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Long-term use of vitamin E may decrease COPD risk

ATS 2010, NEW ORLEANS— Long-term, regular use of vitamin E in women 45 years of age and older may help decrease the risk of chronic obstructive pulmonary disease (COPD) by about 10 percent in both smokers and non-smokers, according to a study conducted by researchers at Cornell University and Brigham and Women's Hospital.

"As lung disease develops, damage occurs to sensitive tissues through several proposed processes, including inflammation and damage from free radicals," said Anne Hermetet Agler, doctoral candidate with Cornell University's Division of Nutritional Sciences. "Vitamin E may protect the lung against such damage."

The results of the study will be presented at the ATS 2010 International Conference in New Orleans.

"The findings from our study suggest that increasing vitamin E prevents COPD," said Ms. Agler. "Previous research found that higher intake of vitamin E was associated with a lower risk of COPD, but the studies were not designed to answer the question of whether increasing vitamin E intake would prevent COPD. Using a large, randomized controlled trial to answer this question provided stronger evidence than previous studies."

Ms. Agler and colleagues reviewed data compiled by the Women's Health Study, a multi-year, long-term effort ending in 2004 that focused on the effects of aspirin and vitamin E in the prevention of cardiovascular disease and cancer in nearly 40,000 women aged 45 years and older. Study participants were randomized to receive either 600 mg of vitamin E or a placebo every other day during the course of the research.

Although fewer women taking vitamin E developed COPD, Ms. Agler noted the supplements appeared to have no effect on asthma, and women taking vitamin E supplements were diagnosed with asthma at about the same rate as women taking placebo pills. Importantly, Ms. Agler noted the decreased risk of COPD in women who were given vitamin E was the same for smokers as for non-smokers.

Ms. Agler said further research will explore the way vitamin E affects the lung tissue and function, and will assess the effects of vitamin E supplements on lung diseases in men.

"If results of this study are borne out by further research, clinicians may recommend that women take vitamin E supplements to prevent COPD," Ms. Agler noted. "Remember that vitamin E supplements are known to have detrimental effects in some people; for example vitamin E supplementation increased risk of congestive heart failure in cardiovascular disease patients. Broader recommendations would need to balance both benefits and risks. "

Public release date: 17-May-2010

Eating processed meats, but not unprocessed red meats, may raise risk of heart disease and diabetes

Boston, MA – In a new study, researchers from the Harvard School of Public Health (HSPH) have found that eating processed meat, such as bacon, sausage or processed deli meats, was associated with a 42% higher risk of heart disease and a 19% higher risk of type 2 diabetes. In contrast, the researchers did not find any higher risk of heart disease or diabetes among individuals eating unprocessed red meat, such as from beef, pork, or lamb. This work is the first systematic review and meta-analysis of the worldwide evidence for how eating unprocessed red meat and processed meat relates to risk of cardiovascular diseases and diabetes.

"Although most dietary guidelines recommend reducing meat consumption, prior individual studies have shown mixed results for relationships between meat consumption and cardiovascular diseases and diabetes," said Renata Micha, a research fellow in the department of epidemiology at HSPH and lead author of the study. "Most prior studies also did not separately consider the health effects of eating unprocessed red versus processed meats."

The study appears online May 17, 2010, on the website of the journal *Circulation*.

The researchers, led by Renata Micha, a research fellow in the department of epidemiology, and HSPH colleagues Dariush Mozaffarian, assistant professor in the department of epidemiology and Sarah Wallace, junior research fellow in the department of epidemiology, systematically reviewed nearly 1,600 studies. Twenty relevant studies were identified, which included a total of 1,218,380 individuals from 10 countries on four continents (United States, Europe, Australia, and Asia).

The researchers defined unprocessed red meat as any unprocessed meat from beef, lamb or pork, excluding poultry. Processed meat was defined as any meat preserved by smoking, curing or salting, or with the addition of chemical preservatives; examples include bacon, salami, sausages, hot dogs or processed deli or luncheon meats. Vegetable or seafood protein sources were not evaluated in these studies.

The results showed that, on average, each 50 gram (1.8 oz) daily serving of processed meat (about 1-2 slices of deli meats or 1 hot dog) was associated with a 42% higher risk of developing heart disease and a 19% higher risk of developing diabetes. In contrast, eating unprocessed red meat was not associated with risk of developing heart disease or diabetes. Too few studies evaluated the relationship between eating meat and risk of stroke to enable the researchers to draw any conclusions.

"Although cause-and-effect cannot be proven by these types of long-term observational studies, all of these studies adjusted for other risk factors, which may have been different between people who were eating more versus less meats," said Mozaffarian. "Also, the

lifestyle factors associated with eating unprocessed red meats and processed meats were similar, but only processed meats were linked to higher risk."

"When we looked at average nutrients in unprocessed red and processed meats eaten in the United States, we found that they contained similar average amounts of saturated fat and cholesterol. **In contrast, processed meats contained, on average, 4 times more sodium and 50% more nitrate preservatives,**" said Micha. "This suggests that differences in salt and preservatives, rather than fats, might explain the higher risk of heart disease and diabetes seen with processed meats, but not with unprocessed red meats."

Dietary sodium (salt) is known to increase blood pressure, a strong risk factor for heart disease. In animal experiments, nitrate preservatives can promote atherosclerosis and reduce glucose tolerance, effects which could increase risk of heart disease and diabetes.

Given the differences in health risks seen with eating processed meats versus unprocessed red meats, these findings suggest that these types of meats should be studied separately in future research for health effects, including cancer, the authors said. For example, higher intake of total meat and processed meat has been associated with higher risk of colorectal cancer, but unprocessed red meat has not been separately evaluated. They also suggest that more research is needed into which factors (especially salt and other preservatives) in meats are most important for health effects.

Current efforts to update the United States government's Dietary Guidelines for Americans, which are often a reference for other countries around the world, make these findings particularly timely, the researchers say. They recommend that dietary and policy efforts should especially focus on reducing intake of processed meat.

"To lower risk of heart attacks and diabetes, people should consider which types of meats they are eating. Processed meats such as bacon, salami, sausages, hot dogs and processed deli meats may be the most important to avoid," said Micha. "Based on our findings, eating one serving per week or less would be associated with relatively small risk."

Public release date: 17-May-2010

Most patients survive common thyroid cancer regardless of treatment

Individuals with papillary thyroid cancer that has not spread beyond the thyroid gland appear to have favorable outcomes regardless of whether they receive treatment within the first year after diagnosis, according to a report in the May issue of Archives of Otolaryngology–Head & Neck Surgery, one of the JAMA/Archives journals.

Papillary thyroid cancer is commonly found on autopsy among individuals who died of other causes, according to background information in the article. "Studies published as early as 1947 demonstrated it, and more recently, a report has shown that nearly every thyroid gland might be found to have a cancer if examined closely enough," the authors

write. "The advent of ultrasonography and fine-needle aspiration biopsy has allowed many previously undetected cancers to be identified, changing the epidemiology of the disease. Over the past 30 years, the detected incidence of thyroid cancer has increased three-fold, the entire increase attributable to papillary thyroid cancer and 87% of the increase attributable to tumors measuring less than 2 centimeters."

Louise Davies, M.D., M.S., of Dartmouth Medical School, Hanover, N.H. and Gilbert Welch, M.D., M.P.H., both also of Department of Veterans Affairs Medical Center, White River Junction, Vt., and The Dartmouth Institute for Health Policy and Clinical Practice, Hanover, studied cancer cases and individual treatment data from National Cancer Institute registries. They then tracked cause of death through the National Vital Statistics System.

The researchers identified 35,663 patients with papillary thyroid cancer that had not spread to the lymph nodes or other areas at diagnosis. Of these, 440 (1.2 percent) did not undergo immediate, definitive treatment. Over an average of six years of follow-up, six of these patients died of their cancer. This was not significantly different from the rate of cancer death among the 35,223 individuals who did undergo treatment (161 over an average of 7.6 years of follow-up).

The 20-year survival rate from cancer was estimated to be 97 percent for those who did not receive treatment and 99 percent for those who did. "These data help put management decisions about localized papillary thyroid cancer in perspective: papillary thyroid cancers of any size that are confined to the thyroid gland, have no lymph node metastases at presentation and do not show extraglandular extension [reach beyond the thyroid gland] are unlikely to result in death due to the cancer," the authors write.

"Thus, clinicians and patients should feel comfortable considering the option to observe for a year or longer cancers that fall into this category," they conclude. "When treatment is elected, the cancers in this category can be managed with either hemithyroidectomy [removal of part of the thyroid] or total thyroidectomy [removal of the complete gland], and the prognosis will be the same."

Public release date: 17-May-2010

'Fountain of youth' steroids could protect against heart disease Such as Pregnenolone and DHEA

A natural defence mechanism against heart disease could be switched on by steroids sold as health supplements, according to researchers at the University of Leeds.

The University of Leeds biologists have identified a previously-unknown ion channel in human blood vessels that can limit the production of inflammatory cytokines – proteins that drive the early stages of heart disease.

They found that this protective effect can be triggered by pregnenolone sulphate - a molecule that is part of a family of 'fountain-of-youth' steroids. These steroids are so-called because of their apparent ability to improve energy, vision and memory.

Importantly, collaborative studies with surgeons at Leeds General infirmary have shown that this defence mechanism can be switched on in diseased blood vessels as well as in healthy vessels.

So-called 'fountain of youth' steroids are made naturally in the body, but levels decline rapidly with age. This has led to a market in synthetically made steroids that are promoted for their health benefits, **such as pregnenolone and DHEA.**

Pregnenolone sulphate is in the same family of steroids but it is not sold as a health supplement.

"The effect that we have seen is really quite exciting and also unexpected," said Professor David Beech, who led the study. "However, we are absolutely not endorsing any claims made by manufacturers of any health supplements. Evidence from human trials is needed first."

A chemical profiling study indicated that the protective effect was not as strong when cholesterol was present too. This suggests that the expected benefits of 'fountain of youth' steroids will be much greater if they are used in combination with cholesterol-lowering drugs and/or other healthy lifestyle strategies such as diet and exercise.

"These 'fountain of youth' steroids are relatively cheap to make and some of them are already available as commercial products. So if we can show that this effect works in people as well as in lab-based studies, then it could be a cost-effective approach to addressing cardiovascular health problems that are becoming epidemic in our society and world-wide," Professor Beech added.

The paper is published in Circulation Research.

Public release date: 17-May-2010

New evidence caffeine may slow Alzheimer's disease and other dementias, restore cognitive function

Researchers explore potential benefits of caffeine in special supplement to the Journal of Alzheimer's Disease

Amsterdam, The Netherlands, May 17, 2010 – Although caffeine is the most widely consumed psychoactive drug worldwide, its potential beneficial effect for maintenance of proper brain functioning has only recently begun to be adequately appreciated. Substantial evidence from epidemiological studies and fundamental research in animal models suggests that caffeine may be protective against the cognitive decline seen in

dementia and Alzheimer's disease (AD). A special supplement to the Journal of Alzheimer's Disease, "Therapeutic Opportunities for Caffeine in Alzheimer's Disease and Other Neurodegenerative Diseases," sheds new light on this topic and presents key findings.

Guest editors Alexandre de Mendonça, Institute of Molecular Medicine and Faculty of Medicine, University of Lisbon, Portugal, and Rodrigo A. Cunha, Center for Neuroscience and Cell Biology of Coimbra and Faculty of Medicine, University of Coimbra, Portugal, have assembled a group of international experts to explore the effects of caffeine on the brain. The resulting collection of original studies conveys multiple perspectives on topics ranging from molecular targets of caffeine, neurophysiological modifications and adaptations, to the potential mechanisms underlying the behavioral and neuroprotective actions of caffeine in distinct brain pathologies.

"Epidemiological studies first revealed an inverse association between the chronic consumption of caffeine and the incidence of Parkinson's disease," according to Mendonça and Cunha. "This was paralleled by animal studies of Parkinson's disease showing that caffeine prevented motor deficits as well as neurodegeneration." Later a few epidemiological studies showed that the consumption of moderate amounts of caffeine was inversely associated with the cognitive decline associated with aging as well as the incidence of Alzheimer's disease. Again, this was paralleled by animal studies showing that chronic caffeine administration prevented memory deterioration and neurodegeneration in animal models of aging and of Alzheimer's disease."

Key findings presented in "Therapeutic Opportunities for Caffeine in Alzheimer's Disease and Other Neurodegenerative Diseases":

- Multiple beneficial effects of caffeine to normalize brain function and prevent its degeneration
- Caffeine's neuroprotective profile and its ability to reduce amyloid-beta production
- Caffeine as a candidate disease-modifying agent for Alzheimer's disease
- Positive impact of caffeine on cognition and memory performance
- Identification of adenosine A2A receptors as the main target for neuroprotection afforded by caffeine consumption
- Confirmation of data through valuable meta-analyses presented
- Epidemiological studies corroborated by meta-analysis suggesting that caffeine may be protective against Parkinson's disease

•Several methodological issues must be solved before advancing to decisive clinical trials

Mendonça and Cunha also observe that "the daily follow-up of patients with AD has taught us that improvement of daily living may be a more significant indicator of amelioration than slight improvements in objective measures of memory performance. One of the most prevalent complications of AD is depression of mood, and the recent observations that caffeine might be a mood normalizer are of particular interest."

Public release date: 17-May-2010

High-fat ketogenic diet effectively treats persistent childhood seizures

The high-fat ketogenic diet can dramatically reduce or completely eliminate debilitating seizures in most children with infantile spasms, whose seizures persist despite medication, according to a Johns Hopkins Children's Center study published online April 30 in the journal *Epilepsia*.

Infantile spasms, also called West syndrome, is a stubborn form of epilepsy that often does not get better with antiseizure drugs. Because poorly controlled infantile spasms may cause brain damage, the Hopkins team's findings suggest the diet should be started at the earliest sign that medications aren't working.

"Stopping or reducing the number of seizures can go a long way toward preserving neurological function, and the ketogenic diet should be our immediate next line of defense in children with persistent infantile spasms who don't improve with medication," says senior investigator Eric Kossoff, M.D., a pediatric neurologist and director of the ketogenic diet program at Hopkins Children's.

The ketogenic diet, made up of high-fat foods and few carbohydrates, works by triggering biochemical changes that eliminate seizure-causing short circuits in the brain's signaling system. It has been used successfully in several forms of epilepsy.

A small 2002 study by the same Hopkins team showed the diet worked well in a handful of children with infantile spasms. The new study is the largest analysis thus far showing just how effective the diet can be in children with this condition.

Of the 104 children treated by the Hopkins team, nearly 40 percent, or 38 children, became seizure-free for at least six months after being on the diet for anywhere from just a few days to 20 months. Of the 38, 30 have remained so without a relapse for at least two years.

After three months on the diet, one-third of the children had 90 percent fewer seizures, and after nine months on the diet, nearly half of the children in the study had 90 percent fewer seizures. Nearly two-thirds had half as many seizures after six months on the diet.

Nearly two-thirds of the children experienced improvement in their neurological and cognitive development, and nearly 30 percent were weaned off antiseizure medications after starting the diet.

Most of the children continued taking their medication even after starting the diet, the researchers say, because the two are not mutually exclusive and can often work in synergy.

Researchers also used the diet as first-line therapy in 18 newly diagnosed infants never treated with drugs, 10 of whom became seizure free within two weeks of starting the diet. The finding suggests that, at least in some children, the diet may work well as first-line therapy, but the researchers say they need further and larger studies to help them identify patients for whom the diet is best used before medications. Hopkins Children's neurologists are actively using the ketogenic diet as first-line treatment in children with infantile spasms with promising results.

Side effects, including constipation, heartburn, diarrhea and temporary spikes in cholesterol levels, occurred in one-third of the children, with six percent of them experiencing diminished growth.

Despite these side effects, a recent study by Kossoff and his team showed that the ketogenic diet is safe long term.

Conflict of interest disclosure: Dr. Kossoff has received grant support from Nutricia Inc., for unrelated research. The terms of these arrangements are being managed by the Johns Hopkins University in accordance with its conflict-of-interest policies.

Public release date: 19-May-2010

Study: Yogurt-like drink DanActive reduced rate of common infections in daycare children

Washington, DC – The probiotic yogurt-like drink DanActive reduced the rate of common sicknesses such as ear infections, sinusitis, the flu and diarrhea in daycare children, say researchers who studied the drink in the largest known probiotic clinical trial to be conducted in the United States. An additional finding, however, showed no reduction in the number school days missed. The study led by Daniel Merenstein of Georgetown University School of Medicine (GUSOM), was funded by The Dannon Company, Inc., and published today online in the European Journal of Clinical Nutrition.

Probiotic foods are continuing to increase in popularity and some are marketed for the potential benefits of probiotics such as **Lactobacillus casei (L. casei)** DN-114 001, the probiotic in DanActive. Studies in other countries have found that probiotics, which are live micro-organisms, produce positive health benefits in children, including the reduction of school days missed due to infections. However, most of the research was

conducted outside the United States in structured conditions not comparable to normal everyday living.

"We were interested in a study that resembled how children in the U.S. consume drinks that are stored in home refrigerators and consumed without study personnel observation," says the study's lead author Daniel Merenstein, MD, director of research in the Department of Family Medicine at GUSOM.

"...To our knowledge this is the largest probiotic clinical trial conducted in the U.S. and provides much needed data," say the authors of the study. "We studied a functional food, not a medicinal product; parents will thus feed their children without any physician input and we felt it was best to assess [the drink] under similar conditions."

The study, titled DRINK (Decreasing the Rates of Illness in Kids), was a randomized, double-blind, placebo-controlled study – the gold standard in clinical research design. It included 638 healthy children, aged three to six, who attended school five days a week. Parents were asked to give their child a daily strawberry yogurt-like drink. Some of the drinks were supplemented with the probiotic strain *L. casei* DN-114 001 (DanActive), while others had no probiotics (placebo). Neither the study coordinators, the children, nor the parents knew which drink was given to which participant until the study ended. In addition to phone interviews with researchers, parents kept daily diaries of their child's health and the number of drinks consumed.

Researchers found a 19 percent decrease of common infections among the children who drank the yogurt-like drink with *L. casei* DN-114 001 compared to those whose drink did not have the probiotic. More specifically, those who drank DanActive **had 24 percent fewer gastrointestinal infections (such as diarrhea, nausea, and vomiting), and 18 percent fewer upper respiratory tract infections (such as ear infections, sinusitis and strep).** However, the reduction in infections did not result in fewer missed school days or activities – also a primary outcome of the study.

"Our study had mixed results," says Merenstein. "Children in school or daycare are especially susceptible to these illnesses. We did find some differences in infection rates but this did not translate to fewer missed school days or change in daily activity. It is my hope that safe and tolerable ways to reduce illnesses could eventually result in fewer missed school days which means fewer work days missed by parents."

"It is important that more of these products are put under the microscope by independent academic researchers," he concludes.

Public release date: 20-May-2010

Estrogen-lowering drugs minimize surgery in breast cancer patients

A nationwide study has confirmed the benefit of giving estrogen-lowering drugs before surgery to breast cancer patients. The treatment increased the likelihood that women

could undergo breast-conservation surgery, also called lumpectomy, instead of mastectomy.

The study's chair, Matthew J. Ellis, MD, PhD, the Anheuser-Busch Endowed Chair in Medical Oncology and a breast cancer specialist with the Alvin J. Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine in St. Louis, will present the findings June 7 at the annual meeting of the American Society of Clinical Oncology.

Sponsored by the American College of Surgeons Oncology Group, the study took place at 118 hospitals across the country and involved 352 postmenopausal women with estrogen-receptor positive (ER+) breast tumors. The participants received aromatase inhibitors for 16 weeks before surgery for breast cancer, and the extent of their tumors was monitored before and after the drug treatment.

The lead investigator at the Washington University site was Julie A. Margenthaler, MD, assistant professor of surgery and a breast surgeon at the Siteman Cancer Center.

Aromatase inhibitors are also referred to as estrogen-lowering agents because they interfere with the body's production of estrogen, a hormone that stimulates the growth of ER+ breast tumors. ER+ is the most common breast cancer, accounting for three-quarters of cases.

All women in the study had stage II or III breast cancer, in which tumors are about an inch or larger in size and may have spread to the lymph nodes in the underarm area. Participants were placed in one of three groups at the study's start:

- marginal, meaning breast-conservation surgery was possible but likely to be disfiguring or to require several surgical procedures;
- mastectomy-only, meaning breast-conservation surgery was not possible; and
- inoperable, meaning mastectomy would not completely remove the cancer.

After the 16-week aromatase inhibitor therapy, the women were reevaluated to see which surgical option was appropriate for them. **The results showed that 82 percent of women in the marginal group, 51 percent in the mastectomy-only group and 75 percent in the inoperable group had successful breast-conservation surgery instead of mastectomy.**

"Aromatase inhibitor therapy shrank the tumors in many of these women and improved surgical outcomes," Ellis says. "These results will encourage a change in practice across the country so that more women can benefit from the currently underutilized approach of administering estrogen-lowering agents before surgery."

The study participants were randomly assigned to receive one of three estrogen-lowering agents: exemestane (25 mg daily), letrozole (2.5 mg daily) or anastrozole (1 mg daily). No statistically significant difference in effectiveness was found among the three drugs.

Ellis explains that there are other benefits to using estrogen-lowering agents before surgery.

"ER+ breast cancer can be thought of as a chronic disease because patients generally take estrogen-lowering agents for many years after surgery to repress recurrence," Ellis says. "In other chronic diseases, such as hypertension or diabetes, a patient's response to treatment is continually monitored. But we've never done that with breast cancer. By treating breast cancer patients with estrogen-lowering drugs for three or four months before surgery, we can monitor treatment response and then specifically tailor surgical and post-surgical treatment based on this response."

Public release date: 21-May-2010

Prenatal exposure to endocrine-disrupting chemicals linked to breast cancer

A study in mice reveals that prenatal exposure to **endocrine-disrupting chemicals, like bisphenol-A (BPA) and diethylstilbestrol (DES), may program a fetus for life.** Therefore, adult women who were exposed prenatally to BPA or DES could be at increased risk of breast cancer, according to a new study accepted for publication in *Hormones & Cancer*, a journal of The Endocrine Society.

Endocrine-disrupting chemicals are substances in the environment that interfere with hormone biosynthesis, metabolism or action resulting in adverse developmental, reproductive, neurological and immune effects in both humans and wildlife. These chemicals are designed, produced and marketed largely for specific industrial purposes.

"BPA is a weak estrogen and DES is a strong estrogen, yet our study shows both have a profound effect on gene expression in the mammary gland (breast) throughout life," said Hugh Taylor, MD, of the Yale University School of Medicine in New Haven, Conn. and lead author of the study. "All estrogens, even 'weak' ones can alter the development of the breast and ultimately place adult women who were exposed to them prenatally at risk of breast cancer."

In this study, researchers treated pregnant mice with BPA or DES and then looked at the offspring as adults. When the offspring reached adulthood, their mammary glands still produced higher levels of EZH2, a protein that plays a role in the regulation of all genes. Higher EZH2 levels are associated with an increased risk of breast cancer in humans.

"We have demonstrated a novel mechanism by which endocrine-disrupting chemicals regulate developmental programming in the breast," said Taylor. "This study generates important safety concerns about exposures to environmental endocrine disruptors such as BPA and suggests a potential need to monitor women exposed to these chemicals for the development of breast lesions as adults."

Ralph's Note - How many more warnings do we need ? If this stuff is not banned now. We may be responsible for the deaths of many generations to come.

Public release date: 24-May-2010

Anti-aging supplements may be best taken not too late in life

Anti-aging supplements made up of mixtures might be better than single compounds at preventing decline in physical function, according to researchers at the University of Florida's Institute on Aging. In addition, it appears that such so-called nutraceuticals should be taken before very old age for benefits such as improvement in physical function.

The findings from rat studies, published last week in the journal PLoS One, have implications for how dietary supplementation can be used effectively in humans.

"I think it is important for people to focus on good nutrition, but for those of advanced age who are running out of energy and not moving much, we're trying to find a supplement mixture that can help improve their quality of life," said Christiaan Leeuwenburgh, Ph.D., senior author of the paper and chief of the biology of aging division in the UF College of Medicine.

Scientists do not fully understand all the processes that lead to loss of function as people age. But more and more research points to the mitochondrial free radical theory of aging, that as people age, oxidative damage piles up in individual cells such that the energy-generation system inside some cells stops working properly.

To address that problem, many anti-aging studies and supplements are geared toward reducing the effects of free radicals.

The UF researchers investigated the potential anti-aging benefits of a commercially available mixture marketed for relieving chronic fatigue and protecting against muscle aging. The supplement contains the antioxidant coenzyme Q10, creatine — a compound that aids muscle performance — and ginseng, which also has been shown to have antioxidant properties.

The study gauged the effects of the mixture on physical performance as well as on two mechanisms that underlie the aging process and many age-related disorders: dysfunction of the cells' energy producing powerhouses, known as mitochondria, and oxidative stress.

The researchers fed the supplement to middle-aged 21-month-old and late-middle-aged 29-month-old rats — corresponding to 50- to 65-year-old and 65- to 80-year-old humans, respectively — for six weeks, and measured how strongly their paws could grip. Grip strength in rats is analogous to physical performance in humans, and deterioration in grip strength can provide useful information about muscle weakness or loss seen in older adults.

Grip strength improved 12 percent in the middle-aged rats compared with controls, but no improvement was found in the older group.

Measurements of the function of mitochondria corresponded with the grip strength findings. **Stress tests showed that mitochondrial function improved 66 percent compared with controls in middle-aged rats but not in the older ones. That suggests that supplementation might be of greater effect before major age-related functional and other declines have set in, the researchers said.**

"It is possible that there is a window during which these compounds will work, and if the intervention is given after that time it won't work," said Jinze Xu, Ph.D., first author of the paper and a postdoctoral researcher at UF.

The researchers are working to identify the optimal age at which various interventions can enhance behavioral or physical performance. Very few studies have been done to show the effect of interventions on the very old.

Interestingly, although the older rats had no improvement in physical performance or mitochondrial function, they had lowered levels of oxidative damage.

That shows that reduction of oxidative stress damage is not always matched by functional changes such as improvement in muscle strength.

As a result, research must focus on compounds that promote proper functioning of the mitochondria, since mitochondrial health is essential in older animals for reducing oxidative stress, the researchers said. And clinical trials need to be performed to test the effectiveness of the supplements in humans.

"It's going to be very important to focus less on oxidative stress and biomarkers, and focus on having sufficient energy," Leeuwenburgh said. "If energy declines, then you have an increased chance for oxidative stress or failure of repair mechanisms that recognize oxidative damage — we're seeing that the health of mitochondria is central to aging."

It is possible that although the supplement could help reduce the oxidative stress damage, because damage in much older animals was too great, energy could not be restored.

The different compounds in the mixture acted to produce effects that single compounds did not, because each component affected a different biochemical pathway in the body, addressing both oxidative stress and mitochondrial function, researchers said.

"People are catching on that using a single compound is not a good strategy — you have to use multiple compounds and target one or multiple pathways," Leeuwenburgh said.

Public release date: 24-May-2010

Folate prevents alcohol-induced congenital heart defects in mice

University of South Florida study suggests high dose needed very early in pregnancy to protect developing heart

Tampa, FL (May 24, 2010) --- A new animal study has found that high levels of the B-vitamin folate (folic acid) prevented heart birth defects induced by alcohol exposure in early pregnancy, a condition known as fetal alcohol syndrome.

Researchers at the University of South Florida College of Medicine and All Children's Hospital report that the protection was afforded only when folate was administered very early in pregnancy and before the alcohol exposure. The dose that best protected against heart defects in mice was considerably higher than the current dietary recommendation of 400 micrograms (0.4 milligrams) daily for women of child-bearing age.

The findings were published online earlier this month in the American Journal of Obstetrics and Gynecology.

While more research is needed, the study has implications for re-evaluating folate supplementation levels during early pregnancy, said principal investigator Kersti Linask, PhD, the Mason Professor of Cardiovascular Development at USF and Children's Research Institute/All Children's Hospital.

"Congenital heart defects can occur in the developing embryo at a time when women typically do not even know they are pregnant – 16 to 18 days following conception. They may have been drinking alcohol or using prescription drugs without realizing this could be affecting embryonic development," Dr. Linask said.

"We found that we could prevent alcohol-associated defects from arising in the mice -- provided folate was given in relatively high concentrations very early in pregnancy around conception."

In the USF study, two randomly assigned groups of pregnant mice were fed diets supplemented by folate in adjusted doses known from epidemiological studies to rescue human embryos from craniofacial birth defects. From the day after conception, one group received a high dose of folate supplementation (10.5 milligrams/kilogram) and the second received a moderate dose (6.2 mg/kg). A third control group ate a normal folate-supplemented diet (3.3 mg/kg) determined to maintain the general health of the pregnant mice, but not to rescue embryos from birth defects.

During the first week of pregnancy, the mice in all three groups were then administered injections of alcohol simulating a single binge drinking event in humans.

Following this alcohol exposure, Doppler ultrasound confirmed that 87 percent of the embryos of pregnant mice in the third group – those not receiving folate supplementation beyond what was present in their normal diets – had developed heart valve defects. The

affected embryos were also smaller in size and their heart muscle walls appeared thinner.

Between days 15 and 16 of pregnancy in the mice – equal to 56 days of gestation in humans -- ultrasound also showed that the high-folate diet protected heart valve development against lasting defects and restored heart function and embryonic size to near-normal levels. The moderate-folate diet provided only partial protection; in this group 58 percent of the mouse embryos developed heart valves that functioned abnormally, with a back flow of blood.

The researchers suggest that folate fortification may be most effective at preventing heart birth defects when administered at significantly higher levels than the doses currently recommended to prevent pregnancy complications -- both in normal women (0.4 milligrams recommended daily) and even in women who have delivered an infant with a spinal birth defect (4 milligrams daily). Although higher folate levels did not cause adverse side effects in the pregnant mice, Dr. Linask notes, the safety and effectiveness of higher doses must be proven with human trials.

The heart is the first organ to form and function during embryonic development of vertebrates. The USF researchers suggest that folate supplementation thwarts alcohol's damaging effect on an important early signaling pathway that plays a vital role in early heart development and subsequently in valve formation.

Public release date: 24-May-2010

LSUHSC researcher finds surprising link between sugar in drinks and blood pressure

New Orleans, LA – Research led by Liwei Chen, MD, PhD, Assistant Professor of Public Health at LSU Health Sciences Center New Orleans, **has found that there is an association between sugary drinks and blood pressure and that by cutting daily consumption of sugary drinks by just one serving a day, people can lower their blood pressure.** The research is published online in *Circulation: Journal of the American Heart Association*.

"We found no association for diet beverage consumption or caffeine intake and blood pressure," notes Dr. Chen, **"suggesting that sugar may actually be the nutrient that is associated with blood pressure and not caffeine which many people would suspect."**

The research, which was supported by a grant from the National Heart, Lung, and Blood Institute of the National Institutes of Health, analyzed dietary intake and blood pressure of 810 adults measured at baseline, 6 and 18 months. After known risk factors of high blood pressure were controlled for, a reduction in sugar-sweetened beverage consumption of one serving per day was associated with a drop of 1.8 mm Hg in systolic pressure and 1.1 mm Hg in diastolic blood pressure over 18 months.

After additional adjustment for weight change over the same period, a reduction in the consumption of sugar-sweetened beverages was still significantly associated with blood pressure reduction.

"By reducing the amount of sugar in your diet, you are also reducing the number of calories you consume and may lose weight," adds Dr. Chen. "But even among those whose weight was stable, we still found that people who drank fewer sugary sodas lowered their blood pressure."

Elevated blood pressure continues to be one of the most common and important problems in the United States. According to the American Heart Association, about 74.5 million people in the United States, or one in three people, age 20 and older have high blood pressure. It is estimated that high blood pressure killed 56,561 Americans in 2006. From 1996 to 2006, the death rate from high blood pressure increased 19.5 percent, and the actual number of deaths rose 48.1 percent.

Normal blood pressure, measured in millimeters of mercury, is defined as systolic (top number) less than 120 and diastolic (bottom number) less than 80. High blood pressure (hypertension) is a systolic pressure of 140 or higher and a diastolic pressure of 90 or higher. Pressures falling in the range between are considered to be prehypertension.

High blood pressure, which usually has few symptoms, if any, is an established risk factor for stroke, cardiovascular disease, kidney failure, and shortened life expectancy.

"More research is needed to establish the causal relationship, but in the meantime, people can benefit right now by reducing their intake of sugary drinks by at least one serving per day," concludes Dr. Chen.

Public release date: 25-May-2010

Dangerous lung worms found in people who eat raw crayfish

If you're headed to a freshwater stream this summer and a friend dares you to eat a raw crayfish – don't do it. You could end up in the hospital with a severe parasitic infection.

Physicians at Washington University School of Medicine in St. Louis have diagnosed a rare parasitic infection in six people who had consumed raw crayfish from streams and rivers in Missouri. The cases occurred over the past three years, but three have been diagnosed since last September; the latest in April. Before these six, only seven such cases had ever been reported in North America, where the parasite, *Paragonimus kellicotti*, is common in crayfish.

"The infection, called paragonimiasis, is very rare, so it's extremely unusual to see this many cases in one medical center in a relatively short period of time," says Washington University infectious diseases specialist Gary Weil, MD, professor of medicine and of

molecular microbiology, who treated some of the patients. "We are almost certain there are other people out there with the infection who haven't been diagnosed. That's why we want to get the word out."

Paragonimiasis causes fever, cough, chest pain, shortness of breath and extreme fatigue. The infection is generally not fatal, and it is easily treated if properly diagnosed. But the illness is so unusual that most doctors are not aware of it. Most of the patients had received multiple treatments for pneumonia and undergone invasive procedures before they were referred to Barnes-Jewish Hospital or St. Louis Children's Hospital at Washington University Medical Center.

The half-inch, oval-shaped parasitic worms at the root of the infection primarily travel from the intestine to the lungs. They also can migrate to the brain, causing severe headaches or vision problems, or under the skin, appearing as small, moving nodules.

Some of the patients had been in and out of the hospital for months as physicians tried to diagnose their mysterious illness and treat their symptoms, which also included a buildup of fluid around the lungs and around the heart. One patient even had his gallbladder removed, to no avail.

"Some of these invasive procedures could have been avoided if the patients had received a prompt diagnosis," says Michael Lane, MD, an infectious diseases fellow at the School of Medicine who treated some of the patients. "We hope more doctors will now have this infection on their radar screens for patients with an unexplained lingering fever, cough and fatigue."

Once the diagnosis is made, paragonimiasis is easily treated with an oral drug, praziquantel, taken three times a day for only two days. Symptoms begin to improve within a few days and are typically gone within seven to 10 days. All the patients have completely recovered, even one patient who temporarily lost his vision when parasites invaded the brain.

The recent infections, which occurred in patients ages 10-32, have prompted the Missouri Department of Health & Senior Services to issue a health advisory alerting doctors across the state. The department also printed posters warning people not to eat raw crayfish and placed them in campgrounds and canoe rental businesses near popular Missouri streams. Thoroughly cooking crayfish kills the parasite and does not pose a health risk.

Paragonimiasis is far more common in East Asia, where many thousands of cases are diagnosed annually in people who consume raw or undercooked crab that contain *Paragonimus westermani*, a cousin to the parasite in North American crayfish.

While the U.S. Centers for Disease Control and Prevention has an antibody test to identify *Paragonimus westermani* infection, the test is not sensitive for patients with *P. kellicotti* parasite, and this makes diagnosis a real challenge. Diagnostic clues include elevated levels of white blood cells called eosinophils. These cells typically are elevated

in patients with worm parasites, but they can also occur in more common illnesses, including cancer, autoimmune disease and allergy. X-rays also show excess fluid around the lungs and sometimes the heart.

"You have to be a bit of a detective and be open to all the clues," says Washington University infectious diseases specialist Thomas Bailey, MD, professor of medicine, who diagnosed and treated the first case at the School of Medicine.

As a case in point, the first patient who sought treatment at Washington University had had a fever and cough for several weeks. His chest X-ray showed fluid around the lungs, and blood tests showed elevated levels of eosinophils.

The "aha moment" for Bailey occurred when the patient's wife mentioned that his symptoms developed about a week after he ate raw crayfish from a Missouri river, and Bailey recalled that in Asia eating raw or undercooked crabs can lead to a paragonimus infection. With a quick search of the medical literature, Bailey learned that rare cases of North American paragonimiasis had been described in patients eating raw crayfish. The scenario fit perfectly with his patient.

"That's the interesting thing about being an infectious diseases doctor," Bailey says. "Every time you see a new patient you have to be open to the possibility that the diagnosis could be something highly unusual."

Crayfish are common throughout North America, where hundreds of species live in rivers, streams, lakes and ponds. The parasite *P. kellicotti* has a complex life cycle. It lives in snails and crayfish but only causes a dangerous infection if it is ingested by mammals, including dogs, cats and humans, who eat it raw.

No one knows why more cases of paragonimiasis are being diagnosed now, but doctors and researchers at Washington University are studying the parasite and hope to develop a better diagnostic test for the infection. For now, the message for physicians is to consider paragonimiasis in patients with cough, fever and eosinophilia. The simple message for the public is: "Do not eat raw crayfish," Weil says.

Public release date: 26-May-2010

Some bisphosphonates users unfamiliar with drug's possible side effects on oral health

CHICAGO, May 26, 2010 – People undergoing bisphosphonate therapy to prevent or treat osteoporosis (a thinning of the bones) may be unfamiliar with the drug and possible adverse side effects on oral health, according to a study in the May issue of the Journal of the American Dental Association (JADA).

Use of bisphosphonates has been associated with a small risk of developing bisphosphonate-associated osteonecrosis of the jaw (BON) that occurs spontaneously or

after the patient has undergone dental surgery. BON is a rare but serious condition that can cause severe damage to the jaw bone. The prevalence of BON is between three and 12 percent for patients who receive bisphosphonates intravenously for cancer therapy and less than one percent for patients who receive bisphosphonates orally for osteoporosis or osteopenia.

In the study, the authors sought to determine whether patients taking bisphosphonates had knowledge about the medical indication for the therapy and how long the treatment would last. They also wanted to know whether participants' physicians told them about possible adverse reactions.

The researchers interviewed 73 participants (71 women, two men) seeking routine care in a dental clinic. These participants, with an average age of 66 years that ranged from 44 to 88 years, also were undergoing bisphosphonate treatment. Eighty-four percent of the participants stated they knew why they were receiving bisphosphonate therapy.

However, 80 percent said they were unsure about the duration of the therapy and 82 percent could not recall receiving information about the risk of experiencing adverse reactions, including oral osteonecrosis, by their physicians.

"The results of our small study show that patients who take bisphosphonates may not be aware that BON can develop after they undergo invasive dental care," the authors wrote. "We believe that a more effective communication process between prescribing physicians, dentists and patients using bisphosphonates is needed."

The American Dental Association Advisory Committee on Medication-induced Osteonecrosis of the Jaw recommends that dental patients on bisphosphonate therapy advise their dentist. The Committee believes that it is always appropriate for physicians to encourage patients to visit the dentist regularly for professional cleanings and oral exams, as recommended by their dentist. This is especially important for patients whose oral health is put at risk from medications or medical problems.

Public release date: 26-May-2010

You have no natural right to food

The Farm-to-Consumer Legal Defense Fund (FTCLDF), an organization whose mission includes "defending the rights and broadening the freedoms of family farms and protecting consumer access to raw milk and nutrient dense foods", recently filed a lawsuit against the FDA for its ban on interstate sales of raw milk. The suit alleges that such a restriction is a direct violation of the United States Constitution. Nevertheless, the suit led to a surprisingly cold response from the FDA about its views on food freedom (and freedoms in general).

In a dismissal notice issued to the Iowa District Court where the suit was filed, the FDA officially made public its views on health and food freedom. These views will shock you, but they reveal the true evil intent of the FDA and why it is truly a rogue federal agency.

The FDA essentially believes that nobody has the right to choose what to eat or drink. You are only “allowed” to eat or drink what the FDA gives you permission to. There is no inherent right or God-given right to consume any foods from nature without the FDA’s consent.

This is no exaggeration. It’s exactly what the FDA said in its own words.

You have no natural right to food

The FTCLDF highlighted a few of the key phrases from the FDA’s response document in a recent email to its supporters. They include the following two statements from the FDA:

“There is no ‘deeply rooted’ historical tradition of unfettered access to foods of all kinds.” [p. 26]

“Plaintiffs’ assertion of a ‘fundamental right to their own bodily and physical health, which includes what foods they do and do not choose to consume for themselves and their families’ is similarly unavailing because plaintiffs do not have a fundamental right to obtain any food they wish.” [p.26]

There’s a lot more in the document, which primarily addresses the raw milk issue, but these statements alone clearly reveal how the FDA views the concept of health freedom. Essentially, the FDA does not believe in health freedom at all. It believes that it is the only entity granted the authority to decide for you what you are able to eat and drink.

The State, in other words, may override your food decisions and deny you free access to the foods and beverages you wish to consume. And the State may do this for completely unscientific reasons — even just political reasons — all at their whim.

Ralph’s note - Who would of ever guessed that we would lose our freedom to eat? It’s not lost yet, but obviously some would let to see that happen.

**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.**