

EFFORTS

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NEW RESEARCH SHOWS SECOND-HAND SMOKE RAISES DIABETES RISK

A study published on bmj.com this week shows for the first time that breathing other people's smoke raises the risk of developing glucose intolerance, the precursor to diabetes. The US research also shows that overall, white Americans are more susceptible to this effect than African-Americans.

Researchers examined 4572 men and women in four US cities, dividing them into four categories of smoking status: ranging from those who smoked, to those who had neither smoked nor breathed in other people's smoke. The study focussed only on those who were white or African-American. The authors then tracked how many participants developed glucose intolerance - where the body can no longer produce enough insulin to regulate blood sugar - over 15 years of follow-up. The study found that smokers had the highest risk, with 22% of them getting the disease over the study period. Non-smokers who had no exposure to second-hand smoke had the lowest risk, with less than 12% developing the condition. But 17% of those who had never smoked themselves but were subject to second-hand smoke also developed glucose intolerance - higher than the 14% risk rate in the group who had previously smoked and given up.

Those breathing second-hand smoke are exposed to many toxins, say the authors. And the chemical reactions which produce second-hand smoke mean that some of those toxins may be at even higher concentrations than the levels breathed in directly by smokers. If one of these toxins particularly affects the pancreas - the organ which produces insulin - this may explain the findings, they suggest. Until now, it had not been known that those breathing second-hand smoke faced an increased risk of diabetes, say the researchers. More studies are now needed, they conclude.Source: British Medical Journal

POSITIVE RESULTS OF SERETIDE SURVIVAL STUDY

GlaxoSmithKline plc announces preliminary results from the TORCH study (TOWards a Revolution in COPD Health) which show a 17% relative reduction in mortality over three years for patients receiving Seretide(TM) 50/500 micrograms (EU) /Advair(R) (US) (salmeterol/fluticasone propionate) as compared with patients on placebo (p=0.052). This is the first study to investigate the effects of pharmacotherapy on all-cause mortality in patients with COPD. The primary comparison was between Seretide/Advair and placebo.

Seretide/Advair also reduced the rate of COPD exacerbations by 25% compared to placebo (p<0.001) and

resulted in an improvement in quality of life when compared to placebo as measured by the St George's Respiratory Questionnaire (SGRQ) (p<0.001).

Adverse events seen in the study generally appear consistent with those seen in previous studies of Seretide/Advair in patients with COPD. Despite the reduced rate of exacerbations overall Seretide/Advair was associated with increased reporting of adverse events classified under lower respiratory tract infections, when compared with placebo (p<0.001).

GSK believes these data are clinically important and that they will have a positive impact on the future management of COPD. GSK will be working with regulatory authorities to incorporate these study findings into our prescribing information for Seretide/Advair (50/500 micrograms).

A multi-centre, multinational, double-blind trial, TORCH enrolled over 6,100 patients with COPD into one of four treatment arms; Seretide/Advair (50/500 micrograms), Serevent (salmeterol) (50 micrograms), Flixotide/Flovent (fluticasone propionate) (500 micrograms) or placebo over a treatment period of three years. The primary endpoint was all-cause mortality comparing Seretide /Advair with placebo and secondary endpoints were COPD exacerbations and quality of life. GSK will seek publication of the study in a peer-reviewed journal at the earliest opportunity.

Advair(TM) 50/500 is not licensed in the US for patients with COPD.Source: medicalnewstoday.com

PROMISING NEW DRUG

Now in regulatory review, Champix is a non-nicotine-based therapy that may help millions of people defeat one of humanity's toughest-to-break addictions. The consequences of tobacco use are well-known - various cancers, heart disease and lung disorders. The vast majority of people who smoke want to quit the habit but find it too difficult to overcome nicotine addiction. A novel nicotine-receptor agonist, Champix fools the brain into believing that the urge to smoke tobacco has been satisfied. Clinical trials to date have shown that Champix is more effective than currently available oral antismoking prescription medicines. Champix has been granted priority review status by the FDA. Pending FDA approval, a 2006 launch is planned.Source: Pfizer's Annual Report

NEW CHOLESTEROL DRUG FAILS HUMAN TRIAL

A promising theory, focused on a drug that experts hoped would help prevent heart disease, has been proven wrong in a

real-world trial. The idea was to prevent the formation of the fatty plaques that clog arteries by blocking an enzyme that steers cholesterol into those plaques. However, pactimibe, a drug designed to interfere with the enzyme, did nothing to stop plaque formation, researchers report in the March 23 issue of the *New England Journal of Medicine*. In fact, it seems to have increased the danger.

"This approach has proven to be too risky, and it should not be pursued further," said Dr. Sergio Fazio, a professor of medicine at Vanderbilt University Medical Center, and the author of an accompanying editorial in the journal. The report was rushed into print by the journal, according to lead researcher Dr. Steven E. Nissen, who is interim chairman of cardiovascular medicine at the Cleveland Clinic. Preliminary results from the trial had already been presented earlier this year at an American Heart Association meeting. Nissen applauded the journal's decision to publish the study results, even though things didn't pan out as hoped. "Things have really changed in the last few years," he said. "Negative trials used to get buried. In my view, it is very important to publish these negative results because other drugs in this class are in development, and the trial seemed to show an increasing rate of atherosclerosis [hardening of the arteries]."

The class of drugs in question block the effect of an enzyme known by its abbreviated name of ACAT. ACAT inhibitors act in a completely different way from statins, the widely used cholesterol-lowering medications that include blockbuster like Lipitor and Pravachol. While statins prevent the body from producing cholesterol, ACAT inhibitors, in theory, were supposed to prevent cholesterol from forming plaques and also keep it out of cells. That idea was good on paper, Fazio said. However, he added that the trial's poor results were predictable, based on similar results in a prior clinical trial using a different ACAT inhibitor, and from Fazio's own research using an animal model. In theory, the way to prevent cholesterol from forming plaque and get cholesterol out of the cell is to make sure it is in a form called "free cholesterol," Fazio said. An ACAT inhibitor does increase the amount of free cholesterol, but there's a catch: animal studies have shown that "too much free cholesterol is toxic to the cell," he said.

For that reason, this line of research may be a dead end, Fazio said. "Instead of telling the cell to make more free cholesterol, we have to think of ways to get cholesterol out of the cell, to open the doors and let cholesterol out." A number of researchers are working on different methods of "opening the doors and windows of the cell" so that cholesterol can exit, Fazio said. One promising method is to increase the number of cholesterol receptors that would grab hold of the molecule outside the cell, he said. The pactimibe trial did have one positive result, according to Nissen. The researchers used a technique called intravascular ultrasonography to measure the formation of plaque in the 408 people with coronary disease who took part in the trial. The technique provided good information on plaque formation and can be used in other studies, he said.

Another report on cholesterol and heart disease in the same issue of the journal focused on the role of genetics. Researchers at the University of Texas Southwestern Medical Center in Dallas report that people who carry one of three variants of genes involved maintaining blood cholesterol levels are at substantially reduced risk of heart disease. Two of the gene variants are found predominantly in blacks, one in whites. One of the gene variants reduced blood levels of LDL cholesterol by 28 percent and the risk of coronary heart disease by 88 percent, the researchers reported.Source: HealthDay News



INSPIRATORY MUSCLE TRAINING MAY INCREASE PEAK INSPIRATORY FLOW IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Background: When choosing a specific inhalation device for a chronic obstructive pulmonary disease (COPD) patient, the internal airflow resistance and the ability of the patient to overcome it and to create an optimal inspiratory flow are essential.

Objectives: The purpose of the present study was to investigate: (1) the peak inspiratory flow (PIF) that a patient with COPD can generate while breathing through two dry powder inhalers and (2) whether in patients with low PIF specific inspiratory muscle training (SIMT) will increase the PIF and exceed the minimal PIF that is considered necessary to guarantee optimal lung deposition of the drug. **Methods:** Inspiratory muscle strength and PIFs were measured in 60 patients with COPD. Then 28 patients with severe COPD and low PIF were randomized to receive SIMT or to a control group. **Results:** With the Turbuhaler, 12 patients (20%) could not generate the optimal flow of 60 l/min. PIF correlated very well with maximal inspiratory mouth pressure (P_{Imax}) for the Diskus and the Turbuhaler, as well as for both males and females ($p < 0.001$). Following the training period, there was a statistically significant increase in the P_{Imax} in the training group. This increase was associated with a significant increase in the PIF. All patients overcame the minimal threshold PIF following the training. **Conclusions:** Some patients with severe COPD are not able to generate adequate flow to secure optimal lung deposition of the inhalation with the Turbuhaler. SIMT improves inspiratory muscle strength as well as PIF. Following 8 weeks of training, the optimal PIF enabling adequate lung deposition of the drug was attained in all the trained patients.

....Source: Medline



HORMONE PREDICTS PULMONARY HYPERTENSION IN LUNG DISEASE

In patients with chronic lung disease, circulating levels of brain natriuretic peptide can be used to identify those with significant pulmonary hypertension. What's more, levels of circulating brain natriuretic peptide can predict the risk of functional lung impairment, hypoxemia, and death, according to Juergen Behr, M.D., and colleagues, of Ludwig Maximilians University here.

"In our study, we observed that elevated brain natriuretic peptide levels predicted survival in patients with chronic lung

disease irrespective of its etiology or clinical severity," the investigators reported in the April 1 issue of the American Journal of Respiratory & Critical Care Medicine.

Chronic lung disease and associated prolonged hypoxemia lead to sustained pulmonary vasoconstriction and narrowing of the pulmonary vasculature, which in turn can lead to right heart enlargement with ventricular hypertrophy and impaired cardiac function (cor pulmonale), the authors noted. "However, although pulmonary hypertension potentially develops in every hypoxemic or chronic lung disease, there is still uncertainty about the degree of a clinical relevant pulmonary hypertension and about the time point when right heart catheterization should be initiated, as this is the method of choice to definitely diagnose pulmonary hypertension," they wrote.Source: Am Journal of Resp & Critl Care Med



"E-PATIENTS" CHALLENGE SUBORDINATE ROLE IN MEDICAL CARE SYSTEM

Even though half of adults in the U.S. say they have looked for health information on the Internet, clinicians continue to underestimate the benefits and overstate the risks of online health resources, a new study finds.

A fundamental reason why physicians do not encourage their patients to consult an online resource about an illness or medical condition is the subordinate role the health system continues to assign to responsible, motivated patients, according to study author Tom Ferguson, MD, senior research fellow at the Pew Internet and American Life Project. Contrary to what most physicians have been taught, "the universe doesn't rotate around the physician, but the patient," Dr. Ferguson told Medscape in an interview. "The whole mode of thinking that we've all been trained in [as physicians] does not admit room for that."

But "e-patients," or those who seek online guidance or information about their condition, as well as friends and family members who conduct research on their behalf, are slowly but steadily changing the standards by which healthcare access and quality are judged, according to Dr. Ferguson. His editorial on the impact of e-patients appears in the May 15 issue of the British Medical Journal. The issue is devoted to e-health, and it envisions a healthcare system that uses communication and information technologies to enhance patient care.

In addition to e-patients' pursuit of online information, which they describe as often more complete than what they receive from clinicians, e-patients also use online support groups for "emotional support, guidance, health information, and medical referrals for nearly all medical conditions — around the world, 24 hours a day and seven days a week, for free," Dr. Ferguson writes. "For the sickest patients and those with rare diseases, online support groups can sometimes be more important resources than physicians for many aspects of medical care."

E-patients are beginning to take note of the "net friendliness" of clinicians and healthcare organizations as an important aspect of healthcare quality, the editorial notes. "Net friendly clinicians support their e-patients' new abilities,

encourage them to share the results of their online research, and communicate with them by email."

Supporting patients' quest to learn as much as they can about their health condition should be a guiding principle, not the exception, to quality care, said Dr. Ferguson. "We have a professional construct of what constitutes healthcare quality that often does not gibe — and is often diametrically opposed — to what patients think is healthcare quality," he said.

Health researchers must begin to appreciate the transforming effect that e-patients are beginning to have on medical care and to work more aggressively to build that awareness, the editorial advises. "A number of insightful studies of the emerging culture of e-patients have been published, mostly in the social science literature. But they are rarely cited in mainstream medical journals, and their conclusions are unknown to most clinicians," Dr. Ferguson writes.

Finally, according to the editorial, the entire health system is in need of a "major system upgrade in our thinking" in order to recognize the legitimacy of e-patients, and to involve them in the management of their healthcare and in collaborations between patients and healthcare professionals.

Clinicians could take the first step toward this goal by "paying attention to their own patients and their use of the Internet," Dr. Ferguson said. Ask them about what they have learned in their online research and what kind of experiences they have had or heard about from friends or family members, he said. "They may know things that are helpful in treating your [other] patients. The level of knowledge may be narrow, but it is deep and "quite amazing," he said.Source: Medscape.com



COMMISSION WARNS ABOUT FAKE DRUGS ON THE INTERNET

The European Commission has issued a warning that fakes of the medicine rimonabant are currently being sold via several websites. Rimonabant has been developed to treat obesity and related risk factors and smoking cessation[1]. The medicine is still under evaluation by the European Medicines Agency (EMA). The product will only receive marketing authorisation by the European Commission once its quality, safety and efficacy have been satisfactorily established by the EMA scientific committee, and this approval is still pending. Once approved, the company intends to market rimonabant under the name Acomplia™. Patients who buy unlicensed and counterfeit or illicit copies of rimonabant may be putting their health at risk. This latest example underlines European Commission concern that criminals are taking advantage of the anonymity of the internet to sell fake, adulterated and unlicensed medicines to an unsuspecting public, putting lives at risk as well as undermining the pharmaceutical industry.

Commission Vice-President Günter Verheugen responsible for enterprise and industry products said: "I am alarmed at the ever increasing number of counterfeit medicines sold via the internet. This represents a real danger to the health of patients. The Commission is working with European and international partners to do everything possible to ensure legal methods for marketing of medicines are respected and enforced."

Counterfeiters try to bypass the foreseen regulatory pathways of licensing and supervision by competent authorities. According to a recent survey by the Member States, 170 medicines were identified to be counterfeit in the illegal distribution channels over the past 5 years. Such illegal trade often occurred through the internet. Among the cases identified, lifestyle, growth hormones for bodybuilding use and sleeping drugs played a particular role. Unauthorised copies and fakes of licensed medicines for the treatment of erectile dysfunction (e.g. Viagra[®][2], Cialis[®][3]) and viral infections (e.g. Tamiflu[®][4]) have also been on the sales lists of criminal counterfeiters. Counterfeits may include fakes which do not contain any of the medicine or the wrong medicine. At the same time, they may damage the image of a product and companies investing in the research and application of these products, while criminals try to make money without taking any responsibilities and risks.

To be marketed in the EU, all medicines must undergo a rigorous evaluation for authorisation to demonstrate that they are effective, adequately safe and of high quality. This is ensured by a robust regulatory system for the authorisation of new medicines. The EU also has a strong legal framework for the licensing, manufacturing and distribution of medicines. At the end of the distribution chain, only licensed pharmacies and approved retailers are allowed to offer medicines for sale, including the legitimate sale over the Internet.

Member States enforcement services closely cooperate to combat fake medicines. To further protect patients and industry from criminal counterfeit activities, the Commission is currently analysing the situation and working together with Member States, the European Medicines Agency and international partners on what further actions may be necessary to safeguard public health.Source: Mdlinx



ABDOMINAL FAT MORE SIGNIFICANT IN EXERCISE-INDUCED SHORTNESS OF BREATH THAN OVERALL WEIGHT

When it comes to being short of breath during exercise, how fat is distributed on the body is a more significant factor than overall body fatness or lung function, say researchers at the Institute for Exercise and Environmental Medicine, Presbyterian Hospital of Dallas, and the University of Texas Southwestern Medical Center. They found that women with higher amounts of abdominal fat required more oxygen during exertion. That finding may have important implications for helping obese people better tolerate the exercise they so badly need.

Dr. Tony Babb and Dr. Rebecca MacDougall, a physician and research assistant in Dr. Babb's laboratory, presented the findings on April 4 at Experimental Biology 2006 in San Francisco. The presentation was part of the scientific program of The American Physiological Society.

More than half of Americans are classified as overweight and more than 22 percent are obese; obesity contributes to diabetes and metabolic syndrome; heart disease, hypertension, and stroke; and some forms of cancer. Last year,

approximately 300,000 deaths in the United States were attributed to obesity, and the annual healthcare cost related to obesity now runs at \$117 billion. Physical activity and exercise are among the most important components in the prevention and treatment of obesity, but many obese adults do not participate in regular physical activity because they simply can't get enough breath while exerting themselves.

But it's not only their weight per se that's too blame, say the researchers. In earlier studies in the Babb laboratory, researchers had measured the oxygen cost of breathing - a unique measurement of how much oxygen is utilized for breathing -- in mild to moderately obese women. The oxygen cost was markedly increased in some but not all of the women, even when their overall body fat was similar. In the study reported at Experimental Biology, the researchers tested eight mild-to-moderately obese women to see what caused this difference.

Age, height, weight, body mass index (BMI), percentage of overall body fat (as determined by hydrostatic or underwater weighing), and pulmonary function at rest all were similar among all the women. But multiple MRI scans of the upper body found significant differences in fat distribution between the four women who had exertional dyspnea or shortness of breath on exertion and the four women who did not have such shortness of breath. There was a significant correlation between the amount of abdominal fat (fat under the skin of the abdomen as opposed to visceral fat or fat actually inside the abdominal cavity where the stomach and other organs are located) and the oxygen cost of breathing.

It is not yet clear whether increased shortness of breath in these women is simply the result of increased weight and forces on the lungs, or if increased fat on the surface of the abdominal area decreases lung volume, causing the sensation of shortness of breath, say the researchers. But what is clear, they continue, is that sending the women to the gym with orders to soldier on through and get in better condition may not help.

Dr. Babb says these preliminary data show that some obese patients with breathlessness during exertion do not appear to be deconditioned as conventionally thought, but rather suffer from respiratory limitations. Thus the recommendations for these patients may need to focus on weight loss and use special considerations for the type of exercise they are prescribed. He adds that it is important that we obtain more information as to the cause of breathlessness on exertion in people with high amounts of abdominal fat.Source: medicalnewstoday.com



CINNAMON, CLOVES IMPROVE INSULIN FUNCTION, LOWER RISK FACTORS FOR DIABETES, CARDIOVASCULAR DISEASE

Two studies presented at Experimental Biology 2006 provide new evidence for the beneficial effects (and biochemical actions) of cinnamon as an anti-inflammatory agent and support earlier findings of its power as an anti-oxidant agent and an agent able to lower cholesterol, triglycerides, and glucose, and improve how well insulin functions.

In a related study, extracts of cloves also were found to improve the function of insulin and to lower glucose, total cholesterol, LDL and triglycerides in people with type 2 diabetes. Earlier studies had shown these positive effects in laboratory studies; the study presented at Experimental Biology provides the first evidence of these beneficial effects in humans taking the equivalent of one to two cloves per day.

Earlier studies in the laboratory of one of the co-authors of all these papers, Dr. Richard A. Anderson, Beltsville Human Nutrition Research Center, United States Department of Agriculture, had shown that the equivalent of a quarter to half a teaspoon of cinnamon given to humans twice a day decreased risk factors for diabetes and cardiovascular disease, including glucose, cholesterol and triglycerides, by 10 to 30 percent. These new studies showing cinnamon's ability to block inflammation extend our understanding of the potential for the spice, says Dr. Anderson. As an anti-inflammatory agent, cinnamon may be useful in preventing or mitigating arthritis as well as cardiovascular disease. And as scientists increasingly understand the relationship between inflammation and insulin function in Alzheimer's (causing some to refer to the neurodegenerative disease as "type 3 diabetes"), cinnamon's ability to block inflammation and enhance insulin function may make it useful in combating that disease as well.

The cinnamon and clove studies presented in April at Experimental Biology 2006 in San Francisco are part of the scientific program of the American Society for Nutrition, Inc. The three studies are:

* Dr. Heping Cao of the Beltsville Human Nutrition Research Center and colleagues, including Dr. Anderson, investigated the biochemical basis for the insulin-like effects of cinnamon. Results showed that cinnamon, like insulin, increases the amount of three critically important proteins involved in the body's insulin signaling, glucose transport, and inflammatory response. Dr. Cao says the study provides new biochemical evidence for the beneficial effects of cinnamon in potentiating insulin action and suggests anti-inflammatory properties for the antioxidants in cinnamon. Other researchers involved in the study are Dr. Marilyn M. Polansky of the USDA-ARS Beltsville (Maryland) Human Nutrition Research Center, and Dr. Perry J. Blackshear of the National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.

* Dr. Stephanie Mae Lampke, University of California, Santa Barbara (UCSB), and colleagues, used fractionation and electrospray mass spectrometry to identify the chemical structure of active ingredients in cinnamon. She worked with UCSB's James Pavolich and Donald Graves. This study provides information on how cinnamon works. Working with Dr. Lampe, Dr. Anderson, and Dr. Polansky (also involved in the paper above) were members of the USDA BHNRC. Research was supported in part by a grant from Cottage Hospital, Santa Barbara, to Dr. Graves.

* Dr. Alam Khan, Agricultural University, Peshawar, Pakistan, a former postdoctoral student and Fulbright Fellow in the Anderson laboratory, reports the first study of the effect of cloves on insulin function in humans. Thirty-six people with

type 2 diabetes were divided into four groups, which then took capsules with either 0, 1, 2, or 3 grams of cloves for 30 days. There were no significance differences in responses among the three levels of cloves used - but there were markedly significant differences between those who took cloves and those who did not. At the end of the 30 days, individuals with diabetes who had been taking some level of clove supplementation showed a decrease in serum glucose from an average 225 to 150 mg/dL, triglycerides from an average 235 to 203 mg/dL, a decrease in serum total cholesterol from 273 to 239 mg/dL, and a decrease in LDL from 175 to 145 mg/dL. The individuals with diabetes who had not been taking clove capsules showed no differences. Serum HDL was not affected by consumption of cloves.

The people with diabetes who had been in the experimental group then were taken off clove supplementation and, after 10 days, their glucose, triglycerides, total cholesterol and LDL measured. Although these had begun to rise somewhat, all remained significantly lower than at the beginning of the study. Dr. Khan says the finding that intake of 1 to 3 grams of cloves per day lowered risk factors of diabetes without changing HDL concentration suggest strongly that cloves are beneficial for people with type 2 diabetes. Co-authors of the study in addition to Dr. Khan and Dr. Anderson are Dr. Syed Saeed Qadir, Agricultural University, Peshawar, Pakistan, and Dr. Khan Nawaz Khattak, HMC, Hayatabad, Peshawar, Pakistan. The research was supported by the Higher Education Commission of Pakistan.

The effect of cinnamon is a major research interest in Dr. Anderson's laboratory, where human studies are now taking place looking at how this ingredient can improve insulin functioning in women with polycystic ovary syndrome (a disease of insulin sensitivity in which perturbed hormone levels cause difficulty in getting pregnant, among other problems), people with type 2 diabetes and the prediabetic metabolic syndrome; and people who are very obese (because Dr. Anderson believes that improving insulin function will lead to improvements in weight and lean body mass). A post doctoral fellow in the Anderson laboratory also is beginning to investigate whether improving insulin functioning will decrease the chance of developing Alzheimer's disease.

Two final bits of advice from Dr. Anderson: First, eating great quantities of cinnamon straight from the can is not a good idea. Table cinnamon is not water soluble, meaning it can build up in the body with unknown consequences. Second, the powdered cinnamon has another limitation. Dr. Anderson's personal 60-point decline in total cholesterol occurred only after he switched from sprinkling cinnamon on his breakfast cereal to taking it in a capsule. Saliva contains a chemical harmful to cinnamon.

.....Source: medicalnewstoday.com



ASK THE DOCTOR

Q: I am a COPD patient and spend most of my time sitting and watching TV. I know this isn't good for me, but I can't do much else. When I am active, I get so short of breath that I feel like I am choking to death. Do you have any ideas about what I can do?

A Chronic obstructive pulmonary disease (emphysema and chronic bronchitis) does make people sedentary for the exact reason you gave. However, exercise is quite necessary. Not being active weakens muscles in a short time, and weak muscles compound breathlessness. If there is a pulmonary rehabilitation program in your local hospital, enroll. If there isn't one and your doctor agrees to an exercise program for you, begin one on your own. If you need oxygen during exercise, take it with you.

Start with walking. If you can walk for only a few minutes, that's enough for a beginning. Breathing correctly will help you. Inhale through your nose and take two seconds to do so. Exhale through pursed lips (pursed lips keep the airways open and let you completely empty your lungs). Take four seconds to blow the air out. Also bend a bit forward. Emphysematous lungs crowd the chest; bending slightly forward gives them more room and you more air.

Repeat the walk a couple of times a day if you're walking only a few minutes. Every couple of days, extend the duration of your walk. The goal is to walk for 30 minutes at least three times a week, more if you can.

Once you've become stronger and are breathing better, add to your program some light weightlifting for both your arms and your legs.



DEFUSING THE DAIRY DILEMMA

There can't be many people who have missed the national "Got Milk?" ads of the past decade. This whimsical campaign for U.S. dairies has featured some 200 celebrities, athletes, and musicians sporting exaggerated milk mustaches. The Milk Processor Education Program has said its goal in the ads has been to show that consuming milk is cool (not just for babies any more) and healthy. The cited benefits include strengthening bones and teeth, lowering blood pressure, and limiting weight gain. However, increasing the consumption of milk by teens and adults has proven an uphill battle, particularly among people who have—or suspect they have—lactose intolerance.

Beginning around age 2, as much as three-quarters of people around the world lose their ability to produce ample lactase. That's the enzyme needed to break down lactose, the primary sugar in milk. When these lactose-intolerant individuals consume dairy products, most of milk's sugar will pass largely undigested through the upper gastrointestinal tract and into the colon. That's not good because there, normal, gut-dwelling microbes will feast on the sugar and belch out hydrogen and other gases. Indeed, researchers test for lactose intolerance by measuring hydrogen in a person's breath after a meal. When a person with intolerance consumes too much milk or cheese, a host of unpleasant symptoms can arise: chiefly nausea, cramps, flatulence, and diarrhea.

As many as 50 million people in the United States are considered lactose intolerant, with certain ethnic groups disproportionately affected. Some 80 percent of African Americans and Native Americans have the condition, as do more than 90 percent of Asian Americans. In contrast, only about 10 percent of adults with a Northern-European heritage

have trouble breaking down lactose.

However, a new analysis in the *Journal of Nutrition* finds that even people with confirmed lactose intolerance can usually drink at least a cup of milk without symptoms—especially if that milk is consumed with a meal. The finding didn't surprise human nutritionist Dennis A. Savaiano of Purdue University, the study's lead author. Indeed, it dovetailed with results from a host of clinical studies carried out by his team over more than a decade. These data reinforce that people with lactose intolerance can safely digest more dairy than they think they can, says Savaiano, a lactose-intolerant Italian-American. Indeed, the researcher regularly drinks milk with breakfast and dinner and downs additional dairy foods most days during lunch. The trick is to consume them in moderation, he says.

Few people need to shun milk, one of the diet's richest sources of calcium, says Savaiano. He points out that this mineral remains woefully deficient in most adults' diets.

Got calcium?

Despite the recommendation that people age 6 and older consume between 1,000 and 1,500 milligrams of calcium daily, few adults do so.

Theresa Nicklas of the Department of Agriculture's Children's Nutrition Research Center in Houston has been studying the problem. At a biology meeting last year, she and her colleagues reported that in Bogalusa, La., 80 percent of a population of adults consume no more than two servings of milk or other dairy foods per day. About half of the study participants consumed one serving or less. Considering that a cup of milk has only 300 mg of calcium, few people were deriving much of the mineral from dairy sources.

Other foods containing calcium don't fill the mineral gap for most people. Broccoli is a calcium-rich vegetable, but a typical serving of that has only 50 milligrams. The same amount of the mineral is present in a serving of enriched orange juice. A cup of soybeans or baked beans delivers more calcium—but still only half as much as a serving of milk does. It's because milk and other dairy products are such rich calcium sources that most nutritionists advocate consuming low-fat dairy products on a daily basis.

Overcoming intolerance

The Purdue researchers almost 2 decades ago began pursuing ways to help lactose-intolerant individuals cope with dairy foods. The team's original ideas included keeping portion sizes small and eating them along with foods to slow the passage of milk sugar through the gut. However, notes Savaiano, along the way his group and others found that many people who know they're lactose intolerant—or think they are—are reluctant to consume dairy products at all. This is despite the fact that when tested, few people can tell the difference—in terms of symptoms—between foods free of lactose and those with a moderate amount.

Since most such studies have been small, the Purdue group decided to pool results from a host of experiments in which people were given a food with or without lactose and asked to record any gastrointestinal symptoms. In these trials, neither the participants nor researchers knew who got lactose-containing meals until after the tests had been completed.

Although a scan of the published record for potentially applicable studies turned up 1,553 possible candidates, independent reviewers dismissed most of them as containing either potential biases or major deficiencies in their design or data reports. In the end, Savaiano says, "I was surprised" at the small number of quality studies available for analysis. Just 21 met the criteria for inclusion.

In the April Journal of Nutrition, Savaiano's team reports that among people diagnosed with lactose intolerance, the severity of symptoms is no worse after downing a cup of milk—or other food with an equivalent amount of lactose—than after ingesting a lactosefree food or drink. "This included perceived severity of abdominal bloating, abdominal pain, degree of loose stools or diarrhea and flatulence," the team reports. Although dose can make a big difference in whether symptoms appear, the researchers couldn't gauge how big a difference from these studies because most had administered about the same amount of lactose.

Eating well, doing good

Savaiano's team first reported its findings a year ago at a small symposium entitled Calcium-Related Chronic Diseases in Ethnic Minorities—Can Dairy Consumption Reduce Health Disparities? At the same meeting, Molly E. Reusser of Academic Network in Portland, Ore., and David A. McCarron of the University of California, Davis reviewed data on hypertension. They noted that blacks have far higher rates of high blood pressure than do whites. This major risk factor for heart disease currently afflicts at least 42 percent of all African American adults, more than 9 million people.

One diet that has proven effective at lowering blood pressure, especially in black adults, is known as DASH, for Dietary Approaches to Stop Hypertension. Although media attention has focused on the fruit-and-vegetable component of the regimen, Reusser and McCarron argue that this emphasis has been "both misplaced and misleading." Why? The dietary elements that probably decreased blood pressure most were vitamin D and several minerals, including calcium, say the two researchers. A second study has also linked these nutrients and lowered blood pressure, they note. Further analyses of the DASH study show that among several diets tested, one also cut two additional heart-disease risk factors, blood concentrations of folate and homocysteine. That diet, containing three daily servings of dairy foods, was the only one that "produced favorable changes" in the study participants, report Reusser and McCarron.

Robert P. Heaney of Creighton University noted at the 2005 symposium that at least when it comes to building bone, blacks tend to use calcium more efficiently than white people do. In other words, African Americans build stronger bones with smaller inputs of the mineral. However, since bone is far from the only tissue that benefits from calcium, even black people with healthy bones can't assume they're getting sufficient calcium. Indeed, said Heaney, a system within a black person's body that protects bones even when calcium intake is low may actually increase that individual's risk of obesity, heart disease, and diabetes .

Age Recommended daily calcium intake

0–6 months 400 mg
 6–12 months 600 mg
 1–5 years 800 mg
 6–10 years 1,200 mg
 11–24 years 1,200–1,500 mg
 19–50 years 1,000 mg
 51 years and up 1,500 mg

.....From Science News, Vol. 169, No. 14



EXERCISE NO THREAT TO A WOMAN'S HEART

Just in case the message wasn't clear already, exercise helps -- and rarely hurts -- your heart. A new study has found that sudden cardiac death during exertion is extremely uncommon in women, and perhaps even more uncommon in women who exercise regularly. And in the same vein, a second study showed that women who are heavier and who exercise less are more likely to have warning signs implicated in the development of cardiovascular disease.

These two studies appear in the March 22/29 issue of the Journal of the American Medical Association, a themed issue on women's health. The issue also includes a study that found that women have about the same incidence of stable angina -- chest pain because of insufficient blood flow to the heart -- as men. And a fourth study found that low-dose aspirin therapy is even more protective in women than in men. Current guidelines recommend that healthy adults engage in at least 30 minutes or more of moderate-intensity physical activity almost daily.

A previous study, however, had showed a certain risk associated with exercise, namely a risk of cardiac death in men. "That concerned everybody, even though it was very low," said Dr. Alison Schecter, co-director of the Women's CARE (Cardiac Assessment and Risk Evaluation) Center at Mount Sinai Medical Center in New York City. "Should I run a marathon? Should I not run a marathon?" And little research had investigated the issue in women.

The first new study used data from the Nurses' Health Study, which followed 69,693 women without preexisting cardiovascular disease for up to 28 years and reported results related to sudden cardiac death. As it turned out, the absolute risk of sudden cardiac death associated with moderate to vigorous exertion was one per 36.5 million hours of exertion, which was only slightly more than the risk associated with lesser or no exertion. The risk was even lower among women who exercised regularly. This rate of risk is even lower than that found in men.

"The risks were very, very low, even lower than in men," said study senior author Dr. Christine Albert, director of the Center for Arrhythmia Prevention at Brigham and Women's Hospital in Boston. "Overall, the women who were exercising regularly had a lower risk of sudden cardiac death during all times, not just during exertion."

Schechter said, "While the risk was low in men, it's even lower in women. This gives women the wherewithal to do

vigorous exercise and emphasizes how safe it is." "The benefit of long-term habitual exercise is that you live longer. That can't be underestimated," she added. Anybody who has been ill or who already has cardiovascular disease should consult their doctor before starting an exercise program, Schechter advised. And being a weekend warrior is not a good way to exercise, she said.

Albert said: "The take-home message is that the risks are low but that there's an intelligent way to begin exercising, which is to build up slowly rather than to go out and do something vigorous when you haven't been exercising at all. It's also important to consult a physician to see if there's any reason you shouldn't exercise. Overall, exercise has multiple health benefits and these benefits certainly outweigh the small risk."

For the second study, an analysis of 27,158 participants in the Women's Health Study, researchers found that less-active women who also had a higher body mass index (BMI, a ratio of weight to height) showed higher levels of inflammatory and lipid markers that could spell trouble for later heart disease. "There was an idea that being a little overweight was OK," Schechter said. "Now it seems your BMI should be in a certain range and you should ask your doctor what the ideal BMI is. If it's higher, it impairs your health. The bottom line is that losing weight is good, if you're overweight."

In the third study, medical records of women aged 45 to 89 who had no history of coronary disease revealed that angina strikes women as often as it does men. Previous research had showed that women with angina had a higher risk of coronary death compared with women with no angina. The final study delivered more good news: Low-dose aspirin therapy, as a way to prevent heart disease, actually worked better in women than in men. The trial participants, 571 men and 711 women, took 81 milligrams of aspirin a day.Source: ScoutNews



INFECTIONS MAY TRIGGER DANGEROUS BLOOD CLOTS

Infections can lead to heart attacks and strokes, and now British researchers say they have found they may also lead to deep vein thrombosis (DVT).

DVT is a blood clot that develops in a deep vein, usually in the lower leg. It can cause pain in the leg and potentially lead to complications, ranging from the relatively benign -- painless swelling of the leg -- to incapacitating -- chronic pain and leg sores. In worst cases, DVT can progress to a life-threatening pulmonary embolism, where a blood clot breaks free and enters the lungs.

In a report in the April 1 issue of *The Lancet*, Liam Smeeth, an epidemiologist with the London School of Hygiene and Tropical Medicine, and colleagues conclude that infections may trigger DVT. "Infection has often been suggested as a possible risk factor for deep vein thromboembolism, but the evidence has been inconsistent and potentially biased," Smeeth said. "We think this study really establishes that infection is a

risk factor for venous thromboembolism."

Both respiratory and urinary tract infections increase the risk for DVT, especially in the first two weeks after infection, Smeeth said. "The fact that the risk was raised by two different types of infection suggests that the risk of DVT may be due to the infectious process itself rather than a specific type of infection," he noted.

In their study, the researchers collected data on 7,278 patients who had DVT. They found that infections increased the risk of DVT by 20 percent, particularly during the first two weeks after infection. Based on this finding, Smeeth thinks doctors should be aware of this connection. "In assessing a patient with a suspected deep vein thrombosis or pulmonary embolism, a history of recent or current infection should increase clinical suspicion and supports the diagnosis of venous thromboembolism," he said.

Doctors also need to recognize that patients with infections are at heightened risk of DVT, particularly those already at high risk, such as cancer patients or people taking long-distance flights, Smeeth said. "The presence of infection should inform decisions about the use of prophylactic measures to prevent venous thromboembolism," he added.

Dr. Suresh Vedantham, an assistant professor of radiology and surgery at Washington University Medical School in St. Louis, thinks this study confirms that infections, or more specifically, inflammation, can play a role in DVT. It's "an interesting article which strengthens the already-suspected relationship between venous thromboembolism and infection/inflammation," he said. Any infection triggers an inflammatory response, which is the body's way of fighting the infection, Vedantham noted. "This study was not designed to determine exactly what aspect of infection/inflammation led to DVT. This article should contribute to a major impetus to better delineate the pathophysiologic mechanisms which lead to DVT," he said.

Specifically, doctors need to determine what components of the inflammatory response can predispose someone to DVT and whether this process can be safely and effectively interrupted, Vedantham said. "For example, if there are routine blood tests we can perform to detect markers of inflammation and thereby identify which patients are at higher risk, then we might treat patients with prophylactic measures to prevent DVT. That would be the major future potential ramification of this line of study."

Another expert, Dr. Jack Ansell, a professor of medicine at Boston University School of Medicine, thinks there's not enough evidence yet to understand how DVT develops in patients. In addition, he believes that while doctors should be aware of the findings of this study, it shouldn't worry patients. Infections are so common that if doctors made patients aware of this potential risk, it would cause more trouble than necessary, Ansell said. "The risk for a DVT from infection is so low, that, in general, people should not be concerned. It's too early to say what to do with these findings," he said. "It's way too early to treat patients prophylactically with an anticoagulant."

.....Source: Healthday News



LEG ARTERY DISEASE UPS RISK OF DEATH IN PEOPLE WITH DIABETES

Individuals with non-insulin dependent type 2 diabetes and reduced blood flow to the legs -- a condition known as peripheral artery disease or PAD -- are at increased risk for dying from a heart-related ailment, a study shows. Doctors can use a simple test called the ankle-brachial index (ABI) to detect PAD in diabetic patients. The ABI is the ratio of the blood pressure in the ankle to the pressure in the arm. Any value below 1 is considered abnormal and values below 0.25 indicate severe blood flow problems.

Dr. Paul E. Norman and colleagues from the University of Western Australia, Fremantle, examined the natural history of PAD in nearly 1,300 type 2 diabetics. They defined PAD as an ABI of no more than 0.90 on two consecutive tests or any PAD-related lower-extremity amputation. The prevalence of PAD at baseline was roughly 14 percent. Norman's team observed a strong independent association between both PAD and increasing age, systolic blood pressure, total serum cholesterol, and smoking. They also observed an association between an abnormal baseline ABI (no more than 0.90) and a 67 percent increased risk of heart-related death.

"PAD is relatively common in diabetic patients, even when stringent criteria for the diagnosis ... are used," Norman and colleagues point out in a report in *Diabetes Care* this month. "This further supports the American Diabetes Association's recommendation for regular screening in the context of optimized vascular (circulatory) risk management."

.....Source: *Diabetes Care* March 2006.



STRENGTH TRAINING CAN SLOW DOWN "MIDDLE-AGED SPREAD"

Science continues to uncover new benefits of strength training. One of the latest findings, presented at the 46th Annual Conference on Cardiovascular Disease Epidemiology and Prevention in March, suggests that strength training can prevent "middle-aged spread."

The Strong, Healthy, and Empowered (SHE) study was a randomized-controlled trial that examined whether regular strength training would prevent an increase in total body fat and/or an increase in intra-abdominal (belly fat) in women. There were 164 overweight and obese women (BMI between 25 and 35) who participated in the study. The women were randomly divided into two groups. One group attended strength training classes led by certified fitness professionals for 16 weeks, followed by booster classes held four times per year for two years. The other group (the control group) received a brochure that recommended 30 minutes of activity on most days of the week. Neither group received dietary counseling.

The researchers found that the group of women who attended the strength training classes decreased their total body fat percentage by 3.7 percent; the control group's body fat

percentage did not change at all. They also discovered that while the strength training group's intra-abdominal fat did increase by 7 percent over the two-year period, the control group's increased by 21 percent. That is a difference of 15 percentage points!

This study is important for two reasons. First, it shows that strength training is an effective way to reduce total body fat. Second, it shows that strength training can help to reduce the accumulation of intra-abdominal fat. This is especially important since intra abdominal fat is a strong predictor of heart disease.

.....Source: Miriam E. Nelson, Ph.D.



MAGNESIUM MAY WARD OFF METABOLIC SYNDROME

Eating foods rich in magnesium may help prevent metabolic syndrome, report researchers who followed a large group of people over 15 years. They found those who consumed the most magnesium had about a 31-percent reduced risk of developing the condition than those who consumed the least.

Researchers say metabolic syndrome is a collection of conditions, including high blood pressure, high triglycerides, lower levels of HDL, or good cholesterol, higher waist circumference, and higher than normal blood sugar. People with metabolic syndrome are at significant risk for heart disease and diabetes.

This study was carried out among more than 4,600 people between ages 18 and 30 when the study began in the mid-1980s. Researchers divided the participants into four groups according to their consumption of magnesium. By the 15-year follow up, 188 people in the group consuming the least amount of the nutrient had developed metabolic syndrome, compared with just 117 of those in the group consuming the most.

While stopping short of recommending magnesium for the prevention of metabolic syndrome, study authors believe these results deserve further study. "Will higher magnesium intake prevent people from developing metabolic syndrome, which leads to diabetes and coronary heart disease? Further studies, particularly well-designed randomized trials, are warranted."

Magnesium-rich foods include halibut, dry roasted almonds and cashews, whole-grain cereals, long-grain brown rice, bananas and raisins, kidney and pinto beans, spinach and avocados.

.....Source: Ivanhoe.com



EVERYDAY FOODS MAY YIELD MEDICINAL BENEFITS

Grape seeds, chives and Korean pine nut oil might have more in common than their ability to add zest to meals. According to new research, all three foods may help boost health and fight disease.

The three studies were presented March 26-28 at the American Chemical Society annual meeting, in Atlanta. They highlight, respectively, grape seed extract's ability to lower

blood pressure; chives' capacity to protect against salmonella and other food-borne illnesses; and pine nut oil's power to suppress appetite.

Although the results are preliminary, they point the way to more in-depth studies, the researchers said.

"I am very optimistic about our research," said chive study lead researcher Salam A. Ibrahim, from the department of food science and nutrition at North Carolina A&T State University, in Greensboro, N.C.

Ibrahim and his colleagues noted that although many plant, herb and mushroom extracts demonstrate antimicrobial properties, chives seem to have the most potent effect against 38 strains of salmonella -- the most common bacterial food-borne illness. The researchers purchased chives from a local Greensboro store and cut, blended and mixed down the food to obtain chive extract. Lab tests with various quantities of the extract revealed that, in sufficient quantities, chives can inhibit salmonella activity without the need for additional irradiation or chemical preservatives.

However, when the chive extract was heated above 121 degrees Celsius for 15 minutes the antibacterial effect was completely lost. As well, Ibrahim noted that the 800 microliters of chive extract needed to produce a 100 percent protective effect against salmonella was much higher than most people would find appetizing.

One solution to the problem might be through combining of chives with other natural and/or chemical preservatives. "We have a formula that looks very promising and has no effect on flavor, while at the same time protecting against salmonella," Ibrahim said. In the meantime, adding chives to everyday foods should still be considered a healthy move, he said.

Grape seed extract may have its own health benefits, another study showed. The study involved 24 men and women diagnosed with "metabolic syndrome," a condition characterized by cardiovascular risk factors such as high blood pressure and obesity. After four weeks, patients who had consumed either 150 milligrams or 300 milligrams of grape seed extract a day experienced a significant drop in both systolic and diastolic blood pressure, while those taking a placebo underwent no change. "I think this is not going to be a standard treatment for high blood pressure, I want to make that clear," said researcher Dr. G. Tissa Kappagoda, of the department of internal medicine at the University of California at Davis. "But it may be a potential tool for people who are prehypertensive, as part of a lifestyle management routine that includes weight management and exercise. In that context, grape seed extract may prove useful."

The third study was led by Jennifer L. Causey, of Lipid Nutrition Co. Her work focused on Korean pine nuts and their potential effect on weight loss. Causey explained that the nuts contain a high amount of an oil called pinolenic acid, which has been shown in laboratories to stimulate the release of two appetite-suppressing hormones, CCK and GLP1. The study involved 18 overweight women. In the four-hour period following consumption of 3 grams of the pinolenic acid in gel

capsule form, hormone levels were found to rise, and the women's appetites fell by approximately a third. These fatty acids have been found to impact satiety, or the feeling of fullness, and may be beneficial as part of a weight-loss program that includes diet and exercise, Causey said. The results are exciting from a consumer perspective, since they show scientific evidence for a satiety effect, she said. Causey added that more studies are currently in the works.

Dr. Ken Fujioka, director of the department of nutrition and metabolism within the department of endocrinology at the Scripps Clinic in San Diego, expressed support for the preliminary findings. "All [these foods] certainly have the possibility to do what the researchers saw," he said. "The pine nut, in particular, has been noted before as an appetite-controller, so their finding makes sense. The question would be, 'Is it enough to make a clinical difference?' And it could very well do that. The chives finding is not surprising either ... and could be a great idea to help cope with a meal that maybe we shouldn't have eaten. And many blood pressure medications -- particularly the earlier ones -- started off from natural plant sources. So, all of these findings seem reasonable."

While agreeing that the research holds considerable promise, Lona Sandon, a spokeswoman for the American Dietetic Association, cautioned that the use of food to alleviate medical concerns is not always as simple as it seems. "For example, they've been looking at grapes for years, so it's not that surprising, but I'm concerned that the extract alone is not the best choice," said Sandon, who is also assistant professor of clinical nutrition at the University of Texas Southwestern Medical Center, Dallas. "There are so many components in the grape that act together synergistically to give you the biggest bang for your buck, that if you take one out you may not be getting the full benefit for your health. And although I'm not that familiar with the pine nut research, I would want to know how much you would have to eat to get this result, because if it's a lot then you're taking in a lot of fat and calories to get the appetite-suppressing effect. As well, while adding chives might be an organic way to protect produce, it's not a replacement for what we do in the kitchen: washing hands, proper storing of food at proper temperatures, and the need to cook foods at proper temperatures." ...Source: HealthDay New



THINNER AND YOUNGER BY EATING A LOW-CALORIE YET NUTRITIONALLY BALANCED DIET

Can eating a low-calorie yet nutritionally balanced diet extend human life? Preliminary research suggests it might, so researchers at Washington University School of Medicine in St. Louis are launching a long-term study to find out.

In an editorial in the April issue of the *Journal of the American Medical Association*, Luigi Fontana, M.D., Ph.D., assistant professor of medicine at Washington University and an investigator at the Istituto Superiore di Sanita in Rome, Italy, says calorie-restricted diets point to possible mechanisms of aging and suggest ways to intervene and modify its effects.

In January, Fontana and colleagues found that after an average of six years on calorie restriction, people's hearts functioned like the hearts of much younger people. And a team from the Pennington Biomedical Research Center at Louisiana State University in Baton Rouge is reporting that six months of calorie restriction reduces two key markers of aging: fasting insulin levels and body temperature.

More than a decade ago several researchers, including John O. Holloszy, M.D., professor of medicine at Washington University, demonstrated that stringent and consistent caloric restriction increased the maximum lifespan in mice and rats by about 30 percent and protected them against atherosclerosis and cancer.

Human study has been difficult because calorie restriction requires a very strict diet regimen, both to keep the total number of calories low and to insure that people consume the proper balance of nutrients. Some people from a group called the Calorie Restriction Society are devoted to limiting their caloric intake in hopes of improving their health and extending their lives. Society members, who call themselves CRONies (Calorie Restriction with Optimal Nutrition), have developed ways to eat low calorie/high nutrition diets.

Fontana has done extensive research with CRONies, most recently reporting in the January issue of the *Journal of the American College of Cardiology* that the hearts of people on calorie restriction appeared more elastic than those of age- and gender-matched control subjects. Their hearts were able to relax between beats in a way similar to the hearts of younger people.

The team from the Pennington Biomedical Research Center reports in the April issue of the *Journal of the American Medical Association* on a six-month study of men and women between 25 and 50 who were placed on a calorie restriction diet that lowered their daily caloric intake by about 25 percent. The researchers compared those on calorie restriction to subjects who either had not been on a diet, had cut calories by about 12.5 percent and increased the energy they burned through exercise by a like amount, or had spent six months on a standard low-calorie diet of about 1,800 to 2,000 calories per day until they had lost 15 percent of their body weight.

The study, called the Comprehensive Assessment of the Long Term effects of Reducing Intake of Energy (CALERIE), found that all subjects who dieted or increased their exercise lost weight and body fat. But those on a calorie restriction diet ended the study with lower fasting insulin levels and lower core body temperatures. They also had less oxidative damage to their DNA, thought to be a marker of aging at the biochemical and cellular level.

"This study has laid the groundwork for future research into the long-term effects of calorie restriction in humans to see whether it really can extend lifespan," Holloszy says. "It's becoming clear from studies with the CRONies -- and from this brief, prospective study -- that calorie restriction does change some of the markers we associate with aging."

Holloszy and Fontana are getting ready to launch a second phase of the CALERIE study, to look at the effects of calorie

restriction over the course of two years. "We know people on calorie restriction will lose weight," says Fontana. "But this study isn't a weight-loss study. We're hoping to learn more about whether calorie restriction can alter the aging process."

Fontana says, for example, that low-grade, chronic inflammation seems to mediate aging. Overweight and obese people tend to have higher levels of inflammation than lean people, so it makes sense that losing weight might increase average lifespan by lowering the risks of some age-related diseases, such as diabetes and atherosclerosis. But in animal studies not only did more of the animals live longer, the maximum length of a rat's or mouse's life also increased. The CALERIE study hopes to get some clues about whether calorie restriction might do the same thing for humans.

"We want to learn whether calorie restriction can reverse some of these markers of aging in healthy young people," Holloszy says. "It's going to be many years before we know whether calorie restriction really lengthens life, but if we can demonstrate that it changes these markers of aging, such as DNA damage and inflammation, we'll have a pretty good idea that it's somehow influencing the aging process at the cellular level."

Currently, Holloszy and Fontana are beginning to recruit volunteers for Phase II of the CALERIE study.

....Source: Washington University School of Medicine



BETTER BUTTER

1/2 cup butter (1 stick), at room temperature

1/2 cup canola oil or olive oil

Put butter and oil in a blender or food processor and blend until thoroughly combined. This "Better Butter" will be the consistency of yogurt or thick cream.

Spoon it into a bowl, or mold. Cover and put in the refrigerator to firm.

Makes 1 cup.

Variations:

Add herbs or fresh crushed (not powdered) garlic.

"Better Butter" has half the saturated fat of regular butter and, unlike most margarines, negligible amounts of hazardous trans-fatty acids.

Another advantage: It spreads well at refrigerator temperature.

Per teaspoon: 37 calories, 5mg cholesterol, 4g fat (1g saturated fat when made with canola oil, 2g when made with olive oil).

.....Source: Jean Carper, Nutritionist



“Your prescription is cheaper if you buy it in bulk.”

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