



The Vitamin & Herb Stores

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Omega-6 fatty acids: Make them a part of heart-healthy eating

DALLAS, Jan. 27, 2009 — Omega-6 fatty acids – found in vegetable oils, nuts and seeds – are a beneficial part of a heart-healthy eating plan, according to a science advisory published in *Circulation: Journal of the American Heart Association*.

The association recommends that people aim for at least 5 percent to 10 percent of calories from omega-6 fatty acids. Most Americans actually get enough of these oils in the foods they are currently eating, such as nuts, cooking oils and salad dressings, the advisory reports. Recommended daily servings of omega-6 depend on physical activity level, age and gender, but range from 12 to 22 grams per day.

Omega-6, and the similarly-named omega-3 fatty acids (found in fattier fish such as tuna, mackerel and salmon), are called polyunsaturated fatty acids (PUFA), and can have health benefits when consumed in the recommended amounts, especially when used to replace saturated fats or trans fats in the diet. Omega-6 and omega-3 PUFA play a crucial role in heart and brain function and in normal growth and development. PUFA are “essential” fats that your body needs but can’t produce, so you must get them from food.

For more on good fats vs. bad fats, visit www.AmericanHeart.org/FacetheFats

“Of course, as with any news about a single nutrient, it’s important to remember to focus on an overall healthy dietary pattern – one nutrient or one type of food isn’t a cure-all,” said William Harris, Ph.D., lead author of the advisory. “Our goal was simply to let Americans know that foods containing omega-6 fatty acids can be part of a healthy diet, and can even help improve your cardiovascular risk profile.”

The American Heart Association’s dietary recommendations suggest a broadly defined healthy eating pattern over time – with an emphasis on fruits, vegetables, high-fiber whole grains, lean meat, poultry, and fish twice a week. Diets rich in fruits, vegetables and whole grains have been associated in a large number of studies with reduced cardiovascular risk.

Linoleic acid (LA) is the main omega-6 fatty acid in foods, accounting for 85 percent to 90 percent of the dietary omega-6 PUFA.

There has been some debate within the nutrition community regarding the benefits of omega-6 based on the belief that they may promote inflammation, thus increasing cardiovascular risk. “That idea is based more on assumptions and extrapolations than on hard data,” said Harris, a research professor for the Sanford School of Medicine at the University of South Dakota and director of the Metabolism and Nutrition Research Center at Sanford Research/USD.

The linking of omega-6 intake to inflammation stems from the fact that arachidonic acid (AA), which can be formed from LA, is involved in the early stages of inflammation. However, the advisory explains that AA and LA also give rise to anti-inflammatory molecules.

For example, in the cells that form the lining of blood vessels, omega-6 PUFA have anti-inflammatory properties, suppressing the production of adhesion molecules, chemokines and interleukins — all of which are key mediators of the atherosclerotic process. “Thus, it is incorrect to view the omega-6 fatty acids as ‘pro-inflammatory,’” Harris explained. “Eating less LA will not lower tissue levels of AA (the usual rationale for reducing LA intakes) because the body tightly regulates the synthesis of AA from LA.”

The advisory reviewed a meta-analysis of randomized, controlled trials, and more than two dozen observational, cohort, case/control and ecological reports.

Observational studies showed that people who ate the most omega-6 fatty acids usually had the least heart disease. Other studies examined blood levels of omega-6 in heart patients compared with healthy people and found that patients with heart disease had lower levels of omega-6 in their blood.

In controlled trials in which researchers randomly assigned people to consume diets containing high versus low levels of omega-6 and then recorded the number of heart attacks over several years, those assigned to the higher omega-6 diets had less heart disease.

A meta-analysis of several trials indicated that replacing saturated fats with PUFA lowered risk for heart disease events by 24 percent. "When saturated fat in the diet is replaced by omega-6 PUFA, the blood cholesterol levels go down," Harris said. "This may be part of the reason why higher omega-6 diets are heart-healthy."

Co-authors are: Dariush Mozaffarian, M.D.; Eric Rimm, D.Sc.; Penny Kris-Etherton, Ph.D.; Lawrence Rudel, Ph.D.; Lawrence Appel, M.D.; Marguerite Engler, Ph.D.; Mary Engler, Ph.D.; and Frank Sacks, M.D. Author disclosures are on the manuscript.

Ralphs Note - It was not long ago, they said avoid omega-6 fats. They finally drew a distinction between fried omega-6 and non fried.

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Hypertension and cholesterol medications present in water released into the St. Lawrence River

Universite de Montreal research team on the water upstream and downstream from the Montreal wastewater

This press release is available in French.

Montreal, January 26, 2009 – A study conducted by Université de Montréal researchers on downstream and upstream water from the Montreal wastewater treatment plant has revealed the presence of chemotherapy products and certain hypertension and cholesterol medications.

Bezafibrate (cholesterol reducing medication), enalapril (hypertension medication), methotrexate and cyclophosphamide (two products used in the treatment of certain cancers) have all been detected in wastewater entering the Montreal treatment station. However, only bezafibrate and enalapril have been detected in the treated water leaving the wastewater treatment plant and in the surface water of the St. Lawrence River, where the treated wastewater is released.

This study was conducted due to the sharp rise in drug consumption over the past few years. In 1999, according to a study by IMS Health Global Services, world drug consumption amounted to \$342 billion. In 2006 that figure doubled to \$643 billion. A significant proportion of the drugs consumed are excreted by the human body in urine and end up in municipal wastewater. **Chemotherapy products, such as methotrexate, are excreted by the body practically unchanged (80 to 90 percent in their initial form).**

Chemotherapy for fish?

The pharmaceutical compounds studied were chosen because of the large quantities prescribed by physicians. "Methotrexate and cyclophosphamide are two products very often used to treat cancer and are more likely to be found in water," says Sébastien Sauvé, a professor of environmental chemistry at the Université de Montréal. "Even though they treat cancer, these two products are highly toxic. This is why we wanted to know the extent to which the fauna and flora of the St. Lawrence are exposed to them."

Method and quantities

Professor Sauvé's team validated a rapid detection method (On-line SPE-LC-MS/MS) (1) for pharmaceutical compounds under study in the raw and treated wastewater of the Montreal wastewater treatment plant.

The quantities of bezafibrate and enalapril detected in the raw wastewater, treated wastewater and surface water at the treatment station outlet are respectively 50 nanograms per litre, 35 ng L and 8 ng L for bezafibrate and 280 ng L, 240 ng L and 39ng L for enalapril.

"All in all, these quantities are minimal, yet we don't yet know their effects on the fauna and flora of the St. Lawrence," Professor Sauvé explains. "It is possible that some species are sensitive to them. Other ecotoxicological studies will be necessary. As for the chemotherapy products detected in the raw wastewater but not in the treated wastewater, one question remains: did we not detect them because the treatment process succeeded in eliminating them or because our detection method is not yet sophisticated enough to detect them?"

A new threat to the aquatic environment

The release locations of wastewaters treated by the treatment stations are the main source of drug dispersion into the environment. Because of their high polarity and their acid-base character, some of the pharmaceutical compounds studied have the potential to be transported and dispersed widely in the aquatic environment. In Montreal, the wastewater treatment station treats a water volume representing 50 percent of the water treated in Quebec and has a capacity of about 7.6 million cubic metres per day, making it the largest physicochemical treatment station in the Americas. This is why it is important to develop a simple, rapid, precise and inexpensive method, Professor Sauvé points out.

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Stream in India has record high levels of drugs

By Margie Mason
THE ASSOCIATED PRESS

PATANCHERU, India — When researchers analyzed vials of treated wastewater taken from a plant where about 90 Indian drug factories dump their residues, they were shocked. Enough of a single, powerful antibiotic was being spewed into one stream each day to treat every person in a city of 90,000.

And it wasn't just ciprofloxacin being detected. The supposedly cleaned water was a floating medicine cabinet — a soup of 21 active pharmaceutical ingredients, used in generics for treatment of hypertension, heart disease, chronic liver ailments, depression, gonorrhoea, ulcers and other ailments. Half of the drugs measured at the highest levels of pharmaceuticals ever detected in the environment, researchers say.

Those Indian factories produce drugs for much of the world, including many Americans. The result: Some of India's poor are unwittingly consuming an array of chemicals that may be harmful, and could lead to the proliferation of drug-resistant bacteria.

"If you take a bath there, then you have all the antibiotics you need for treatment," said chemist Klaus Kuemmerer at the University of Freiburg Medical Center in Germany, an expert on drug resistance in the environment who did not participate in the research. "If you just swallow a few gasps of water, you're treated for everything. The question is for how long?"

Unprecedented results

Last year, The Associated Press reported that trace concentrations of pharmaceuticals had been found in drinking water provided to at least 46 million Americans. But the wastewater downstream from the Indian plants contained 150 times the highest levels detected in the United States.

At first, Joakim Larsson, an environmental scientist at the University of Gothenburg in Sweden, **questioned whether 100 pounds a day of ciprofloxacin could really be running into the Iska Vagu stream. He was so baffled by the unprecedented results he sent the samples to a second lab for independent analysis.**

When those reports came back with similarly record-high levels, Larsson knew he was looking at a potentially serious situation. After all, some villagers fish in the stream's tributaries, while others drink from wells nearby. Livestock also depend on these watering holes.

Some locals long believed drugs were seeping into their drinking water, and new data from Larsson's study presented at a U.S. scientific conference in November confirmed their suspicions. Ciprofloxacin, the antibiotic, and the popular antihistamine cetirizine had the highest levels in the wells of six villages tested. Both drugs measured far below a human dose, but the results were still alarming.

"We don't have any other source, so we're drinking it," said R. Durgamma, a mother of four, sitting on the steps of her crude mud home a few miles downstream from the treatment plant. High drug concentrations were recently found in her well water. "When the local leaders come, we offer them water and they won't take it."

An increasing concern

Pharmaceutical contamination is an emerging concern worldwide. In its series of articles, AP documented the commonplace presence of minute concentrations of pharmaceuticals in U.S. drinking water supplies. The AP also found that trace concentrations of pharmaceuticals were almost ubiquitous in rivers, lakes and streams.

The medicines are excreted without being fully metabolized by people who take them, while hospitals and long-term-care facilities annually flush millions of pounds of unused pills down the drain. Until Larsson's research, there was consensus among researchers that drug makers weren't a source. The consequences of the India studies are worrisome.

As the AP reported last year, researchers are finding that human cells fail to grow normally in the laboratory when exposed to trace concentrations of certain pharmaceuticals. Some waterborne drugs also promote antibiotic-resistant germs, especially when — as in India — they are mixed with bacteria in human sewage. Even extremely diluted concentrations of drug residues harm the reproductive systems of fish, frogs and other aquatic species in the wild.

In the India research, tadpoles exposed to water from the treatment plant that had been diluted 500 times were nonetheless 40 percent smaller than those growing in clean water.

Far-reaching impact

The discovery of this contamination raises two key issues for researchers and policymakers: the amount of pollution and its source. Experts say one of the biggest concerns for humans is whether the discharge from the wastewater treatment facility is spawning drug resistance.

"Not only is there the danger of antibiotic-resistant bacteria evolving; the entire biological food web could be affected," said Stan Cox, senior scientist at the Land Institute, a non-profit agriculture research center in Salina, Kan. Cox has studied and written about pharmaceutical pollution in Patancheru. "If Cipro is so widespread, it is likely that other drugs are out in the environment and getting into people's bodies." Before Larsson's team tested the water at Patancheru Enviro Tech Ltd. plant, researchers largely attributed the source of drugs in water to their use, rather than their manufacture.

In the United States, the EPA says there are "well defined and controlled" limits to the amount of pharmaceutical waste emitted by drug makers.

India's environmental protections are being met at Patancheru, says Rajeshwar Tiwari, who heads the area's pollution control board. And while he says regulations have tightened since Larsson's initial research, screening for pharmaceutical residue at the end of the treatment process is not required.

Factories in the United States report on releases of 22 active pharmaceutical ingredients, the AP found by analyzing EPA data. But many more drugs have been discovered in domestic drinking water.

Possibly complicating the situation, Larsson's team also found high drug concentration levels in lakes upstream from the treatment plant, indicating potential illegal dumping — an issue both Indian pollution officials and the drug industry acknowledge has been a past problem, but one they say is much less frequent now.

M. Narayana Reddy, president of India's Bulk Drug Manufacturers Association, disputes Larsson's initial results. "I have challenged it," he said. "It is the wrong information provided by some research person." Reddy acknowledged the region is polluted but said that the contamination came from untreated human excrement and past industry abuses. He and pollution control officials also say villagers are supposed to drink clean water piped in from the city or hauled in by tankers — water a court ordered industry to provide. But locals complain of insufficient supplies, and some say they are forced to use wells. Larsson's research has created a stir among environmental experts, and his findings are widely accepted in the scientific community.

"That's really quite an incredible and disturbing level," said Renee Sharp, senior analyst at the Washington-based Environmental Working Group. "It's absolutely the last thing you would ever want to see when you're talking about the rise of antibiotic bacterial resistance in the world."

A matter of resistance

The more bacteria are exposed to a drug, the more likely that bacteria will mutate in a way that renders the drug ineffective. Such resistant bacteria can then possibly infect others who spread the bugs as they travel. Ciprofloxacin was once considered a powerful antibiotic of last resort, used to treat especially tenacious infections. But in recent years many bacteria have developed resistance to the drug, leaving it significantly less effective.

"We are using these drugs, and the disease is not being cured — there is resistance going on there," said Dr. A. Kishan Rao, a physician and environmental activist who has treated people for more than 30 years near the drug factories. He says he worries most about the long-term effects on his patients potentially being exposed to constant low levels of drugs.

Patancheru became a hub for largely unregulated chemical and drug factories in the 1980s, creating what one local newspaper has termed an "ecological sacrifice zone" with its waste. Since then, India has become one of the world's leading exporters of pharmaceuticals, and the United States — which spent \$1.4 billion on Indian-made drugs in 2007 — is its largest customer.

Ralph's Note - The greatest threat to the survival of this planet is not the hypothesis of global warming, but the contamination of this planet through these genetic altering chemicals. The total lack of political interest in this threat, is one of the greatest blunders in recent times. Chemical contamination is very real, and easily quantified. The answer to this problem does not require social engineering programs, as global warming advocates want. However, we are all being affected at this very moment by the unnecessary abuse of very simple substances. Just for the sake of pure and simple greed.

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Happiness gap' in the US narrows

Study finds Americans getting more similar in reported happiness

Happiness inequality in the U.S. has decreased since the 1970s, according to research published this month in the Journal of Legal Studies.

The study, by University of Pennsylvania economists Betsey Stevenson and Justin Wolfers, found that the American population as a whole is no happier than it was three decades ago. But happiness inequality—the gap between the happy and the not-so-happy—has narrowed significantly.

"Americans are becoming more similar to each other in terms of reported happiness," says Stevenson. "It's an interesting finding because other research shows increasing gaps in income, consumption and leisure time."

The happiness gap between whites and non-whites has narrowed by two-thirds, the study found. Non-whites report being significantly happier than they were in the early 1970s, while whites are slightly less happy. The happiness gap between men and women closed as well. Women have become less happy, while men are a little more cheerful.

One demographic area where the happiness gap increased was in educational attainment. People with a college diploma have gotten happier, while those with a high school education or less report lower happiness levels.

Stevenson and Wolfers used data collected from 1972 to 2006 through the University of Chicago's General Social Survey. Each year, participants were asked, "Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?"

The proportion of people choosing "pretty happy" has increased from 49 percent in 1972 to 56 percent in 2006. Responses of "very happy" and "not too happy" decreased in relatively equal amounts. This convergence toward the middle response closed happiness gaps in nearly all the demographic groups examined.

"The U.S. population as a whole is not getting happier," Stevenson said. "For every unhappy person who became happier, there's someone on the other side coming down."

The authors say that it's hard to pin down what exactly is causing the narrowing happiness gap. But they suggest that money probably is not the answer.

"That these trends differ from trends in both income growth and income inequality suggests that a useful explanation may lie in the nonpecuniary domain," Stevenson and Wolfers write.

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Daily school recess improves classroom behavior

All work and no play may impede learning, health and social development

January 26, 2008 — (BRONX, NY) — School children who receive more recess behave better and are likely to learn more, according to a large study of third-graders conducted by researchers at Albert Einstein College of Medicine of Yeshiva University.

The study, published in *Pediatrics*, suggests that a daily break of 15 minutes or more in the school day may play a role in improving learning, social development, and health in elementary school children. The study's principal investigator is Romina M. Barros, M.D., assistant clinical professor of pediatrics at Einstein.

Dr. Barros looked at data on approximately 11,000 third-graders enrolled in the national Early Childhood Longitudinal Study. The children, ages 8 to 9, were divided into two categories: those with no or minimal recess (less than 15 minutes a day) and those with more than 15 minutes a day. There were an equal number of boys and girls. The children's classroom behavior was assessed by their teachers using a questionnaire.

According to the American Academy of Pediatrics, free, unstructured play is essential for keeping children healthy, and for helping them reach important social, emotional, and cognitive developmental milestones. Unstructured play also helps kids manage stress and become resilient.

However, some studies indicate that children are getting less and less unstructured playtime, a trend exacerbated by the 2001 No Child Left Behind Act. "Many schools responded to No Child Left Behind by reducing the time for recess, the creative arts, and physical education in an effort to focus on reading and mathematics," says Dr. Barros.

A 2005 survey conducted by the National Center for Education Statistics showed that the 83 percent to 88 percent of children in public elementary schools have recess of some sort. But the number of recess sessions per day and the duration of the recess periods have been steadily declining. Since the 1970s, children have lost about 12 hours per week

in free time, including a 25 percent decrease in play and a 50 percent decrease in unstructured outdoor activities, according to another study.

The present study shows that children from disadvantaged backgrounds are especially affected by this trend. "This is a serious concern," says Dr. Barros. "We know that many disadvantaged children are not free to roam their neighborhoods, even their own yards, unless they are with an adult. Recess may be the only opportunity for these kids to practice their social skills with other children."

"When we restructure our education system, we have to think about the important role of recess in childhood development," adds Dr. Barros. "Even if schools don't have the space, they could give students 15 minutes of indoor activity. All that they need is some unstructured time."

Public release date: 26-Jan-2009

CUTTING SALT ISN'T THE ONLY WAY TO REDUCE BLOOD PRESSURE

Study Suggests Boosting Potassium is also Effective

MAYWOOD, Ill. -- Most people know that too much sodium from foods can increase blood pressure.

A new study suggests that people trying to lower their blood pressure should also boost their intake of potassium, which has the opposite effect to sodium.

Researchers found that the ratio of sodium-to-potassium in subjects' urine was a much stronger predictor of cardiovascular disease than sodium or potassium alone.

"There isn't as much focus on potassium, but potassium seems to be effective in lowering blood pressure and the combination of a higher intake of potassium and lower consumption of sodium seems to be more effective than either on its own in reducing the risk of cardiovascular disease," said Dr. Paul Whelton, senior author of the study in the January 2009 issue of the Archives of Internal Medicine. Whelton is an epidemiologist and president and CEO of Loyola University Health System.

Researchers determined average sodium and potassium intake during two phases of a study known as the Trials of Hypertension Prevention. They collected 24-hour urine samples intermittently during an 18-month period in one trial and during a 36-month period in a second trial. The 2,974 study participants initially aged 30-to-54 and with blood pressure readings just under levels considered high, were followed for 10-15 years

to see if they would develop cardiovascular disease. Whelton was national chair of the Trials of Hypertension Prevention.

Those with the highest sodium levels in their urine were 20 percent more likely to suffer strokes, heart attacks or other forms of cardiovascular disease compared with their counterparts with the lowest sodium levels. However this link was not strong enough to be considered statistically significant.

By contrast, participants with the highest sodium-to-potassium ratio in urine were 50 percent more likely to experience cardiovascular disease than those with the lowest sodium-to-potassium ratios. This link was statistically significant.

Most previous studies of the relationship between sodium or potassium and cardiovascular disease have had to rely on people's recall or record of what foods they eat to estimate their level of sodium consumption. This is a less precise measure of sodium intake than urine samples. In addition, many have been cross-sectional rather than follow-up studies.

The new study "is a quantum leap in the quality of the data compared to what we have had before," Whelton said.

Whelton was a member of a recent Institute of Medicine panel that set dietary recommendations for salt and potassium. The panel said healthy 19-to-50 year-old adults should consume no more than 2,300 milligrams of sodium per day -- equivalent to one teaspoon of table salt. More than 95 percent of American men and 75 percent of American women in this age range exceed this amount.

To lower blood pressure and blunt the effects of salt, adults should consume 4.7 grams of potassium per day unless they have a clinical condition or medication need that is a contraindication to increased potassium intake. Most American adults aged 31-to-50 consume only about half as much as recommended in the Institute of Medicine report. Changes in diet and physical activity should be under the supervision of a health care professional.

Good potassium sources include fruits, vegetables, dairy foods and fish. Foods that are especially rich in potassium include potatoes and sweet potatoes, fat-free milk and yogurt, tuna, lima beans, bananas, tomato sauce and orange juice. Potassium also is available in supplements.

Whelton is among the nation's top experts on high blood pressure. He has published more than 400 papers on the subject, and has been the principal investigator on more than \$100 million of studies funded by the National Institutes of Health.

Co-authors of the Archives study include Nancy Cook (first author), Julie Buring and Dr. Kathryn Rexrode of Brigham and Women's Hospital; Eva Obarzanek and Dr. Jeffrey Cutler of the National Heart, Lung and Blood Institute; Dr. Lawrence Appel of Johns Hopkins University and Shiriki Kumanyika of the University of Pennsylvania.

Public release date: 26-Jan-2009

First comprehensive paper on statins' adverse effects released

Provides evidence for reported side effects including muscle and cognitive problems
A paper co-authored by Beatrice Golomb, MD, PhD, associate professor of medicine at the University of California, San Diego School of Medicine and director of UC San Diego's Statin Study group cites nearly 900 studies on the adverse effects of HMG-CoA reductase inhibitors (statins), a class of drugs widely used to treat high cholesterol.

The result is a review paper, currently published in the on-line edition of American Journal of Cardiovascular Drugs, that provides the most complete picture to date of reported side effects of statins, showing the state of evidence for each. The paper also helps explain why certain individuals have an increased risk for such adverse effects.

"Muscle problems are the best known of statin drugs' adverse side effects," said Golomb. "But cognitive problems and peripheral neuropathy, or pain or numbness in the extremities like fingers and toes, are also widely reported." A spectrum of other problems, ranging from blood glucose elevations to tendon problems, can also occur as side effects from statins.

The paper cites clear evidence that higher statin doses or more powerful statins – those with a stronger ability to lower cholesterol – as well as certain genetic conditions, are linked to greater risk of developing side effects.

"Physician awareness of such side effects is reportedly low," Golomb said. "Being vigilant for adverse effects in their patients is necessary in order for doctors to provide informed treatment decisions and improved patient care."

The paper also summarizes powerful evidence that statin-induced injury to the function of the body's energy-producing cells, called mitochondria, underlies many of the adverse effects that occur to patients taking statin drugs.

Mitochondria produce most of the oxygen free radicals in the body, harmful compounds that "antioxidants" seek to protect against. When mitochondrial function is impaired, the

body produces less energy and more "free radicals" are produced. Coenzyme Q10 ("Q10") is a compound central to the process of making energy within mitochondria and quenching free radicals. **However, statins lower Q10 levels because they work by blocking the pathway involved in cholesterol production – the same pathway by which Q10 is produced. Statins also reduce the blood cholesterol that transports Q10 and other fat-soluble antioxidants.**

"The loss of Q10 leads to loss of cell energy and increased free radicals which, in turn, can further damage mitochondrial DNA," said Golomb, who explained that loss of Q10 may lead to a greater likelihood of symptoms arising from statins in patients with existing mitochondrial damage – since these people especially rely on ample Q10 to help bypass this damage. Because statins may cause more mitochondrial problems over time – and as these energy powerhouses tend to weaken with age— new adverse effects can also develop the longer a patient takes statin drugs.

"The risk of adverse effects goes up as age goes up, and this helps explain why," said Golomb. **"This also helps explain why statins' benefits have not been found to exceed their risks in those over 70 or 75 years old, even those with heart disease."** High blood pressure and diabetes are linked to higher rates of mitochondrial problems, so these conditions are also clearly linked to a higher risk of statin complications, according to Golomb and co-author Marcella A. Evans, of UC San Diego and UC Irvine Schools of Medicine.

The connection between statins' antioxidant properties and mitochondrial risk helps explain a complicated finding that statins can protect against the very same problems, in some people, to which they may predispose others – problems such as muscle and kidney function or heart arrhythmia.

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Fast-food diet cancels out benefits of breastfeeding in preventing asthma

Many studies have shown that breastfeeding appears to reduce the chance of children developing asthma. But a newly published study led by a University of Alberta professor has found that eating fast food more than once or twice a week negated the beneficial effects that breastfeeding has in protecting children from the respiratory disease.

The article appears online in the international journal *Clinical and Experimental Allergy* based in London, England. A number of different findings led the researchers to their

conclusion – showing links between fast food and asthma, breastfeeding and asthma, and all three together.

"Like other studies, we found that fast-food consumption was associated with asthma," said the senior author, Dr. Anita Kozyrskyj (pronounced koh-ZUHR-skee), an associate professor in the Department of Pediatrics in the U of A's Faculty of Medicine & Dentistry.

The research confirmed the findings of many other studies about the benefits of breastfeeding in relation to asthma. Kozyrskyj et al. found that breastfeeding for too short a time was linked to a higher risk of asthma, or conversely that children exclusively breastfed 12 weeks or longer as infants had a lower risk.

"But this beneficial effect was only seen in children who did not consume fast food, or only occasionally had fast food," she added.

More than half the children studied ate fast food more than twice a week.

The researchers suggested the prevalence of fast food in today's society may explain why asthma rates keep rising even though more mothers are breastfeeding.

The group did not look at why fast food might cause asthma. But the authors suggest the high fat content, and high salt levels (which can increase twitchy airways and wheezing) may be to blame.

Kozyrskyj, an authority in the area of child health and asthma research, was recruited to the University of Alberta from the University of Manitoba to assume the position of Research Chair, Maternal-Child Health and the Environment.

She conducted the study with Dr. Allan Becker while at the University of Manitoba. The team looked at about 700 Manitoba children, about 250 of whom had asthma and 475 who did not. The research was funded by the Canadian Institutes of Health Research and the analyses were conducted by Xiao-Mei Mai, a postdoctoral student at the U of M.

Kozyrskyj noted that nutrition is only one of many factors involved in asthma. "But this is an interesting finding, and we hope it will stimulate other researchers to follow up and investigate this in more depth, perhaps with a cohort study."

She was a co-author in a different study that received widespread publicity last year when the researchers reported children who received antibiotics in the first year of life were at higher risk of developing asthma later on.

Other research by Kozyrskyj, published in the journal *Allergy* last year, suggested that girls who do not drink enough milk and are overweight may be at greater risk for asthma.

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Fake internet drugs risk lives and fund terrorism, warns journal editor

People who buy fake internet drugs could be risking their lives and supporting terrorism, according to an editorial in the February issue of IJCP, the International Journal of Clinical Practice.

Editor-in-Chief Dr Graham Jackson, a UK-based Consultant Cardiologist, has called for greater public awareness of the dangers and consequences of the counterfeit drugs market, which is expected to be worth £55 billion by 2010.

"Harmful ingredients found in counterfeit medicines include arsenic, boric acid, leaded road paint, floor and shoe polish, talcum powder, chalk and brick dust and nickel" he points out.

"In one scheme, Americans buying fake Viagra on the internet were actually helping to fund Middle East terrorism, unknowingly jeopardising the lives of men and women serving in their own armed forces."

The UK's Medicines and Healthcare products Regulatory Agency estimates that nearly 62 per cent of the prescription only medicines offered on the internet, without the need for a prescription, are fakes.

"Alarmingly these include fake drugs that could have devastating consequences, like counterfeit medication for potentially fatal conditions like cancer and high blood pressure. Others can include no active ingredients or harmful ingredients like amphetamines."

Although some internet pharmacies are legitimate, a significant number are illegal and often operate internationally, selling products of unknown content or origin.

"Counterfeit drugs may originate from many different countries, where governments have little or no controls in place, and be then imported into other countries without being inspected" says Dr Jackson.

"In 2004 Pfizer investigated one Canadian online pharmacy and discovered that the domain name was hosted in Korea and registered in St Kitts. Orders placed on the web were dispatched in a plain envelope from Oklahoma City with a non-existent return address."

The challenge of combating these criminal and potentially life-threatening activities is a major concern, he says. However efforts are being hampered by a lack of resources, manpower, adequate legislation and coordination between countries.

Dr Jackson stresses that raising public awareness is essential, as lives are clearly at risk.

"Patient groups need to be motivated to educate men and women about the dangers of buying medication outside the healthcare system" he says. "Prescription only medicines are just that, so being able to buy them without a script is a sure sign of illegal practice.

"The best way to avoid counterfeit drugs is to use a reputable and regulated pharmacy that dispenses with a legal prescription."

Ralph's Note - We have the same problem with mail order vitamins.

Public release date: 27-Jan-2009

Exercise no danger for joints

Non-elite level activity does not increase risk of osteoarthritis

There is no good evidence supporting a harmful effect of exercise on joints in the setting of normal joints and regular exercise, according to a review of studies published in this month's issue of the Journal of Anatomy.

Exercise is an extremely popular leisure-time activity in many countries throughout the Western world and has for many become part of the modern lifestyle. It is widely promoted in as being beneficial for weight control, disease management in cardiovascular disease and diabetes, and for improving psychological well-being amongst an array of other benefits. In contrast, however, the lay press and community perception is also that exercise is potentially deleterious to one's joints, in particular those of the lower extremities.

Researchers from Boston, USA, and Airing, Germany, reviewed existing studies on the relationship between regular exercise and osteoarthritis (OA) and concluded that in the absence of existing joint injury there is no increased risk of OA from exercise.

"We found that in elite athletes where there was more likelihood of obtaining sports injuries, there was an increased risk of OA in the damaged joints, but in most people vigorous, low-impact exercise is beneficial for both its physical and mental benefits," said lead researcher David Hunter MD PhD, New England Baptist Hospital. "The largest modifiable risk factor for knee OA is body weight, such that each additional kilogram of body mass increases the compressive load over the knee by roughly 4kg".

One might surmise therefore that exercise to reduce body-weight, where necessary, could in fact reduce the risk of OA, rather than increase it.

The knee is the joint most commonly affected by the symptoms of osteoarthritis. More than 10 million Americans suffer from knee osteoarthritis, the most common cause of disability in the United States and women are more commonly affected than men.

Public release date: 28-Jan-2009

Rochester study raises new questions about controversial plastics chemical

A University of Rochester Medical Center study challenges common assumptions about the chemical bisphenol A (BPA), by showing that in some people, surprisingly high levels remain in the body even after fasting for as long as 24 hours. The finding suggests that BPA exposure may come from non-food sources, or that BPA is not rapidly metabolized, or both.

The journal Environmental Health Perspectives published the research online January 28, 2009.

Controversy around BPA is mounting. In December the U.S. Food and Drug Administration agreed to reconsider the health risks of the chemical, which is used to make plastic baby bottles, water bottles and many other consumer products. Scientific studies suggest that BPA may harm the brain and prostate glands in developing fetuses and infants; adults with higher BPA levels in their urine were linked to higher risks for heart disease and diabetes, according to a study published last September in the Journal of the American Medical Association.

The latest finding from Rochester is important because, until now, scientists believed that BPA was excreted quickly and that people were exposed to BPA primarily through food. Indeed, the FDA and the European Food Safety Authority have declared BPA safe based, in part, on those assumptions.

"Our results simply do not fit that picture," said lead author Richard W. Stahlhut, M.D., M.P.H., of the University of Rochester's Environmental Health Sciences Center. "The research community has clues that could help explain some of these results but to date the importance of the clues have been underestimated. We must chase them much more vigorously now."

Manufacturers use BPA to harden plastics in many types of products. In addition to plastic bottles, BPA is used in PVC water pipes and food storage containers. BPA also coats the inside of metal food cans, and is used in dental sealants.

Stahlhut and colleagues obtained data for a sample of 1,469 American adults through the Center for Disease Control's National Health and Nutrition Examination Survey (NHANES). The researchers sought to explore the link between BPA urine concentration and the length of time a person had been fasting.

Accepting the widely held assumption that food is the most common route of exposure to BPA, Stahlhut expected to see a relationship between the last food ingested, fasting time, and BPA levels. People who had fasted longest (15 to 24 hours), for example, should have had much lower BPA levels than people who had eaten more recently, Stahlhut said.

Instead, those who fasted had levels that were only moderately lower than people who had just eaten. This is significant because scientists expected BPA levels to decrease by about half, every five hours.

"In our data, BPA levels appear to drop about eight times more slowly than expected – so slowly, in fact, that race and sex together have as big an influence on BPA levels as fasting time," Stahlhut said.

According to the authors, two possible explanations may exist for the higher-than-expected levels of BPA in people who fasted. One is that exposure to BPA might come through other means, such as house dust or tap water.

In addition, Stahlhut theorizes that BPA may seep into fat tissues, where it would be released more slowly. However, further study is needed to evaluate the effects of BPA on adipose tissue hormones and function, Stahlhut said, as well as more studies to compare BPA levels in fat versus blood and urine.

The Centers for Disease Control estimates that 93 percent of Americans have detectable levels of BPA in their urine.

The latest data also supports the idea that individuals might be re-exposed throughout the course of a day, Stahlhut said. In 2000 another research group found that BPA can migrate from PVC pipes or hoses into room temperature water, producing another potential route of exposure.

Public release date: 28-Jan-2009

Exposure to perfluorinated chemicals may reduce women's fertility

Researchers have found the first evidence that perfluorinated chemicals (PFCs) – chemicals that are widely used in everyday items such as food packaging, pesticides, clothing, upholstery, carpets and personal care products – may be associated with infertility in women.

The study published online in Europe's leading reproductive medicine journal *Human Reproduction* [1] today (Thursday 29 January) found that women who had higher levels of perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) in their blood took longer to become pregnant than women with lower levels.

The researchers from the USA used data from the Danish National Birth Cohort to assess whether levels of PFOS and PFOA in pregnant women's plasma were associated with a longer time to pregnancy. A total of 1,240 women were included in their analyses.

Blood samples were taken at the time of the women's first antenatal visit (between 4-14 weeks into the pregnancy) so that concentrations of PFOS and PFOA could be measured. The researchers also interviewed the women at around the 12th week of pregnancy to find out whether the pregnancy was planned or not and how long it took them to become pregnant. Infertility was defined as a time to pregnancy of longer than 12 months or infertility treatment to establish the current pregnancy, and the results were adjusted for potential confounding factors such as age, lifestyle and socio-economic status.

The levels of PFOS in the women's plasma ranged from 6.4 nanograms per millilitre (ng/ml) to 106.7 ng/ml, and from less than 1 ng/ml to 41.5 ng/ml for PFOA.

The researchers divided the women's levels of PFOS/PFOA into four quartiles, and found that, compared with women with the lowest levels of exposure, the likelihood of infertility increased by 70-134% for women in the higher three quartiles of PFOS exposure and by 60-154% for women in the higher three quartiles of PFOA exposure.

Dr Chunyuan Fei, from the University of California in Los Angeles (UCLA), the study's first author, said: "PFOS and PFOA were considered to be biologically inactive, but recently animal studies have shown that these chemicals may have a variety of toxic effects on the liver, immune system and developmental and reproductive organs. Very few human studies have been done, but one of our earlier studies showed that PFOA, although not PFOS, may impair the growth of babies in the womb, and another two epidemiological studies linked PFOA and PFOS to impaired foetal growth."

Professor Jørn Olsen, Chair of Department of Epidemiology at UCLA, is the principle investigator of the study. He said: "As far as we know, this is the first study to assess the associations between PFOA and PFOS levels in plasma with time to pregnancy in humans. We are waiting for further studies to replicate our findings in order to discover whether PFCs should be added to the list of risk factors for infertility."

PFCs, the class of chemicals to which PFOS and PFOA belong, are found not only in household goods but are also used in manufacturing processes, for instance for industrial surfactants and emulsifiers. They persist in the environment and in the body for decades.

The researchers believe that although they measured the PFOS/PFOA levels after pregnancy was established, these levels probably did not change significantly from the time before pregnancy. Men's sperm quality could also be affected by PFCs and might, therefore, contribute to the associations between PFC levels and time to pregnancy, since couples would tend to be sharing the same lifestyles and have similar exposures. However, the researchers did not have data on PFC levels in fathers. "Studies on sperm quality and PFOA/PFOS are certainly warranted," said Prof Olsen.

The researchers say the biological mechanisms by which exposure to PFOS and PFOA might reduce fertility are unknown, but PFCs may interfere with hormones that are involved in reproduction.

"Our data showed that higher proportions of women reported irregular menstrual periods in the upper three quartiles of PFOA and PFOS compared with the lowest, and so this could indicate a possible pathway," said Dr Fei.

Public release date: 28-Jan-2009

Most bacteria from craft goat's cheese come from lactic acid and could be very beneficial for health

Lactic acid, beneficial for health

Martín Platero highlights that this type of bacteria "could be especially beneficial for human health, as they cause fermentation in lactose, acidify the PH and therefore prevent development of pathogen microorganisms". Part of the microorganisms produce numerous antimicrobial compounds of protein nature known as bacteriocines, very active substances against pathogens and other microorganisms which alter food.

According to the study carried out at the UGR, the most abundant species found in such craft cheese are *Lactobacillus paracasei*, *Lb. plantarum* and *Lactococcus lactis*. The latter is one of the species most commonly found in yoghurt.

The results of this work have been partially published in the scientific journals Applied and Enviromental Microbiology, International Journal of Food Microbiology y Analytical Biochemistry.

Public release date: 28-Jan-2009

Physically Fit Kids Do Better in School

Cambridge, MA – January 28, 2009 – A new study in the Journal of School Health found that physically fit kids scored better on standardized math and English tests than their less fit peers.

Researchers examined the relationship between physical fitness and academic achievement in a racially and economically diverse urban public school district of children enrolled in grades 4 – 8 during the 2004 – 2005 academic year.

Results of their study show that there is a significant relationship between students' academic achievement and physical fitness. The odds of passing both standardized math and English tests increased as the number of fitness tests passed increased, even when controlling for gender, race/ethnicity, and socio-economic status.

School time and resources are often diverted from Physical Education and opportunities for physical activity such as recess. However, this study shows that students who do well on fitness tests also do well on math and English standardized tests.

“For families and schools, these results suggest investments of time and resources in physical activity and fitness training may not detract from academic achievement in core subjects, and, may even be beneficial,” the authors conclude.

Public release date: 28-Jan-2009

Chondroitin Slows Progression and Relieves Symptoms of Knee Osteoarthritis

Osteoarthritis (OA) causes disability and is a major public health problem. A new study examined the effect of chondroitins 4 and 6 sulfate (CS) on OA progression and symptoms. CS, unlike other chondroitin sulfate products sold as dietary supplements in the U.S., has been approved as a prescription symptomatic slow acting drug for OA in many European countries. The study was published in the February issue of Arthritis & Rheumatism (<http://www3.interscience.wiley.com/journal/76509746/home>).

Led by Andre Kahan of the University of Paris Descartes in Paris, the randomized, double-blind, placebo-controlled study involved 622 patients with OA from France, Belgium, Switzerland, Austria and the U.S. Patients had knee X-rays at the time of enrollment and at 12, 18 and 24 months. The X-rays were evaluated for joint space loss and patients were also assessed for OA symptoms and pain.

The results showed that "long-term administration of CS over 2 years can prevent joint structure degradation in patients with knee OA," the authors state. Joint space loss was significantly reduced in the CS group, fewer patients had progression of joint space width, and CS reduced pain in those taking it compared to the placebo group. CS was well-tolerated and there were no significant differences in the frequency of adverse events between the two groups.

The study showed that there was faster improvement regarding pain during the first year in the CS group compared to the placebo group. This may be due to the fact that all of the patients had pain symptoms, so the effect of CS was more noticeable early on. Since those who took a placebo also had decreased pain in the first year, it may also be due to the natural course of the disease. The authors note that the study involved CS, which is used as a prescription drug and that the results cannot be generalized to other chondroitin sulfate products or compounds, such as those available in the form of dietary supplements.

The decrease in joint space loss shown in this and another recent study involving 300 patients, suggests better outcomes for OA patients, according to the authors. They conclude: "Further studies with longer followup and different outcome criteria are warranted to assess whether the beneficial structural changes associated with CS demonstrated in our study are predictive of improvement in the long-term clinical progression of OA."

Article: " Long-Term Effects of Chondroitins 4 and 6 Sulfate on Knee Osteoarthritis," Andre Kahan, Daniel Uebelhart, Florent De Vathaire, Pierre Delmas, Jean-Yves Reginster, *Arthritis & Rheumatism*, February 2009.

Public release date: 29-Jan-2009

Blue light destroys antibiotic-resistant staph infection

Results reported in *Photomedicine and Laser Surgery Journal*

New Rochelle, NY, January 29, 2009—Two common strains of methicillin-resistant *Staphylococcus aureus*, commonly known as MRSA, were virtually eradicated in the laboratory by exposing them to a wavelength of blue light, in a process called photo-irradiation that is described in a paper published online ahead of print in *Photomedicine and Laser Surgery*. The article will appear in the April 2009 issue (Volume 27, Number 2) of the peer-reviewed journal published by Mary Ann Liebert, Inc. The paper is available free online at www.liebertpub.com/pho

Antibiotic-resistant bacterial infections represent an important and increasing public health threat. At present, fewer than 5% of staphylococcal strains are susceptible to

penicillin, while approximately 40%-50% of Staph aureus isolated have developed resistance to newer semisynthetic antibiotics such as methicillin as well.

Chukuka S. Enwemeka, Deborah Williams, Sombiri K. Enwemeka, Steve Hollosi, and David Yens from the New York Institute of Technology (Old Westbury, NY) had previously demonstrated that photo-irradiation using 405-nm light destroys MRSA strains grown in culture. In the current study, "Blue 470-nm Light Kills Methicillin-Resistant Staphylococcus aureus (MRSA) in Vitro," the authors exposed bacterial colonies of MRSA to various doses of 470-nm light, which emits no UV radiation.

The two MRSA populations studied—the US-300 strain of CA-MRSA and the IS-853 strain of HA-MRSA—represent prominent community-acquired and hospital-acquired strains, respectively.

The authors report that the higher the dose of 470-nm blue light, the more bacteria were killed. **High-dose photo-irradiation was able to destroy 90.4% of the US-300 colonies and the IS-853 colonies. The effectiveness of blue light in vitro suggests that it should also be effective in human cases of MRSA infection, and particularly in cutaneous and subcutaneous infections.**

"It is inspiring that an inexpensive naturally visible wavelength of light can eradicate two common strains of MRSA. Developing strategies that are capable of destroying MRSA, using mechanisms that would not lead to further antibiotic resistance, is timely and important for us and our patients," says Chukuka S. Enwemeka, PhD, FACSM, Co-Editor-in-Chief of the Journal and first author of the study.

Public release date: 2-Feb-2009

Zinc supplements during pregnancy may counteract damage from early alcohol exposure

Animal research has shown that binge drinking – even just once – during early pregnancy can cause numerous problems for the fetus, including early postnatal death. Fetal zinc deficiency may explain some of the birth defects and neurodevelopmental abnormalities associated with alcohol exposure. New rodent findings are the first to show that dietary zinc supplements throughout pregnancy can reduce some alcohol-related birth defects.

Results will be published in the April issue of *Alcoholism: Clinical & Experimental Research* and are currently available at Early View.

"Alcohol's damage to the fetus depends not only on the amount and duration of alcohol exposure, but also on the timing of the exposure relative to the development stage of the cells and tissues involved," said Peter Coyle, associate professor at the Hanson Institute in Adelaide, and corresponding author for the study. "Earlier work had shown that prenatal alcohol, as well as other toxins, can result in fetal zinc deficiency and

teratogenicity by inducing the zinc-binding protein, metallothionein, in the mother's liver. Since then, our group has confirmed the importance of metallothionein in alcohol-mediated birth defects."

Coyle and his colleagues injected pregnant mice with either saline or a 25-percent solution of alcohol on gestational day (GD) eight; all mice received either a regular or zinc-supplemented diet from GD zero to 18. On GD 18, fetuses from all four groups – saline, saline plus zinc, alcohol, alcohol plus zinc – were assessed for external birth abnormalities. In addition, from birth to day 60, researchers examined the growth of survivors from all four groups.

"There were three key findings," said Coyle. "One, fetal abnormalities caused by acute alcohol exposure in early pregnancy can be prevented by dietary zinc supplementation. Two, dietary zinc supplementation throughout pregnancy can protect against post-natal death caused by acute alcohol exposure in early pregnancy. Three, dietary zinc supplementation increases the mother's blood zinc to overwhelm the transient drop in zinc caused by alcohol, which we believe prevents the fetal zinc deficiency and subsequent fetal damage."

Coyle added that the rodents' GD eight is the equivalent of weeks three to eight during a human pregnancy. "This encompasses a period when the mother is often unaware of her pregnancy and may not have changed her drinking habits," he said. "Moreover, up to 60 percent of pregnancies are unplanned. This latter point is of concern when noting that binge drinking is common in the community and more likely to occur in the first trimester than later."

Importantly, Coyle emphasized, his team is not suggesting that it is safe to drink while taking zinc during pregnancy.

"We have not determined whether zinc protects against all of the possible negative outcomes from alcohol exposure in pregnancy," he said. "Nor would we recommend that makers of alcoholic beverages include zinc in their product so that women can drink while pregnant. Indeed, we take the conservative stand of a 'no alcohol policy' during pregnancy. What our studies do indicate is that dietary zinc supplementation could be as important as folic acid and applied as a simple prophylactic treatment in the human setting to prevent the effects of a range of insults in pregnancy."

While zinc supplementation is relatively common, and zinc tablets can easily be found in herbal shops, Coyle cautioned that zinc can also affect the absorption of other trace elements and cause anemia if taken in excess. "So one must be wary of taking zinc supplements without professional oversight, and this is particularly so in pregnancy," he said.

"Furthermore," he added, "although dietary zinc supplementation has been used in human pregnancy, we do not have any information regarding the dose that would be required to protect against damage from alcohol nor even the dosage that could be harmful to fetal

development. Indeed, we have not tested our hypothesis in humans and so it would be unwise to extrapolate any of our findings to humans. We would predict that zinc supplementation would only be effective around the time of alcohol intake to prevent fetal zinc deficiency. Taking zinc supplements a day after alcohol consumption would probably be too late to prevent fetal damage. Obviously more research is needed

Public release date: 3-Feb-2009

Vitamin D tied to muscle power in adolescent girls

Chevy Chase, MD—Vitamin D is significantly associated with muscle power and force in adolescent girls, according to a new study accepted for publication in *The Endocrine Society's Journal of Clinical Endocrinology & Metabolism (JCEM)*.

Although vitamin D is naturally produced in the body through exposure to direct sunlight, vitamin D deficiency has become widely common in the United States. Vitamin D deficiency has been shown to have a significant negative impact on muscle and bone health, and can lead to conditions including osteoporosis and rickets.

"We know vitamin D deficiency can weaken the muscular and skeletal systems, but until now, little was known about the relationship of vitamin D with muscle power and force," said Dr. Kate Ward, Ph.D., of the University of Manchester in the U.K., and lead author of the study. "Our study found that vitamin D is positively related to muscle power, force, velocity and jump height in adolescent girls."

For this study, researchers followed 99 adolescent girls between the ages of 12 and 14 years. Dr. Ward and her colleagues took blood samples to measure the girls' serum levels of vitamin D. Many of these girls were found to have low levels of vitamin D despite not presenting any symptoms.

Researchers used a novel outcome measure called jumping mechanography to measure muscle power and force. Jumping mechanography derives power and force measurements from a subject's performance in a series of jumping activities. Dr. Ward says this method of testing is ideal as the muscles required to jump are those most often affected in subjects with vitamin D deficiency. Girls without vitamin D deficiency performed significantly better in these tests.

"Vitamin D affects the various ways muscles work and we've seen from this study that there may be no visible symptoms of vitamin D deficiency," said Dr. Ward. "Further studies are needed to address this problem and determine the necessary levels of vitamin D for a healthy muscle system

**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.**