



The Vitamin & Herb Stores

**Human Technology Research Synopsis**

**61<sup>st</sup> Issue Date 21 JUL 09**

**Compiled By Ralph Turchiano**

[www.vit.bz](http://www.vit.bz)

**VIDEO COMMENTARIES**

[www.YouTube.com/VH1618](http://www.YouTube.com/VH1618)

**Or the Show Full Show Format**

[www.YouTube.com/VHFILM](http://www.YouTube.com/VHFILM)

### **Editors Top Five:**

- 1. Easter Island compound extends lifespan of old mice**
- 2. Is obesity an oral bacterial disease?**
- 3. Are we what our mothers ate?**
- 4. New evidence that popular dietary supplement may help prevent, treat cataracts**
- 5. INCREASE IN THYROID CANCER NOT EXPLAINED BY SCREENING ALONE**

### **In This Issue :**

- 1. Easter Island compound extends lifespan of old mice**
- 2. Plastics chemical retards growth, function of adult reproductive cells**
- 3. Is obesity an oral bacterial disease?**
- 4. Dry Mouth Linked to Prescription and Over the Counter Drugs**
- 5. INCREASE IN THYROID CANCER NOT EXPLAINED BY SCREENING ALONE**
- 6. Pesticide levels in blood linked to Parkinson's disease, researchers find**
- 7. Probiotics help gastric-bypass patients lose weight more quickly, Stanford study shows**
- 8. Asian Spice Could Reduce Breast Cancer Risk in Postmenopausal Women Exposed to Hormone Replacement Therapy, MU Study Finds**
- 9. Hormone therapy use associated with increased risk of ovarian cancer**
- 10. Study demonstrates the anti-inflammatory properties of pine bark extract**
- 11. New evidence that popular dietary supplement may help prevent, treat cataracts**
- 12. Baking soda: For cooking, cleaning and kidney health?**
- 13. Baby bathwater contains fragrance allergens**
- 14. Healing power of aloe vera proves beneficial for teeth and gums, too**

**15. Prenatal exposure to environmental pollutants affect a child's intelligence quotient or IQ**

**16. Are we what our mothers ate?**

**Public release date: 8-Jul-2009**

**Easter Island compound extends lifespan of old mice**

**UT Health Science Center at San Antonio, other centers reach same result: 28-38 percent longer life**

SAN ANTONIO, Texas, U.S.A. — The giant monoliths of Easter Island are worn, but they have endured for centuries. New research suggests that a compound first discovered in the soil of the South Pacific island might help us stand the test of time, too.

Wednesday, July 8, in the journal *Nature*, The University of Texas Health Science Center at San Antonio and two collaborating centers reported that the Easter Island compound – called "rapamycin" after the island's Polynesian name, Rapa Nui – extended the expected lifespan of middle-aged mice by 28 percent to 38 percent. In human terms, this would be greater than the predicted increase in extra years of life if cancer and heart disease were both cured and prevented.

The rapamycin was given to the mice at an age equivalent to 60 years old in humans.

The studies are part of the National Institute on Aging (NIA) Interventions Testing Program, which seeks compounds that might help people remain active and disease-free throughout their lives. The other two centers involved are the University of Michigan at Ann Arbor and Jackson Laboratory in Bar Harbor, Maine.

The Texas study was led by scientists at two institutes at the UT Health Science Center: the Institute of Biotechnology (IBT) and the Barshop Institute for Longevity and Aging Studies.

"I've been in aging research for 35 years and there have been many so-called 'anti-aging' interventions over those years that were never successful," said Arlan G. Richardson, Ph.D., director of the Barshop Institute. "I never thought we would find an anti-aging pill for people in my lifetime; however, rapamycin shows a great deal of promise to do just that."

**Versatile compound**

Discovered in the 1970s, rapamycin was first noted for its anti-fungal properties and later was used to prevent organ rejection in transplant patients. It also is used in stents, which are implanted in patients during angioplasty to keep coronary arteries open. It is in clinical trials for the treatment of cancer.

The new aging experiments found that adding rapamycin to the diet of older mice increased their lifespan. The results were the same in Texas, Michigan and Maine.

"We believe this is the first convincing evidence that the aging process can be slowed and lifespan can be extended by a drug therapy starting at an advanced age," said Randy Strong, Ph.D., who directs the NIA-funded Aging Interventions Testing Center in San Antonio. He is a professor of pharmacology at the UT Health Science Center and a senior research career scientist with the South Texas Veterans Health Care System.

The findings have "interesting implications for our understanding of the aging process," said Z. Dave

Sharp, Ph.D., director of the Institute of Biotechnology and professor and chairman of the Health Science Center's Department of Molecular Medicine.

"In addition," Dr. Sharp said, "the findings have immediate implications for preventive medicine and human health, in that rapamycin is already in clinical usage."

#### Molecular pathway

Aging researchers currently acknowledge only two life-extending interventions in mammals: calorie restriction and genetic manipulation. Rapamycin appears to partially shut down the same molecular pathway as restricting food intake or reducing growth factors.

It does so through a cellular protein called mTOR (mammalian target of rapamycin), which controls many processes in cell metabolism and responses to stress.

A decade ago, Dr. Sharp proposed to his colleagues that mTOR might be involved in calorie restriction. "It seemed like an off-the-wall idea at that time," Dr. Richardson said.

In 2004, a year after the launch of the NIA Interventions Testing Program, Dr. Sharp submitted a proposal that rapamycin be studied for anti-aging effects. The proposal was approved, and testing centers in San Antonio and elsewhere began to include rapamycin in the diets of mice.

The male and female mice were cross-bred from four different strains of mice to more closely mimic the genetic diversity and disease susceptibility of the human population.

Dr. Strong soon recognized a problem: Rapamycin was not stable enough in food or in the digestive tract to register in the animals' blood level. He worked with the Southwest Research Institute in San Antonio to improve the bioavailability of the compound through a process called microencapsulation. The reformulated drug was stable in the diet fed to the mice and bypassed the stomach to release in the intestine, where it could more reliably enter the bloodstream.

#### Older mice

The original goal was to begin feeding the mice at 4 months of age, but because of the delay caused by developing the new formulation, the mice were not started until they were 20 months old – the equivalent of 60 years of age in humans. The teams decided to try the rapamycin intervention anyway.

"I did not think that it would work because the mice were too old when the treatment was started," Dr. Richardson said. "Most reports indicate that calorie restriction doesn't work when implemented in old animals. The fact that rapamycin increases lifespan in relatively old mice was totally unexpected."

Added Dr. Strong: "This study has clearly identified a potential therapeutic target for the development of drugs aimed at preventing age-related diseases and extending healthy lifespan. If rapamycin, or drugs like rapamycin, works as envisioned, the potential reduction in overall health cost for the U.S. and the world will be enormous."

**Public release date: 8-Jul-2009**

**Plastics chemical retards growth, function of adult reproductive cells**

IMAGE: Veterinary biosciences professor Jodi Flaws and her colleagues found that mouse follicle cells that were exposed to bisphenol A, a chemical found in many plastics, produced lower levels of steroid...

CHAMPAIGN, Ill. — Bisphenol A, a chemical widely used in plastics and known to cause reproductive problems in the offspring of pregnant mice exposed to it, also has been found to retard the growth of follicles of adult mice and hinder their production of steroid hormones, researchers report.

Their study is the first to show that chronic exposure to low doses of BPA can impair the growth and function of adult reproductive cells. The researchers will describe their findings this month at the annual meeting of the Society for the Study of Reproduction.

A healthy, mature follicle, called an antral follicle, includes a single egg cell surrounded by layers of cells and fluid which support the egg and produce steroid hormones, said University of Illinois veterinary biosciences professor Jodi Flaws, who led the study with graduate student Jackye Peretz.

"These are the only follicles that are capable of ovulating and so if they don't grow properly they're not going to ovulate and there could be fertility issues," Flaws said. "These follicles also make sex steroid hormones, and so if they don't grow properly you're not going to get proper amounts of these hormones." Such hormones are essential for reproduction, she said, "but they're also required for healthy bones, a healthy heart and a healthy mood."

BPA is widely used in plastics and is a common component of food containers and baby bottles.

The chemical structure of BPA is similar to that of estradiol, a key steroid hormone, and it can bind to estrogen receptors on the surface of some cells. It is not known whether BPA blocks, or mimics or enhances estrogen's activity on these cells, Flaws said.

Human studies have found BPA in many tissues and fluids, including urine, blood, breast milk, the amniotic fluid of pregnant women and the antral fluid of mature follicles. A national survey conducted by the federal Centers for Disease Control and Prevention in 2003-2004 found BPA in 93 percent of the 2,517 people (age 6 and up) who were tested.

BPA has a short half-life, Peretz said, and the chemical is quickly eliminated from the body. The fact that so many people tested positive "probably means that we're being constantly exposed to BPA," she said. The new study found that follicle growth was impaired after 48 hours of exposure to BPA, Peretz said. Reductions in three key steroid hormones – progesterone, testosterone and estradiol – were also seen after 120 hours of exposure to BPA.

The drop in steroid hormone production was quite dramatic. After 120 hours in a medium that included 10 micrograms per milliliter of BPA, mouse follicle cells produced about 85 percent less estradiol, 97 percent less progesterone and 95 percent less testosterone. Lower doses of BPA had a less dramatic – but still considerable – dampening effect on steroid hormone levels. And at 120 hours, follicle cells grown in the BPA medium were 25 percent smaller than normal, the researchers report.

A review of the health risks of BPA by the National Toxicology Program of the U.S. Department of Health and Human Services concluded in 2008 that while BPA has been shown to harm the reproductive health of laboratory animals in some studies, such adverse effects "are observed at levels of exposure that far exceed those encountered by humans."

However, the NTP reported that laboratory studies that showed effects in animals exposed to low doses of BPA led it to have "some concern for effects on the brain, behavior and prostate gland in fetuses, infants and children at current human exposures to bisphenol A."

The new study points to possible concerns in adults as well, Flaws said.

"I think there's a need for more studies where people look in adult humans to see if BPA is affecting follicle growth and steroid hormone levels," she said. If it is, that might help explain some infertility or menopausal symptoms, she said.

**Public release date: 8-Jul-2009**

## **Is obesity an oral bacterial disease?**

New research published in the June issue of the Journal of Dental Research suggests that oral bacteria may contribute to the development of obesity.

Alexandria, Va. – The world-wide explosion of overweight people has been called an epidemic. The inflammatory nature of obesity is widely recognized. Could it really be an epidemic involving an infectious agent? In this climate of concern over the increasing prevalence of overweight conditions in our society, investigators have focused on the possible role of oral bacteria as a potential direct contributor to obesity.

To investigate this possibility, the study's researchers J.M. Goodson, D. Groppo, S. Halem and E. Carpino measured salivary bacterial populations of overweight women. Saliva was collected from 313 women with a body mass index between 27 and 32, and bacterial populations were measured by DNA probe analysis. Levels in this group were compared with data from a population of 232 healthy individuals from periodontal disease studies. The median percentage difference of seven of the 40 bacterial species measured was greater than 2 percent in the saliva of overweight women. Classification tree analysis of salivary microbiological composition revealed that 98.4 percent of the overweight women could be identified by the presence of a single bacterial species (*Selenomonas noxia*) at levels greater than 1.05 percent of the total salivary bacteria. Analysis of these data suggests that the composition of salivary bacteria changes in overweight women.

It seems likely that these bacterial species could serve as biological indicators of a developing overweight condition. Of even greater interest, and the subject of future research, is the possibility that oral bacteria may participate in the pathology that leads to obesity.

**Public release date: 8-Jul-2009**

## **Dry Mouth Linked to Prescription and Over the Counter Drugs**

Nine Out Of Ten Dentists Say Patients with Dry Mouth Are Taking Multiple Medications

BALTIMORE (July 9, 2009) – Approximately ninety-one percent of dentists say patients complaining about dry mouth are taking multiple medications, according to a nationwide member survey conducted by the Academy of General Dentistry (AGD). Dry mouth, or xerostomia, is caused by a decrease in salivary function. It affects approximately one in four Americans, placing more than 25 percent of people at risk for tooth decay. During the Academy of General Dentistry's (AGD) 57th Annual Meeting & Exhibits in Baltimore, July 8-12, Cindy Kleinman, RDH, BS, will present a course, "Understanding the Oral-Systemic Connection: From Intensive Care to Long-term Care", in which she presents new information about dry mouth.

"The number of xerostomia cases has increased greatly over time because people are taking more and more medications," said Kleinman. "General dentists are seeing this trend in their offices, which is why they are trying to learn all they can about this condition. The more they know, the better they will be at diagnosing and treating patients."

There are more than 400 prescription and non-prescription drugs associated with xerostomia, according to Raymond K. Martin, DDS, MAGD. "Anti-depressants, painkillers, diuretics, antihistamines, tranquilizers and anti-hypersensitives can all contribute to dry mouth," said Dr. Martin. "People who take several of these medications are more susceptible."

As indicated by the AGD survey, the most common symptoms reported by patients include constant thirst and difficulty eating, swallowing, or speaking. Foamy or stringy saliva, irritation of the tongue, burning of the tissues inside the mouth, painful ulcerations and dentin hypersensitivity (extreme sensitivity in one or more teeth) are also dry mouth symptoms. Over time, xerostomia sufferers may experience extensive tooth decay, tooth loss or gingivitis (gum disease) due to the lack of saliva.

Out of the nearly 500 general dentists who responded, 89 percent believe prescription medications are the primary contributor to dry mouth. Aging, dehydration and salivary gland disease were also cited as major contributors. The survey of AGD members also revealed that:

- Approximately two-thirds consider dry mouth to be a very serious condition, as it relates to the promotion of tooth decay;
- Approximately 68 percent say constant thirst is the most common symptom communicated by patients; 44 percent say patients have difficulty eating, swallowing or speaking;
- More than 92 percent report that patients attempt to increase salivary production by drinking water; less than 58 percent say patients try taking over-the-counter saliva substitutes, chewing sugar free gum, or sucking on hard candy; and
- More than 60 percent of those surveyed consider diagnosing a patient with xerostomia after he or she exhibits or reports symptoms of dry mouth.

Xerostomia can be a side effect of a variety of diseases and medical conditions, including HIV/AIDS, Alzheimer's disease, Sjögren's syndrome, anemia, rheumatoid arthritis, hypertension, diabetes, Parkinson's disease, cystic fibrosis, stroke and mumps. Certain cancer treatments, nerve damage, dehydration, smoking and chewing tobacco have also been connected with dry mouth.

"It's not always easy to diagnose xerostomia because of the subjective nature of the condition," said Gigi Meinecke, DMD, FAGD. "That is why it's so important for patients to discuss symptoms with their dentist, even if they do not experience them on the day of the office visit."

**Public release date: 10-Jul-2009**

## **INCREASE IN THYROID CANCER NOT EXPLAINED BY SCREENING ALONE**

Studies have reported an increasing incidence of thyroid cancer since 1980. One possible explanation for this trend is increased detection through more widespread and aggressive use of screening tests. Researchers at the American Cancer Society analyzed thyroid cancer incidence between 1988 and 2005 using the National Cancer Institute's (NCI's) Surveillance Epidemiology and End Results (SEER) dataset. They found incidence rates increased for all sizes of tumors, suggesting that screening is not the only explanation for the rise. The highest rate of increase was for primary tumors smaller than 1.0 cm, which rose nearly 10 percent per year among men from 1997 and 2005, and nearly 9 percent/year from 1988 to 2005 among women. Incidence of tumors 4 cm or larger increased more than 3.5 percent per year from 1988 to 2005 among men and 5.7 percent per year from 1988 to 2005 among women. The authors conclude that incidence rates of differentiated thyroid cancers of all sizes increased between 1988 and 2005 in both men and women, and that the increased incidence across all tumor sizes suggests that increased detection through testing is not the sole explanation. Other explanations, including environmental influences and molecular pathways, should be investigated.

Article: "Increasing Incidence of Differentiated Thyroid Cancer in the US (1988-2005)." Amy. Y. Chen, Ahmedin Jemal, and Elizabeth M. Ward. *CANCER*; Published Online: July 13, 2009 (DOI: 10.1002/cncr.24416); Print Issue Date: August 15, 2009

**Public release date: 8-Jul-2009**

## **Pesticide levels in blood linked to Parkinson's disease, researchers find**

DALLAS — July 13, 2009 — People with Parkinson's disease have significantly higher blood levels of a particular pesticide than healthy people or those with Alzheimer's disease, researchers at UT Southwestern Medical Center have found.

In a study appearing in the July issue of *Archives of Neurology*, researchers found the pesticide beta-HCH (hexachlorocyclohexane) in 76 percent of people with Parkinson's, compared with 40 percent of healthy controls and 30 percent of those with Alzheimer's.

The finding might provide the basis for a beta-HCH blood test to identify individuals at risk for developing Parkinson's disease. The results also point the way to more research on environmental causes of Parkinson's.

"There's been a link between pesticide use and Parkinson's disease for a long time, but never a specific pesticide," said Dr. Dwight German, professor of psychiatry at UT Southwestern and a senior author of the paper. "This is particularly important because the disease is not diagnosed until after significant nerve damage has occurred. A test for this risk factor might allow for early detection and protective treatment."

About 1 million people in the U.S. have Parkinson's, a number expected to rise as the population ages. The disease occurs when brain cells in particular regions die, causing tremors, cognitive problems and a host of other symptoms.

The study involved 113 participants, ages 50 to 89. Fifty had Parkinson's, 43 were healthy and 20 had Alzheimer's. The researchers tested the subjects' blood for 15 pesticides known as organochlorines.

These pesticides, which include the well-known DDT (dichlorodiphenyltrichloroethane), were widely used in the U.S. from the 1950s to the 1970s but are more tightly regulated now. They persist in the environment for years without breaking down. In the body, they dissolve in fats and are known to attack the type of brain nerves that die in Parkinson's disease, the researchers said.

"Much higher levels of the beta-HCH were in the air, water and food chain when the Parkinson's patients were in their 20s and 30s," Dr. German said. "Also, the half-life of the pesticide is seven to eight years, so it stays in the body for a long time."

Parkinson's disease is more common among rural men than other demographic groups, but it is not a matter of a single factor causing the devastating disease, Dr. German said.

"Some people with Parkinson's might have the disease because of exposure to environmental pesticides, but there are also genes known to play a role in the condition," Dr. German said.

Although the current study points to an interesting link between the pesticide beta-HCH and Parkinson's, there could be other pesticides involved with the disease, he said.

For example, the pesticide lindane often contains beta-HCH, but lindane breaks down faster. Beta-HCH might simply be a sign that someone was exposed to lindane, with lindane actually causing the damage to the brain, the researchers said.

In future research, Dr. German hopes to test patients from a wider geographical area and to measure pesticide levels in post-mortem brains. He and his team also are collecting blood samples from both patients with Parkinson's and their spouses to see if a genetic difference might be making the one with Parkinson's more susceptible to pesticides than the other.

Other UT Southwestern researchers involved in the study were Dr. Pdraig O'Suilleabhain, associate professor of neurology; Dr. Ramón Diaz-Arrastía, professor of neurology; and Dr. Joan Reisch, professor of clinical sciences. Researchers from the Robert Wood Johnson Medical School, including lead author Dr. Jason Richardson, and the Environmental and Occupational Health Sciences Institute in New Jersey also participated in the study.

The study was funded by the National Institute of Environmental Health Sciences, the National Institute on Aging, the Dallas Area Parkinsonism Society, Rowe & Co. Inc., the Dallas Foundation and the Michael J. Fox Foundation for Parkinson's Research.

Visit [www.utsouthwestern.org/neurosciences](http://www.utsouthwestern.org/neurosciences) to learn more about UT Southwestern's clinical services in neurosciences, including psychiatry.

**Public release date: 13-Jul-2009**

## **Probiotics help gastric-bypass patients lose weight more quickly, Stanford study shows**

STANFORD, Calif. — New research from the Stanford University School of Medicine and Stanford Hospital & Clinics suggests that the use of a dietary supplement after Roux-en-Y gastric bypass surgery can help obese patients to more quickly lose weight and to avoid deficiency of a critical B vitamin.

In a study published in the July issue of the *Journal of Gastrointestinal Surgery*, John Morton, MD, associate professor of surgery at the medical school, showed that patients who take probiotics after the gastric-bypass procedure tend to shed more pounds than those who don't take the supplements. Probiotics are the so-called "good" bacteria found in yogurt as well as in over-the-counter dietary supplements that help in the digestion of food.

"Surprisingly, the probiotic group attained a significantly greater percent of excess weight loss than that of control group," said Morton, who wrote the paper with lead author Gavitt Woodard, a third-year medical student, and five other medical students at the Surgery Center for Outcomes Research and Evaluation in Stanford's Department of Surgery. Morton has performed more than 1,000 of these bypasses at Stanford Hospital & Clinics.

The researchers followed 44 patients on whom Morton had performed the procedure from 2006 to 2007. Patients were randomized into either a probiotic or a control group. Both groups received the same bariatric

medical care and nutritional counseling, as well as the support of weight-loss study groups. Both groups also were allowed to consume yogurt, a natural source of probiotics. In addition, the probiotic group consumed one pill per day of Puritan's Pride, a probiotic supplement that is available online and in many stores. Morton has no financial ties to the company that makes the supplement.

The study showed that at three months, the probiotics group registered a 47.6 percent weight loss, compared with a 38.5 percent for the control group.

The study also found that levels of vitamin B-12 were higher in the patients taking probiotics — a significant finding because patients often are deficient in B-12 after gastric-bypass surgery. The probiotics group had B-12 levels of 1,214 picograms per milliliter at three months, compared with the control group's levels of 811 pg/mL.

Morton said he now recommends probiotic supplements to his patients, and he plans to continue to look for ways to enhance the outcomes from the procedure.

Roughly 15 million Americans are morbidly obese, and bypass surgery is becoming an increasingly common treatment for the problem. Some 150,000 Americans who have a body mass index of more than 40 — who are typically at least 100 pounds overweight — have the procedure each year.

Morton said the study was prompted by the fact that some patients have problems eating after gastric-bypass surgery. "For some reason, the food doesn't go down right," he said. When no anatomical reasons could be found for blockages, he hypothesized that a build-up of bacteria in the intestine — bacterial overgrowth — might be the culprit.

"Bacterial overgrowth can be bad in that it changes your motility, how you empty," Morton said. "A lot of people aren't aware that we all carry about a lot of bacteria in our intestines and that they're extremely helpful in aiding digestion. And I thought, 'Well, if we give these patients probiotics, then maybe we can improve these symptoms.'

"Part of the obesity puzzle may be due to the kind of bacteria you have in your intestine," he said.

**Public release date: 8-Jul-2009**

## **Asian Spice Could Reduce Breast Cancer Risk in Postmenopausal Women Exposed to Hormone Replacement Therapy, MU Study Finds**

July 13, 2009

COLUMBIA, Mo. - Previous studies have found that postmenopausal women who have taken a combined estrogen and progestin hormone replacement therapy have increased their risk of developing progestin-accelerated breast tumors. Now, University of Missouri researchers have found that curcumin, a popular Indian spice derived from the turmeric root, could reduce the cancer risk for women after exposure to hormone replacement therapy.

"Approximately 6 million women in the United States use hormone replacement therapy to treat the symptoms of menopause," said Salman Hyder, the Zalk Endowed Professorship in Tumor Angiogenesis and professor of biomedical sciences in the College of Veterinary Medicine and the Dalton Cardiovascular Research Center. "This exposure to progestin will predispose a large number of post-menopausal women to future development of breast cancer. The results of our study show that women could potentially take curcumin to protect themselves from developing progestin-accelerated tumors."

In the study, researchers found that curcumin delayed the first appearance, decreased incidence and reduced multiplicity of progestin-accelerated tumors in an animal model. Curcumin also prevented the appearance

of gross morphological abnormalities in the mammary glands. In previous studies, MU researchers showed that progestin accelerated the development of certain tumors by increasing production of a molecule called VEGF that helps supply blood to the tumor. By blocking the production of VEGF, researchers could potentially reduce the proliferation of breast cancer cells. Curcumin inhibits progestin-induced VEGF secretion from breast cancer cells, Hyder said.

"Curcumin and other potential anti-angiogenic compounds should be tested further as dietary chemopreventive agents in women already exposed to hormone replacement therapy containing estrogen and progestin in an effort to decrease or delay the risk of breast cancer associated with combined hormone replacement therapy," Hyder said.

The study, "Curcumin delays development of MPA-accelerated DMBA-induced mammary tumors," has been accepted for publication in *Menopause*, a journal of the North American Menopause Society. It was coauthored by Hyder; Candace Carroll, graduate student of biomedical sciences; Cynthia Besch-Williford, associate professor of veterinary pathobiology in the MU College of Veterinary Medicine; and Mark Ellersieck, professor and researcher in the MU Experiment Station Statistics

**Public release date: 14-Jul-2009**

## **Hormone therapy use associated with increased risk of ovarian cancer**

CHICAGO – Compared with women who have never taken hormone therapy, those who currently take it or who have taken it in the past are at increased risk of ovarian cancer, regardless of the duration of use, the formulation, estrogen dose, regimen or route of administration, according to a study in the July 15 issue of *JAMA*.

Primary prevention of ovarian cancer is challenging because little is known about its cause. Studies have suggested an increased risk of ovarian cancer among women taking postmenopausal hormone therapy (HT), according to background information in the article. Data have been limited on the differing effects of formulations, regimens and routes of administration.

Lina Steinrud Mørch, M.Sc., of Rigshospitalet, Copenhagen University, Denmark, and colleagues conducted a study to examine the risk of ovarian cancer associated with hormone therapy use. The study included all Danish women age 50 through 79 years from 1995 through 2005 through linkage to Danish national registers. Prescription data from the National Register of Medicinal Product Statistics provided individually updated information on HT use. The National Cancer Register and Pathology Register provided ovarian cancer incidence data. The analysis included a total of 909,946 women without hormone-sensitive cancer or who had not had both ovaries removed. At the end of follow-up, 63 percent of the women had not been taking HT, 22 percent were previous users of hormones, and 9 percent current users of hormones. Among the current users, 46 percent had used hormones for more than 7 years.

During an average of 8 years of follow-up, 3,068 ovarian cancers were detected. Of these, 2,681 were epithelial tumors (a type of ovarian cancer). Compared with never users, current users of HT had an overall 38 percent increased risk of ovarian cancer. When restricting the analyses to epithelial ovarian cancer, the relative risk among current HT users was 44 percent higher, with previous HT users having a 15 percent increased risk compared with women who had never used HT. The risk for ovarian cancer and epithelial ovarian cancer did not increase significantly with increasing durations of HT.

The risk of ovarian cancer declined with longer time since last HT use. The risk of ovarian cancer did not differ significantly by formulation, regimen, type of progestin or route of administration.

The absolute risk indicated approximately 1 extra ovarian cancer for roughly 8,300 women taking hormone

therapy each year. "If this association is causal, use of hormones has resulted in roughly 140 extra cases of ovarian cancer in Denmark over the mean follow-up of 8 years, i.e., 5 percent of the ovarian cancers in this study. Even though this share seems low, ovarian cancer remains highly fatal, so accordingly this risk warrants consideration when deciding whether to use HT," the authors write.

**Public release date: 14-Jul-2009**

## **Study demonstrates the anti-inflammatory properties of pine bark extract**

### **Pycnogenol found to inhibit pain and inflammation causing enzymes**

(July 15, 2009) – HOBOKEN, NJ – A recent study published in *International Immunopharmacology*, reveals why Pycnogenol® (pic-noj-en-all), an antioxidant plant extract from the bark of the French maritime pine tree, is effective for reducing inflammation and soothing pain associated with various health problems. Dr. Raffaella Canali of the National Research Institute on Food and Nutrition in Rome, Italy, found that Pycnogenol® inhibits the generation of COX-2 and 5-LOX, two naturally occurring enzymes associated with a host of inflammatory conditions.

"This study reveals that Pycnogenol can actually decrease pain and reduce inflammatory conditions, as has been previously reported, by shutting down the production of specific enzymes involved with inflammation," said Dr. Canali.

Inflammation is a tightly controlled, concerted action of immune cells fighting infections, irritations and injuries. When inflammation goes out of control it may target the body's own tissue such as in arthritis or asthma. The worst known cases are the auto-immune diseases.

The study investigated healthy volunteers ranging from ages 35-50, who consumed Pycnogenol® tablets (150 mg) for five consecutive days in the morning before breakfast. Blood was drawn before and after supplementation to investigate how immune cells respond towards pro-inflammatory stimuli. The behavior of specific white blood cells (leukocytes) for generating a repertoire of enzymes in inflammatory condition was tested by real-time PCR. The gene expression of enzymes COX-2, 5-LOX, FLAP and COX-1 were monitored and the products these enzymes generate, prostaglandins and leukotrienes, were quantified.

A baseline study revealed that the volunteers' immune cells rapidly initiated production of COX-2, 5-LOX and FLAP enzymes upon pro-inflammatory stimulation. Taking Pycnogenol® almost entirely subdued COX-2, 5-LOX and FLAP induction in the immune cells of volunteers. Control studies showed that Pycnogenol® did not have an effect on generation of the COX-1 enzyme, thus the potential for typical NSAID side effects is defied. While Pycnogenol® is not a COX-2-specific inhibitor; it blocks the COX-2 enzyme production during inflammation only. There are COX-2 enzymes not involved in inflammation in other organs such as the kidneys, where it has important physiologic functions.

"Standard NSAID medications reduce the production of prostaglandins by COX enzymes for lowering the pain," explains Dr. Canali. "In contrast, Pycnogenol® turns to the root of the problem, completely stopping the production of COX-2 in inflammation. Thus far, Pycnogenol® seems to be a unique tool for modulating inflammatory processes."

These pharmacologic findings are consistent with past clinical trials of Pycnogenol® that showed significantly lowered leukotriene levels in asthmatic patients, a condition originating from 5-LOX. Three recent clinical trials also showed pain relief and a reduced need for pain medication in arthritis patients after taking Pycnogenol®, results that are linked to COX-2 inhibition. One arthritis study showed a significant reduction of inflammatory marker C-reactive protein. Pycnogenol® has been shown to inhibit inflammation in several dysmenorrhoea studies and also a reduction in skin inflammation related to sunburn and acne.

**Public release date: 15-Jul-2009**

## **New evidence that popular dietary supplement may help prevent, treat cataracts**

Researchers are reporting evidence from tissue culture experiments that the popular dietary supplement carnosine may help to prevent and treat cataracts, a clouding of the lens of the eye that is a leading cause of vision loss worldwide. The study is scheduled for the July 28 edition of ACS' *Biochemistry*, a weekly journal.

In the new study, Enrico Rizzarelli and colleagues note that the only effective treatment for cataracts is surgical replacement of the lens, the clear disc-like structure inside the eye that focuses light on the nerve tissue in the back of the eye. Cataracts develop when the main structural protein in the lens, alpha-crystallin, forms abnormal clumps. The clumps make the lens cloudy and impair vision. Previous studies hinted that carnosine may help block the formation of these clumps.

The scientists exposed tissue cultures of healthy rat lenses to either guanidine — a substance known to form cataracts — or a combination of guanidine and carnosine. The guanidine lenses became completely cloudy, while the guanidine/carnosine lenses developed 50 to 60 percent less cloudiness. **Carnosine also restored most of the clarity to clouded lenses.** The results demonstrate the potential of using carnosine for preventing and treating cataracts, the scientists say.

**Public release date: 16-Jul-2009**

## **Baking soda: For cooking, cleaning and kidney health?**

### **Sodium bicarbonate appears to slow progression of chronic kidney disease**

A daily dose of sodium bicarbonate—baking soda, already used for baking, cleaning, acid indigestion, sunburn, and more—slows the decline of kidney function in some patients with advanced chronic kidney disease (CKD), reports an upcoming study in the *Journal of the American Society of Nephrology (JASN)*. "This cheap and simple strategy also improves patients' nutritional status, and has the potential of translating into significant economic, quality of life, and clinical outcome benefits," comments Magdi Yaqoob, MD (Royal London Hospital).

The study included 134 patients with advanced CKD and low bicarbonate levels, also called metabolic acidosis. One group received a small daily dose of sodium bicarbonate in tablet form, in addition to their usual care. For this group, the rate of decline in kidney function was greatly reduced—about two-thirds slower than in patients. "In fact, in patients taking sodium bicarbonate, the rate of decline in kidney function was similar to the normal age-related decline," says Yaqoob.

Rapid progression of kidney disease occurred in just nine percent of patients taking sodium bicarbonate, compared to 45 percent of the other group. Patients taking sodium bicarbonate were also less likely to develop end-stage renal disease (ESRD) requiring dialysis.

Patients taking sodium bicarbonate also had improvement in several measures of nutrition. Although their sodium levels went up, this didn't lead to any problems with increased blood pressure.

Low bicarbonate levels are common in patients with CKD and can lead to a wide range of other problems. "This is the first randomized controlled study of its kind," says Yaqoob. "A simple remedy like sodium

bicarbonate (baking soda), when used appropriately, can be very effective."

The researchers note some important limitations of their study—there was no placebo group and the researchers were aware of which patients were receiving sodium bicarbonate. "Our results will need validation in a multicenter study," says Yaqoob.

**Public release date: 17-Jul-2009**

## **Baby bathwater contains fragrance allergens**

A group of chemists from the University of Santiago de Compostela (USC) has developed a method to quantify the fragrance allergens found in baby bathwater. The researchers have analysed real samples and detected up to 15 allergen compounds in cosmetics and personal hygiene products.

A team of scientists from the Department of Analytical Chemistry, Nutrition and Bromatology at the USC has developed a method to detect and quantify the 15 most common fragrance allergens included in soap, gel, cologne and other personal hygiene products.

"Applying the method to eight real samples obtained from the daily baths of a series of babies aged between six months and two years old, we discovered the presence of all the compounds under study in at least one of the samples," co-author of the study published this month in *Analytical and Bioanalytical Chemistry*, María Llompart, explained to SINC.

The scientists found at least six of the 15 compounds in all the samples. In some cases, concentrations were "extremely high", exceeding 100ppm (parts per million = nanograms/millilitre). Some of the substances that appeared were benzyl salicylate, linalol, coumarin and hydroxycitronellal.

"The presence and levels of these chemical agents in bathwater should be cause for concern," Llompart said, "bearing in mind that babies spend up to 15 minutes or more a day playing in the bath and that they can absorb these and other chemicals not only through their skin, but also by inhalation and often ingestion, intentional or not."

### **New Method to Detect Fragrances**

Allergens were able to be detected due to the high level of sensitivity of the method, which for the first time applies the Solid-Phase Micro Extraction (SPME) technique to determining the ingredients of cosmetics and child hygiene products. This technique makes it possible to concentrate and isolate chemical components from a sample by absorbing them into fibres with a certain coating.

The researchers have also employed gas chromatography to separate compounds and mass spectrometry to identify and measure the abundance of each of the fragrances.

European regulations stipulate that the presence of such substances should be indicated on the label of the product when levels exceed a certain limit (0.1 or 0.01%, depending on the type of compound), but some associations believe these limits are excessively tolerant, particularly where child hygiene and baby and child care products are concerned.

**Public release date: 17-Jul-2009**

## **Healing power of aloe vera proves beneficial for teeth and gums, too**

CHICAGO (July 17, 2009) - The aloe vera plant has a long history of healing power. Its ability to heal burns and cuts and soothe pain has been documented as far back as the 10th century. Legend has it that

Cleopatra used aloe vera to keep her skin soft. The modern use of aloe vera was first recognized in the 1930s to heal radiation burns. Since then, it has been a common ingredient in ointments that heal sunburn, minor cuts, skin irritation, and many other ailments. Recently, aloe vera has gained some popularity as an active ingredient in tooth gel. Similar to its use on skin, the aloe vera in tooth gels is used to cleanse and soothe teeth and gums, and is as effective as toothpaste to fight cavities, according to the May/June 2009 issue of *General Dentistry*, the Academy of General Dentistry's (AGD) clinical, peer-reviewed journal.

**Aloe vera tooth gel is intended to perform the same function as toothpaste, which is to eliminate pathogenic oral microflora—disease-causing bacteria—in the mouth.**

The ability of aloe vera tooth gel to successfully perform that function has been a point of contention for some dental professionals. However, research presented in *General Dentistry* may alleviate that concern.

**The study compared the germ-fighting ability of an aloe vera tooth gel to two commercially popular toothpastes and revealed that the aloe vera tooth gel was just as effective, and in some cases more effective, than the commercial brands at controlling cavity-causing organisms.**

Aloe latex contains anthraquinones, which are chemical compounds that are used in healing and arresting pain because they are anti-inflammatory in nature. But, because aloe vera tooth gel tends to be less harsh on teeth, as it does not contain the abrasive elements typically found in commercial toothpaste, it is a great alternative for people with sensitive teeth or gums. But buyers must beware. Not all aloe vera tooth gel contains the proper form of aloe vera. Products must contain the stabilized gel that is located in the center of the aloe vera plant in order to be effective. Products must also adhere to certain manufacturing standards. Dilip George, MDS, co-author of the study, explains that aloe "must not be treated with excessive heat or filtered during the manufacturing process, as this destroys or reduces the effects of certain essential compounds, such as enzymes and polysaccharides." Dr. George suggests that consumers consult non-profit associations such as the International Aloe Science Council to see what products have received the organization's seal of quality.

Although there are more than 300 species of the plant, only a few have been used for medicinal purposes. "Thankfully, consumers with sensitive teeth or gums have a number of choices when it comes to their oral health, and aloe vera is one of them," says AGD spokesperson Eric Shapria, MS, DDS, MAGD, MA. "If they are interested in a more alternative approach to oral hygiene, they should speak with their dentist to ensure that it meets the standards of organized dentistry, too."

**Public release date: 20-Jul-2009**

## **Prenatal exposure to environmental pollutants affect a child's intelligence quotient or IQ**

July 20, 2009 -- Prenatal exposure to environmental pollutants known as polycyclic aromatic hydrocarbons (PAHs) can adversely affect a child's intelligence quotient or IQ, according to new research by the the Columbia Center for Children's Environmental Health (CCCEH) at the Mailman School of Public Health. PAHs are chemicals released into the air from the burning of coal, diesel, oil and gas, or other organic substances such as tobacco. In urban areas motor vehicles are a major source of PAHs. The study findings are published in the August 2009 issue of *Pediatrics*.

The study, funded by the National Institute of Environmental Health Sciences (NIEHS), a component of the National Institutes of Health, the U.S. Environmental Protection Agency and several private foundations, found that children exposed to high levels of PAHs in New York City had full scale and verbal IQ scores that were 4.31 and 4.67 points lower, respectively than those of less exposed children. High PAH levels were defined as above the median of 2.26 nanograms per cubic meter (ng/m<sup>3</sup>).

"These findings are of concern because these decreases in IQ could be educationally meaningful in terms of school performance," says Frederica Perera, DrPH, professor of Environmental Health Sciences and director of the CCCEH at Columbia University Mailman School of Public Health and study lead author. "The good news is that we have seen a decline in air pollution exposure in our cohort since 1998, testifying to the importance of policies to reduce traffic congestion and other sources of fossil fuel combustion byproducts."

The study included children who were born to non-smoking Black and Dominican American women age 18 to 35 who resided in Washington Heights, Harlem or the South Bronx in New York. The children were followed from in utero to 5 years of age. The mothers wore personal air monitors during pregnancy to measure exposure to PAHs and they responded to questionnaires.

At 5 years of age, 249 children were given an intelligence test known as the Wechsler Preschool and Primary Scale of the Intelligence, which provides verbal, performance and full-scale IQ scores. The researchers developed models to calculate the associations between prenatal PAH exposure and IQ. They accounted for other factors such as second-hand smoke exposure, lead, mother's education and the quality of the home caretaking environment. Study participants exposed to air pollution levels below the average were designated as having "low exposure," while those exposed to pollution levels above the average were identified as "high exposure." A total of 140 children were classified as having high PAH exposure.

"The decrease in full-scale IQ score among the more exposed children is similar to that seen with low-level lead exposure," noted Dr. Perera. "This finding is of concern because IQ is an important predictor of future academic performance, and PAHs are widespread in urban environments and throughout the world. Fortunately, airborne PAH concentrations can be reduced through currently available controls, alternative energy sources and policy interventions."

**Public release date: 21-Jul-2009**

## **Are we what our mothers ate?**

Timeframe before conception may be linked to disease later in life

PITTSBURGH, July 21 – Mothers' health in the days and weeks prior to becoming pregnant may determine the health of offspring much later in life, according to results of studies reported at the annual meeting of the Society for the Study of Reproduction, which takes place July 18 to 22 at the David L. Lawrence Convention Center in Pittsburgh. These studies demonstrate that maternal nutrition, protein intake and level of fat in the diet may cause epigenetic changes in the developing fetus that can have long-term health consequences.

Summaries of their findings are as follows:

### **Too Much of a Sweet Thing? Maternal Diabetes and Embryo Development**

The time between ovulation and conception may be a critical one for maternal and fetal health, according to Kelle Moley, M.D., Washington University School of Medicine. In mouse studies, she found that subtle differences in maternal metabolism had long-lasting effects. Indeed, when Dr. Moley transferred embryos from a diabetic mouse into a non-diabetic mouse shortly after egg implantation, she noted neural tube defects, heart defects, limb deformities and growth defects in offspring. These findings indicate that we may need to re-direct our ideas about maternal health to the time prior to pregnancy, she says.

### Take Your Vitamins Before Becoming Pregnant

Are we encouraging pregnant women to take vitamins when it may be too late to impact the health of a growing fetus? According to Kevin Sinclair, Ph.D., University of Nottingham, maternal nutrition even at the time of conception can alter fetal development. In studies with sheep and rodents, he found that offspring of mothers with vitamin B12 and folic acid deficiencies were fatter, became insulin resistant and had higher blood pressure by the time they reached middle-age, demonstrating that early molecular changes may not manifest themselves for many years.

### Low Protein Diet May Lead to "Jumpy" Offspring

Low protein levels in female mice during the first few moments of conception, when the egg is still dividing, caused abnormal growth, cardiovascular disease, high blood pressure and jumpy behavior in their offspring. According to Tom Fleming, Ph.D., University of Southampton, mice born to mothers with low protein grew bigger – extracting as much nutrients as they could to compensate for poor nutrition while in the womb.

### Beyond Genetics: How Dormant Memories Can Impact Later-Life Events

According to epigenetic theory, changes in the genome can happen at any time through the impact of environmental factors on the expression of genes over time. One of the most critical periods is early life when epigenetic memories are created that may impact a person's susceptibility to disease later in life, says Shuk-mei Ho, Ph.D., University of Cincinnati Medical Center. According to her research, these "memories" may remain dormant until an environmental trigger brings them to the surface, modifying risk for disease.

---

**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.**