmune encephalomyelitis (EAE), the animal model for the human disease Multiple Sclerosis (MS), according to researchers at Cornell University.

Caffeine is a well-known adenosine receptor blocker, and the researchers believe results show the importance of this molecule in permitting the infiltration of immune cells into the central nervous system of patients with MS.

Dr. Jeffrey H. Mills, a postdoctoral associate in the laboratory of Dr. Margaret S. Bynoe, presented the findings at Experimental Biology 2008 on April 7. The presentation was part of the scientific programs of the American Society of Immunologists.

Multiple sclerosis is an autoimmune disease of the central nervous system (CNS) that occurs when the body's immune system attacks and damages nerves in the brain and spinal cord. The infiltration of immune cells into brain and other CNS tissue is rarely seen in healthy individuals without MS. What allows the immune cells to infiltrate the CNS tissue of patients with MS is unknown. In earlier work, the Bynoe laboratory became convinced that the molecule adenosine is responsible for this infiltration.

Adenosine is widely present in the body and plays an important role in many biochemical processes, such as energy transfer and the promotion of sleep and suppression of arousal. The researchers' first studies found that mice that lacked CD73, the enzyme necessary for synthesizing extracellular adenosine, were protected from developing the mouse form of MS (experimental autoimmune encephalomyelitis or EAE).

Additional studies involving immune cells from mice that lack CD73 further convinced them that normal CD73's ability to synthesize extracellular adenosine was what was important for development and progression of the MS-like disease. That helped explain the presence of adenosine near the cells, but how did the compound get into the CNS cells? Since adenosine must bind to its receptor in order to affect a cell, the researchers reasoned that perhaps adenosine receptor activation was what allowed for entry of immune cells into the brain and spinal cord. To test that idea in the study presented at Experimental Biology 2008, they turned to caffeine.

Caffeine's stimulatory effects on the CNS are in large part due to its ability to bind to the same receptors as adenosine, thus blocking adenosine's ability to affect CNS cells. Mice that consumed caffeine in their drinking water were protected from development of EAE, the MS model. Dr. Bynoe concludes that these experiments show that CD73 and adenosine receptor signaling are required for the efficient entry of immune cells into the CNS during the initiation and progression of EAE in mice and, quite possibly, during the development of MS in humans.

Dr. Bynoe adds, "These results might mark the first in a series of discoveries from our lab

that could spawn the impetus for the development of adenosine-based therapies for the treatment of MS.”

Public release date: 7-Apr-2008

Ingredient Found In Green Tea Significantly Inhibits Breast Cancer Growth In Female Mice

SAN DIEGO, CA — Green tea is high in the antioxidant EGCG (epigallocatechin-3-gallate) which helps prevent the body’s cells from becoming damaged and prematurely aged. Studies have suggested that the combination of green tea and EGCG may also be beneficial by providing protection against certain types of cancers, including breast cancer. A new study conducted by researchers at the University of Mississippi researchers now finds that consuming EGCG significantly inhibits breast tumor growth in female mice. These results bring us one step closer to better understanding the disease and potentially new and naturally occurring therapies.

The study was conducted by Jian-Wei Gu, Emily Young, Jordan Covington, James Wes Johnson, and Wei Tan, all of the Department of Physiology & Biophysics, University of Mississippi Medical Center, Jackson, MS. Dr. Gu will present his team’s findings, entitled, Oral Administration of EGCG, an Antioxidant Found in Green Tea, Inhibits Tumor Angiogenesis and Growth of Breast Cancer in Female Mice, at the 121st Annual Meeting of the American Physiological Society (APS; www.the-APS.org/press), part of the Experimental Biology 2008 scientific conference.

The Study

Epidemiological studies suggest that green tea and its major constituent, EGCG, can provide some protection against cancer. Because these studies were very limited, the anti-cancer mechanism of green tea and EGCG was not clear. As a result, the researchers examined whether drinking EGCG (just the antioxidant infused in water) inhibited the following: expression of VEGF (vascular endothelial growth factor, which is found in a variety of breast cancer types); tumor angiogenesis (thought to help tumors expand by supplying them with nutrients); and the growth of breast cancer in female mice.

Seven week old female mice were given EGCG (25 mg/50 ml) in drinking water for five weeks (approximately 50-100 mg/kg/day.) The control mice received regular drinking water. In the second week of the study mouse breast cancer cells were injected in the left fourth mammary glands of the mice. Tumor size was monitored by measuring the tumor cross section area (TCSA). Tumors were eventually isolated and measured for tumor weight, intratumoral microvessel (IM) density (using staining), and VEGF protein levels (using ELISA).

At the end of the five week period the researchers **found that oral consumption of**

EGCG caused significant decreases in TCSA (66%), tumor weight (68%), IM density 155 ± 6 vs. 111 ± 20 IM#mm²) and VEGF protein levels (59.0 ± 3.7 vs. 45.7 ± 1.4 pg/mg) in the breast tumors vs. the control mice, respectively (N=8; P<0.01). Further, VEGF plasma levels were lower in EGCG mice than in control mice (40.8 ± 3.5 vs. 26.5 ± 3.8 pg/ml P< 0.01).

Dr. Gu, the senior researcher for the study, hypothesized that the reason for the link between EGCG and the reductions in the cancer data was because EGCG directly targets both tumor blood vessels and tumor cells of breast cancer for suppressing the new blood vessels formation in breast tumor, the proliferation and migration of breast cancer cells.

Gu concluded by saying, "In this study we have demonstrated that the frequent ingestion of EGCG significantly inhibits breast tumor growth, VEGF expression and tumor angiogenesis in mice. We believe our findings will help lead to new therapies for the prevention and treatment of breast cancer in women."

Public release date: 8-Apr-2008

Adults who eat apples, drink apple juice have lower risk for metabolic syndrome

Apple product consumers likely to have lower blood pressure, trimmer waistlines, and more nutrient dense diets

SAN DIEGO - Not eating your apple a day" Perhaps you should be. Adults who eat apples, apple juice and applesauce have a significantly reduced risk of metabolic syndrome, a cluster of health problems that are linked to numerous chronic diseases such as diabetes and cardiovascular disease.

The study results, presented at the Experimental Biology 2008 meeting this week, were derived from an analysis of adult food consumption data collected in the 1999-2004 National Health and Nutrition Examination Survey (NHANES), the government's largest food consumption and health database.

Dr. Victor Fulgoni analyzed the data, specifically looking at the association between consumption of apples and apple products, nutrient intake and various physiological parameters related to metabolic syndrome. When compared to non-consumers, adult apple product consumers had a 27% decreased likelihood of being diagnosed with metabolic syndrome.

Fulgoni notes, "We found that adults who eat apples and apple products have smaller waistlines that indicate less abdominal fat, lower blood pressure and a reduced risk for developing what is known as the metabolic syndrome."

In addition to having a 30% decreased likelihood for elevated diastolic blood pressure and a 36% decreased likelihood for elevated systolic blood pressure, apple product

consumers also had a 21% reduced risk of increased waist circumference – all predictors of cardiovascular disease and an increased likelihood of metabolic syndrome. Additionally, adult apple product consumers had significantly reduced C-reactive protein levels, another measurable marker related to cardiovascular risk.

Furthermore, apple product consumers' diets were healthier than non-consumers – they had an overall greater intake of fruit and key nutrients, including dietary fiber, vitamins A and C, calcium and potassium. These consumers also ate less total fat, saturated fat, discretionary fat and added sugars.

Public release date: 9-Apr-2008

Omega-3 intake during last months of pregnancy boosts an infant's cognitive and motor development

Quebec City, April 9, 2008—A study supervised by Université Laval researchers Gina Muckle and Éric Dewailly reveals that omega-3 intake during the last months of pregnancy boosts an infant's sensory, cognitive, and motor development. The details of this finding are published in a recent edition of the Journal of Pediatrics.

To come to this conclusion, researchers first measured docosahexaenoic acid (DHA) concentration—a type of omega-3 fatty acid involved in the development of neurons and retinas—in the umbilical cord blood of 109 infants. “DHA concentration in the umbilical cord is a good indicator of intra-uterine exposure to omega-3s during the last trimester of pregnancy, a crucial period for the development of retinal photoreceptors and neurons,” explains Dr. Dewailly.

Tests conducted on these infants at 6 and 11 months revealed that their visual acuity as well as their cognitive and motor development were closely linked to DHA concentration in the umbilical cord blood at the time of their birth. However, there was very little relation between test results and DHA concentration in a mother's milk among infants who were breast-fed. “These results highlight the crucial importance of prenatal exposure to omega-3s in a child's development,” points out Dr. Muckle.

Researchers observed that DHA concentration in the umbilical cord blood was in direct relation with the concentration found in a mother's blood, a reminder of the importance of a mother's diet in providing omega-3 fatty acids for the fetus. They also noted that DHA concentration was higher in the fetus's blood than in the mother's. “While developing its nervous system, a fetus needs great quantities of DHA. It can even transform other types of omega-3s into DHA in order to develop its brain,” explains Dr. Dewailly.

For the members of the research team, there is no doubt that all pregnant women should be encouraged to get sufficient amounts of omega-3s. “A diet rich in omega-3s during pregnancy can't be expected to solve everything, but our results show that such a diet has

positive effects on a child's sensory, cognitive, and motor development. Benefits from eating fish with low contaminant levels and high omega-3 contents, such as trout, salmon, and sardines, far outweigh potential risks even during pregnancy," conclude the researchers.

Public release date: 10-Apr-2008

Getting forgetful? Then blueberries may hold the key

If you are getting forgetful as you get older, then a research team from the University of Reading and the Peninsula Medical School in the Southwest of England may have good news for you

If you are getting forgetful as you get older, then a research team from the University of Reading and the Peninsula Medical School in the South West of England may have good news for you.

They have found that phytochemical-rich foods, such as blueberries, are effective at reversing age-related deficits in memory, according to a study soon to be published in the science journal *Free Radical Biology and Medicine*. The researchers working at the Schools of Food Biosciences and Psychology in Reading and the Institute of Biomedical and Clinical Sciences at the Peninsula Medical School in Exeter supplemented a regular diet with blueberries over a 12-week period, and found that improvements in spatial working memory tasks emerged within three weeks and continued throughout the period of the study.

Blueberries are a major source of flavonoids, in particular anthocyanins and flavanols. Although the precise mechanisms by which these plant-derived molecules affect the brain are unknown, they have been shown to cross the blood brain barrier after dietary intake. It is believed that they exert their effects on learning and memory by enhancing existing neuronal (brain cell) connections, improving cellular communications and stimulating neuronal regeneration.

The enhancement of both short-term and long-term memory is controlled at the molecular level in neurons. The research team was able to show that the ability of flavonoids to induce memory improvements are mediated by the activation of signalling proteins via a specific pathway in the hippocampus, the part of the brain that controls learning and memory.

This innovative research was conducted by a multidisciplinary research team led by Dr. Jeremy Spencer, a lecturer in Molecular Nutrition at the University of Reading and included Dr. Claire Williams, a Psychologist also from Reading and Dr. Matt Whiteman, a Principal Investigator at the Institute of Biomedical and Clinical Science, Peninsula Medical School. Dr Spencer commented: "Impaired or failing memory as we get older is one of life's major inconveniences. Scientists have known of the potential health benefits of diets rich in fresh fruits for a long time. Our previous work had suggested that

flavonoid compounds had some kind of effect on memory, but until now we had not known the potential mechanisms to account for this”.

Dr. Whiteman added "This study not only adds science to the claim that eating blueberries are good for you, it also provides support to a diet-based approach that could potentially be used to increase memory capacity and performance in the future. Indeed, Dr. Spencer’s research team plan on extending these findings further by investigating the effects of diets rich in flavonoids on individuals suffering from cognitive impairment and Alzheimer’s disease.”

Public release date: 11-Apr-2008

Macadamia nuts can be included in heart healthy diet

Macadamia nuts included in a heart healthy diet reduced low-density cholesterol (bad cholesterol) and should be included among nuts with qualified health claims, according to researchers.

"We looked at macadamia nuts because they are not currently included in the health claim for tree nuts, while other tree nuts are currently recommended as part of a heart healthy diet," says Dr. Amy E. Griel, a recent Penn State Ph.D. recipient in nutrition and now senior nutrition scientist at The Hershey Company. "Macadamia nuts have higher levels of monosaturated fats, like those found in olive oil compared with other tree nuts."

Along with Brazil nuts and cashews, macadamia nuts are not included in the U.S. Food and Drug Administration's list of nuts with qualified health claims because the cut-off point is 4 grams of saturated fat per 50 grams of nuts. Macadamia nuts have 6 grams of saturated fat per 50 grams, cashew nuts have 4.6 grams and Brazil nuts have 7.6 grams of saturated fat per 50 grams of nuts.

"Epidemiological studies showed that people who are frequent nut consumers have decreased risk of heart disease," says Penny Kris-Etherton, co-author and distinguished professor of nutritional sciences.

The researchers used a controlled feeding study to compare a heart-healthy diet with 1.5 ounces – a small handful – of macadamia nuts to a standard American diet. The participants had slightly elevated cholesterol levels, normal blood pressure and were not taking lipid-lowering drugs. Researchers randomly assigned participants to either the macadamia nut diet or the standard American diet and provided all meals for the participants for five weeks. The participants then switched diets and continued eating only food provided by the researchers for another five weeks.

The Healthy Heart diet with macadamia nuts did reduce total cholesterol, low-density lipoprotein cholesterol and triglyceride levels compared with the standard American diet. The researchers reported in the current issue of the Journal of Nutrition, that the macadamia nuts reduced total cholesterol by 9.4 percent and low-density lipoprotein by

8.9 percent.

Individual calorie levels were used for each participant so that they did not gain or lose weight during the study. Both diets were matched for total fat, containing 33 percent calories from total fat. The Heart Healthy diet with macadamia nuts had 7 percent saturated fat, 18 percent monosaturated fat and 5 percent polyunsaturated fat. The standard American diet had 13 percent saturated fat, 11 percent monosaturated fat and 5 percent saturated fat.

"We found that the reduction in LDL or bad cholesterol we observed was greater than would be predicted by just the healthy fats in the nuts alone," says Griel. "This indicates that there is something else in the nuts that helps lower cholesterol."

The macadamia nut diet included macadamia nuts as a snack, mixed into meals, as a salad topping and in cookies and muffins. The total fat was the same in both diets. Macadamia nuts were substituted for other sources of fat and protein in the diet. Switching skim milk for 2 percent milk and adding some macadamia nuts kept fat levels even.

"I think the bottom line is that Macadamia nuts probably should be included in the list of nuts to have a qualified health claim," says Kris-Etherton.

Public release date: 13-Apr-2008

Vitamin D and calcium influence cell death in the colon, researchers find

Researchers at Emory University are learning how vitamins and minerals in the diet can stimulate or prevent the appearance of colon cancer.

Emory investigators will present their findings on biological markers that could influence colon cancer risk in three abstracts at the American Association for Cancer Research meeting in San Diego.

In a clinical study of 92 patients, supplementing diet with calcium and vitamin D appeared to increase the levels of a protein called Bax that controls programmed cell death in the colon. More Bax might be pushing pre-cancerous cells into programmed cell death, says Emory researcher Veronika Fedirko, who will present her team's results (abstract 464).

Previous studies have shown that calcium and vitamin D tend to reduce colon cancer risk.

"We were pleased that the effects of calcium and vitamin D were visible enough in this small study to be significant and reportable," Fedirko says. "We will have to fully

evaluate each marker's strength as we accumulate more data."

The studies of colorectal biopsy samples are part of a larger effort to identify a portfolio of measurements that together can gauge someone's risk of getting colon cancer, says Roberd Bostick, MD, MPH, professor of epidemiology at Emory's Rollins School of Public Health.

"We want to have the equivalent of measuring cholesterol or high blood pressure, but for colon cancer instead of heart disease," Bostick says. "These measurements will describe the climate of risk in the colon rather than spotting individual tumors or cells that may become tumors."

More about Bostick's plans for developing non-invasive blood or urine tests for colon cancer risk is available in an Emory Health Sciences Magazine article:
http://whsc.emory.edu/_pubs/hsc/winter08/pdf/hold_out_your_finger.pdf

Another abstract from Bostick and his colleagues (565) demonstrates in a 200-patient case-control study that high levels of calcium and vitamin D together are associated with increased levels of E-cadherin, which moderates colon cells' movement and proliferation.

A third abstract on the same case-control study (5504) shows that high levels of iron in the diet are linked to low levels of APC, a protein whose absence in colon cancer cells leads to their runaway growth.

Bostick and his colleagues are participating in a ten-year multi-center study of the effects of increased vitamin D and calcium and biomarker-guided treatment of colon cancer recurrence. The study involves almost 2,500 people nationwide who have regular colonoscopies.

Public release date: 14-Apr-2008

Diuretics associated with bone loss in older men

Older men who take loop diuretics, commonly prescribed drugs for heart failure and hypertension, appear to have increased rates of hip bone loss than men who are not taking this medication, according to a report in the April 14 issue of Archives of Internal Medicine, one of the JAMA/Archives journals.

“Loop diuretics are one of the most commonly prescribed medications among older adults,” the authors write as background information in the article. These medications increase the amount of calcium excreted in urine, potentially damaging bones over the long term. In observational studies, use of loop diuretics has been associated with an increased risk of hip and other fractures. “However, there is uncertainty as to whether this increased fracture risk is attributable to negative effects on bone mineral density, fall-related mechanisms (e.g., dizziness and orthostasis [low blood pressure when standing up]), or associated comorbidities [co-occurring illnesses].”

Lionel S. Lim, M.D., M.P.H., of Griffin Hospital, Derby, Conn., and colleagues studied 3,269 men age 65 and older (average age 72.7). At an initial examination between 2000 and 2002 and at a follow-up visit an average of 4.6 years later, the men answered questions about medication use and brought in containers for all medication taken during the past 30 days. Bone mineral density of the total hip and two subregions was measured.

A total of 84 men continuously used loop diuretics between the two time periods, 181 used them intermittently and 3,004 did not use them. After adjusting for other related factors, the average annual rate of decline in total hip bone mineral density was -0.33 percent in non-users, -0.58 percent in intermittent users and -0.78 percent among continuous users.

“Compared with rates of hip bone loss among non-users of diuretics, adjusted rates of loss were about two-fold greater among intermittent loop diuretic users and about 2.5-fold greater among continuous loop diuretic users,” the authors write. Findings were similar at the subregions of the hip.

“We conclude that loop diuretic use in older men is associated with increased rates of hip bone loss,” the authors write. Future research should address the underlying mechanisms, they note. “Our findings suggest that health care providers should take into account loop diuretic use when evaluating older men for risk factors for bone loss and fracture risk.”

Public release date: 14-Apr-2008

Antidepressants account for only 10 percent of fall in suicide rates among older people

Increased use of antidepressants and decreasing suicide rates: A population-based study using Danish register data

The use of antidepressants is likely to account for only 10 per cent of the fall in suicide

rates among middle aged and older people, suggests a large study in the Journal of Epidemiology and Community Health.

Globally, more than 800, 000 people commit suicide every year.

Rates have been falling in many countries, a factor that has been associated with better recognition of depression and the increasing use of antidepressants, particularly the newer selective serotonin reuptake inhibitors (SSRIs).

But research involving more than 2 million Danes aged 50 and above and living in Denmark between 1996 and 2000, throws this into question.

The researchers assessed changes in the numbers of middle aged and older people committing suicide during this period and the types of antidepressant drugs they had been prescribed.

Only one in five of those committing suicide was actually taking antidepressants at the time of death.

Suicide rates in older men fell by almost 10 per 100, 000 of the population during this timeframe, **but among recipients of antidepressants, the fall was less than one.**

For older women, only 0.4 of the 3.3 fall per 100, 000 of the population was accounted for by those being treated with antidepressants.

Overall, treatment type made little difference, although rates among men taking SSRIs were slightly higher than among those taking tricyclics.

Suicide rates were five to six times higher among those taking antidepressants than those who were not.

Previous Scandinavian and US research has suggested that a fivefold increase in the use of antidepressants could lead to a 25% decrease in suicide rates, with SSRIs having saved as many as upwards of 33, 000 lives, say the authors.

Sales of antidepressants in Denmark have soared from 8.4 per 1000 of the population in 1990 to 52.2 in 2000.

And suicide rates among older people have more than halved from 52.2 in 1980 to 22.1 per 100, 000 of the population in 2000.

The authors conclude that current antidepressant treatment accounts for only a fraction of the falls in suicide rates among older people.

But they nevertheless suggest that more should be done to pick up and treat depression among older people.

Ralph's Note- So which is it?

Public release date: 14-Apr-2008

France may make it illegal to promote extreme thinness

The French parliament's lower house adopted a groundbreaking bill Tuesday that would make it illegal for anyone — including fashion magazines, advertisers and Web sites — to publicly incite extreme thinness.

The National Assembly approved the bill in a series of votes Tuesday, after the legislation won unanimous support from the ruling conservative UMP party. It goes to the Senate in the coming weeks.

Fashion industry experts said that, if passed, the law would be the strongest of its kind anywhere. Leaders in French couture are opposed to the idea of legal boundaries on beauty standards.

The bill was the latest and strongest of measures proposed after the 2006 anorexia-linked death of a Brazilian model prompted efforts throughout the international fashion industry to address the repercussions of using ultra-thin models.

Conservative lawmaker Valery Boyer, author of the law, argued that encouraging anorexia or severe weight loss should be punishable in court.

Doctors and psychologists treating patients with anorexia nervosa — a disorder characterized by an abnormal fear of becoming overweight — welcomed the government's efforts to fight self-inflicted starvation, but warned that its link with media images remains hazy.

French lawmakers and fashion industry members signed a nonbinding charter last week on promoting healthier body images. Spain in 2007 banned ultra-thin models from catwalks.

But Boyer said such measures did not go far enough.

Her bill has mainly brought focus to pro-anorexic Web sites that give advice on how to eat an apple a day — and nothing else.

But Boyer insisted in her speech to lawmakers Tuesday that the legislation was much broader and could, in theory, be used against many facets of the fashion industry.

It would give judges the power to imprison and fine offenders up to \$47,000 if found guilty of "**inciting others to deprive themselves of food**" to an "excessive" degree, Boyer said in a telephone interview before the parliamentary session.

Judges could also sanction those responsible for a magazine photo of a model whose "excessive thinness ... altered her health," she said.

Boyer said she was focusing on women's health, though the bill applies to models of both sexes. The French Health Ministry says most of the 30,000 to 40,000 people with anorexia in France are women.

Didier Grumbach, president of the influential French Federation of Couture, said he was not aware how broad the proposed legislation was, and made no secret of his strong disapproval of such a sweeping measure.

"Never will we accept in our profession that a judge decides if a young girl is skinny or not skinny," he said. "That doesn't exist in the world, and it will certainly not exist in France."

Marleen S. Williams, a psychology professor at Brigham Young University in Utah who researches the media's effect on anorexic women, said it was nearly impossible to prove that the media causes eating disorders.

Williams said studies show fewer eating disorders in "**cultures that value full-bodied women.**" Yet with the new French legal initiative, she fears, "you're putting your finger in one hole in the dike, but there are other holes, and it's much more complex than that."

Ralph's Note - So the French parliament must assume that the population lacks the intelligence to determine what is healthy, or not. The flip side to this, will then make it illegal to have photo's of extremely obese people. In addition to accusing pastry company's for encouraging criminal obesity. Social engineering should not be the premise of any truly Democratic Government. After all, who decides what is too thin and what is not?