

EFFORTS

Emphysema Foundation For Our Right To Survive



Emphysema Takes Your Breath Away

October 2005

DUKE HEALTH BRIEF: PATIENTS CAN BE THEIR OWN BEST ADVOCATE

Innovative technology, new medications and a host of websites devoted to consumer health information have both helped and hindered patients when they visit their doctor. There are, however, simple steps that can be taken to better the next physician visit and help patients become their best health care advocates, according to a physician who specializes in patient and physician advocacy.

"Health care has become increasingly complicated," said Michael Cuffe, M.D., vice president of medical affairs at Duke University Health System. "Today, the numbers of drugs, the options, and the cost of care are much more complicated than even ten years ago. That also means it takes more time and it's more complicated to describe options and address concerns the patient may have. All of this coincides with more health information available in the consumer marketplace."

Television reflects this, Cuffe pointed out. "In classic TV shows of the 60s and 70s, doctors were portrayed as all-knowing and very paternalistic, and patients rarely questioned their doctor's advice. Medicine was much simpler then." Simpler, but tougher on patients who couldn't get access to pertinent health information the way they can today.

"We want patients to be informed consumers. We now have healthcare spending accounts where people are expected to pick their preventive care, select aspects of their care, and also to be educated about all the costs involved," Cuffe added. "So the demands on the physician-patient interaction are probably greater now than they have ever been before."

There are several ways to maximize the effectiveness of a doctor's visit, he said. The steps require a small amount of planning and organizing, but should reap dividends in a greater understanding of the health concerns.

Cuffe advised:

- Always know your medications and have a list with you when you go for your doctor's visit. "Better yet," he said, "Bring the bottles with you so that there is no confusion over what is being taken or the dosage."
- "If you have a trusted relative or friend, someone with whom you are comfortable sharing privileged health information – involve them in your care. This person could be a spouse, an adult child, even a close friend that could accompany you to the visit, Cuffe said. Have them sit in on the discussion with your physician so that both of you have heard the information. That way, if there is a question later on, both of you can be clear on what you heard."

This is especially true for anyone who has been hospitalized, Cuffe said. "The hospitalized patient is often sicker and is less able to fully understand everything that is happening," he said. "Hospitalization is often the most challenging health situation and the pace of care can be perceived by the patient as very fast."

Other tips Cuffe advised are:

- Become knowledgeable about your medical history and current problems. Patients should do their best either through the public library or the internet to track down additional information about their condition from reputable sources for health information. Cuffe recommends websites such as those of the American Heart Association (for anyone dealing with vascular diseases), the National Institutes of Health, and academic medical centers like Duke and others, for fair and balanced information that is free of commercial bias.
- Write down your questions before your physician visit. Cuffe recommended that patients keep a binder with their health care records and, as they think of questions about their condition or course of treatment, write them down in the binder. Take the binder to your doctor's visit so that you can remember what you wanted to ask and check off the questions as you ask them.

"This actually takes less time and ensures that you get those questions answered rather than risk forgetting to ask your questions and then having to try to get back in touch with your physician later on," Cuffe added. "These are the most beneficial steps I've recommended to my patients, and I've put them into practice for myself and my family."

.....Source: <http://www.dukehealth.org>

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U.S. DEATH TRENDS SHIFTING

America's leading causes of death are changing, researchers report in The Journal of the American Medical Association. The nation's six leading causes of death -- heart disease, stroke, cancer, chronic obstructive pulmonary disease (COPD), accidents, and diabetes -- were traced from 1970 to 2002. During that time, these trends emerged:

Stroke deaths: down 63 percent
Heart disease deaths: down 52 percent
Accident deaths: down 41 percent
Cancer deaths: down 2.7 percent
Diabetes deaths: up 45 percent
COPD deaths: up 102 percent

The researchers included Ahmedin Jemal, DVM, PhD, of the American Cancer Society.

Keeping Death At Bay

The trends are based on the age-standardized death rate. That's the number of people who die per 100,000 people of different age groups (40s, 50s, 60s, 70s, and 80s or older). The age-standardized death rate from all causes fell 32 percent from 1970 to 2002.

Of course, life doesn't last forever. As America's population grows and ages, the nation's total number of deaths from those conditions continues to rise. But those deaths are striking at older ages than before, write Jemal and colleagues.

Reasons For The Trends

The drop in four of the six leading causes of death shows "progress" in disease prevention and life extension, write the researchers. Heart disease and stroke had bigger death rate drops than cancer. Deaths from all cancer types combined rose from 1970 to 1990, and then fell through 2002, write the researchers.

Stop-smoking efforts, speed limits, and seat belt laws probably helped more people live longer, write the researchers. They note that America's obesity problem could be boosting diabetes deaths, and long-term effects of smoking could explain why COPD (emphysema and chronic bronchitis) deaths more than doubled. Jemal and colleagues list these leading causes of death in 2002:

For adults younger than 40: accidents

For people aged 40-74: cancer

For people aged 75 and older: heart disease

A Long, Healthy Life

It may be possible to cut your risk of many of those deadly conditions by quitting smoking, getting in shape, eating healthfully, staying active, and getting recommended health screenings. Check in with your doctor or health care provider to learn how to add years to your life and life to your years.

....Source: JAMA, Sept. 14, 2005; vol 294: pp 1255-1259.

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STEROID WITHDRAWAL

In the early 1950s, research leading to the use of cortisone won a Nobel Prize. The drug simulated cortisol, a naturally occurring, anti-inflammatory hormone produced by the adrenal glands. Such corticosteroid drugs (prednisone, prednisolone, and others) have since benefited many, and are commonly used to treat many conditions including allergic reactions, asthma, rheumatoid arthritis, and inflammatory bowel disease. But they are not without serious drawbacks. The two major problems related to continuous steroid treatment are drug side effects and symptoms due to changes in the balance of normal hormone secretion. The latter results from taking doses greater than our body's natural production (about 7.5 mg of prednisone per day). Thus, steroids are typically given for the shortest possible time possible. Once we begin to decrease or discontinue the dose, however, withdrawal symptoms may occur.

What are steroid withdrawal symptoms?

Steroid withdrawal symptoms can mimic many other medical problems. Weakness, fatigue, decreased appetite, weight loss, nausea, vomiting, diarrhea (which can lead to fluid and electrolyte abnormalities), and abdominal pain are common.

Blood pressure can become too low, leading to dizziness or fainting. Blood sugar levels may drop. Women also may note menstrual changes. Less often, joint pain, muscle aches, fever, mental changes, or elevations of calcium may be noted. Decrease in gastrointestinal contractions can occur, leading to dilation of the intestine (ileus).

Going off steroids

Over the years, researchers began to learn why some patients develop symptoms of decreased adrenal function, while others never do. The production of corticosteroids is controlled by a "feedback mechanism," involving the adrenal glands, the pituitary gland and brain-the Hypothalamic-Pituitary-Adrenal Axis" (HPAA). The continuous administration of corticosteroids inhibits this mechanism, causing the HPAA to "hibernate."

We now know that the amount of the drug needed to suppress the HPAA varies from person to person. As a general rule, using large doses for a few days, or smaller doses for more than two weeks, leads to a prolonged decrease in HPAA function.

Thus, steroid use cannot be stopped abruptly. Tapering the drug gives the adrenal glands time to return to their normal patterns of secretion. (It may take a period of time for things to get completely back to normal). How quickly steroids can be tapered depends on continued control of the underlying disease with decreasing doses, and on how quickly our body adjusts to the need to produce its own hormones. If things go well, four to six weeks (or longer) is a reasonable period.

Unfortunately, tapering may not always completely prevent withdrawal symptoms. Present thinking suggests that steroid withdrawal may involve many factors, including a true physiological dependence on corticosteroids. Further, tests of HPAA function do not always correlate with a patient's symptoms, and these tests are of no value while taking steroids. Therefore, it can be difficult to determine the true cause of a patient's symptoms or how he/she may react to stress (for example, from a disease flare-up, procedure, or surgery). Restarting or increasing dosage may be the only solution.

Taking steroids every other morning gives the body a better chance to recover function. The day without the hormone allows natural stimulation of the hypothalamus and pituitary glands. Thus, alternate-day therapy is ideal, if possible, once the disease is under control. It is still not clear whether new steroids being developed will be available to decrease the risks of side effects and HPAA suppression.

We must assume that all patients exposed to steroid therapy for even a short time have diminished HPAA function. Patients who have taken steroids noticing any of the above or other unusual symptoms should notify their doctor. Keep in mind that some medications or alcohol can increase the need for larger steroid doses. You should carry a list of all your medications in your wallet to alert medical personnel in case of emergency. This is especially important if you are receiving steroid therapy or have recently stopped taking steroids. Supplementation may be needed during periods of stress, even up to a year after stopping corticosteroid therapy.

Steroid Withdrawal At A Glance

-Synthetic cortisone medications (corticosteroids) simulate cortisol, a naturally occurring, anti-inflammatory hormone produced by the adrenal glands. Such drugs (e.g., prednisone) have since benefited many, but are not without serious drawbacks.

-The two major problems related to continuous steroid treatment are 1) drug side effects and 2) symptoms due to changes in the balance of normal hormone secretion (withdrawal symptoms).

-The production of corticosteroids is controlled by a "feedback mechanism," involving the adrenal glands, the pituitary gland and brain—the "Hypothalamic-Pituitary-Adrenal Axis" (HPAA).

-Using large doses for a few days, or smaller doses for more than two weeks, leads to a prolonged decrease in HPAA function.

-Steroid use cannot be stopped abruptly; tapering the drug gives the adrenal glands time to return to their normal patterns of secretion.

-Withdrawal symptoms (weakness, fatigue, decreased appetite, weight loss, nausea, vomiting, diarrhea, abdominal pain) can mimic many other medical problems. Some may be life-threatening.

-Tapering may not completely prevent withdrawal symptoms; steroid withdrawal may involve many factors, including a true physiological dependence on corticosteroids.

-Patients should carry a list of all your medications in your wallet to alert medical personnel in case of emergency.

-Supplementation with corticosteroid medication may be needed during periods of stress (such as surgery), even up to a year after stopping corticosteroid therapy.

.....Source: <http://www.medicinenet.com>

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EMBRYONIC STEM CELLS FOUND TO ACQUIRE MUTATIONS***Abnormalities Could Produce Tumors; Scientists Say Evidence May Point to Need for Fresh Colonies***

Human embryonic stem cells, treasured by researchers because of their potential to help rejuvenate ailing organs, do not remain as ageless and perpetually unblemished as scientists once thought, according to a new research report. Like ordinary cells, stem cells accumulate significant numbers of mutations over time, including several that could cause them to become tumors.

Embryonic stem cells, obtained from days-old human embryos, can morph into all kinds of tissues. They divide repeatedly in laboratory dishes, churning out self-replenishing colonies indefinitely -- a trait that has lent them a reputation as virtual fountains of youth. Researchers hope to harvest batches of the cells periodically from master colonies and turn them into various kinds of tissues for transplantation into patients.

But the longer stem cells are cultivated -- and the more cell divisions they undergo -- the more mutations build up in their genes, Aravinda Chakravarti of Johns Hopkins Medical Institutions and his colleagues reported in the journal *Nature Genetics*.

The team measured the number of mutations and other DNA abnormalities in nine colonies of cells approved for use by federally funded researchers and compared the extent of the abnormalities before and after each lineage was subjected to a dozen or more rounds of cell division.

Previous efforts using relatively crude tools had found little evidence of changes, leading some scientists to conclude that the cells were largely protected from the ravages of everyday genetic wear and tear. But using sensitive "gene chips" that can identify subtle molecular changes in thousands of genes simultaneously, the team found that several colonies harbored increasing numbers of mutant cells over time.

Some of the mutations are known to play a role in transforming normal cells into rapidly dividing cancer cells. With that growth advantage, such cells can quickly outnumber others in a colony. Transplanting such cells into a patient could cause more medical problems than they would be likely to solve, scientists said.

Chakravarti warned that the work needs to be confirmed by additional experiments. "But if it turns out these cells really do become unstable over time," he said, "then that would put limits on the practical life spans of the cells and their usefulness for therapeutic purposes."

It is not known whether embryonic stem cells accumulate mutations to a greater or lesser extent than other cells in laboratory cultures. Chakravarti and others said they suspect that adult stem cells -- touted by some as a more ethical alternative to embryonic cells, whose retrieval requires the destruction of human embryos -- probably share the problem. No studies have been done. But the work does suggest that it might be necessary to test stem cells carefully before using them in treatments, to make sure they have not acquired potentially dangerous mutations, several scientists said.

.....Source: The Washington Post Company

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FOREVER YOUNG: DIGGING FOR THE ROOTS OF STEM CELLS

Researchers have now shown how a trio of proteins controls whether an embryonic stem cell takes an irreversible step toward developing into specific tissues or retains its raw potential to become a blood cell, bone cell, brain cell, or any other kind of cell.

Stem cells' unique capacity to develop into any type of cell—a property known as pluripotency—underlies their medical promise. Researchers argue that this trait could someday lead, for example, to lab-grown tissue and organs that would be useful for transplants.

The scientists set out to determine what genes define a stem cell. "We thought if we could uncover this network of genes, then we could see how pluripotency is established," says Laurie A. Boyer of the Whitehead Institute in Cambridge, Mass. And with knowledge of the mechanics behind pluripotency, she says, scientists might learn to reprogram a mature cell so that it, too, could have the pluripotency of a stem cell.

Boyer and her collaborators investigated three proteins known to play defining roles in keeping stem cells from

developing into a specific cell type. The proteins, dubbed Oct4, Sox2, and Nanog, are classified as transcription factors. As such, they bind to specific genes and regulate the genes' activities. Scientists didn't know how these three transcription factors maintain stem cell pluripotency.

To fill that information gap, the researchers identified the genes to which Oct4, Sox2, and Nanog bind. In the Sept. 23 Cell, the researchers report that these three transcription factors attach to a region of the genome that contains genes that other researchers have shown to control cell development. At least one factor bound to each of 2,260 genes.

The researchers also found that 1,303 of these genes were active in the stem cell and that the protein products of some of these genes, in turn, activated more genes. At the same time, the three factors repressed many genes essential for stem cells to differentiate into specific cell types during embryonic development.

The findings suggest that Oct4, Sox2, and Nanog are "master regulators," Boyer says. "These three shut off differentiation and allow for a pluripotent state." Besides discovering that pivotal role for these regulators, the researchers mapped out the molecular biology behind pluripotency. Because all three regulators bind to 353 of the genes, the researchers concluded that the regulator proteins work together in keeping a stem cell undifferentiated.

The research also suggests that Oct4, Sox2, and Nanog interact in a complex way that controls how much of each of the three proteins is present in the cell. The work by Boyer's group "identifies a cohort of genes" that are targets of these master regulators, comments Ian Chambers of the University of Edinburgh. This is a starting point to test more aspects of the stem cell regulatory network, he says.

To tease out additional molecular details, Boyer's group plans to perturb the proteins and genes underlying stem cell behavior and to observe how the cells respond. This work, Boyer predicts, will provide more insights both about pluripotency in stem cells and about the remarkable process by which a single fertilized cell becomes an entire organism.

.....Source: sciencenews.org

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SOMETHING FOR FRIENDS AND RELATIVE OF OUR UK MEMBERS

Researchers from Imperial College London are looking for volunteers to test whether cannabinoids, the active ingredient of cannabis, can be used to alleviate the sensation of breathlessness caused by illnesses such as chronic obstructive pulmonary disease (COPD). The team are looking for volunteers aged between 50 and 70, who don't have breathing difficulties.

Dr Elspeth Pickering, clinical research fellow, from Imperial College London and Chelsea and Westminster Hospital, says: "Despite the best efforts of scientists for many years, no one has been able to develop a way to deal with the sensation of breathlessness without suppressing the drive to breathe. Breathlessness can have a major impact on the quality of life for patients with respiratory diseases, and by using a cannabinoid, we hope to find a way to block the mechanism which causes it."

The researchers believe the cannabinoids could be used to reduce the sensation of breathlessness without depressing the respiratory system.

The study will take a morning on two different days, during which time volunteers will be hooked up to a circuit to regulate and measure their breathing. Carbon dioxide will be added to the air breathed by the volunteers, causing the sensation of breathlessness. This is a safe method of simulating breathlessness as the body naturally produces carbon dioxide. Afterwards the volunteers will be given a spray which includes tetrahydrocannabinol (THC), the active ingredient in cannabis, which researchers hope will reduce the sensation of breathlessness.

Dr Anita Holdcroft from Imperial College London and Chelsea and Westminster Hospital, and study leader, adds: "The special formulation of the drug as a spray avoids the harmful effects of smoking cannabis. We hope the drug will stop the sensation of breathlessness, potentially providing a new way to deal with respiratory diseases."

The study will be conducted at Charing Cross Hospital in west London. Volunteers will be paid for their time committed to the study. Volunteers aged between 50 and 70 who don't have breathing difficulties and wish to take part should call 020 8846 1234 ext. 7055 to register their interest.

.....Source: <http://www.imperial.ac.uk/P6787.htm>

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A DOSE OF HERBAL REALITY

Do you reach for echinacea instead of NyQuil when you get the sniffles? Have you been taking ginkgo biloba faithfully to keep your memory sharp? Do you think St. John's Wort can alleviate your depression as well as Zoloft or Paxil can?

If so, you're among the millions of Americans who use natural and herbal products for health reasons. In 2002, nearly one in five American adults bought natural supplements to treat everything from arthritis and anxiety to hypertension, menopause and insomnia.

But for some natural products, medical claims are based more on folklore than fact. And unlike drugs sold by prescription or over the counter, natural and herbal supplements can be sold without any proof of safety or effectiveness. The U.S. Food and Drug Administration (FDA), which regulates dietary supplements, does not verify what's actually in them. It can take action only after an unsafe product reaches the market.

Results of testing by other agencies sometimes give pause. For example, the National Center for Complementary and Alternative Medicine, an arm of the National Institutes of Health, funded a 2001 study that found most ginseng supplements contained less than half the potency advertised. And a 2003 study in the Archives of Internal Medicine reported that about half the 59 echinacea products analyzed did not contain the species listed on the label.

"With the lack of regulation and standardization, how can a patient be sure that the ginkgo biloba on a store shelf even contains ginkgo at all, much less in what dosage?" asks Dr. Jonathan LaPook, an internist and gastroenterologist at

Columbia University Medical Center in New York.

Yet even when supplements contain what the labels say they do, and even when they are taken in the recommended dose, they might not deliver the desired medical benefit. Many herbal and natural supplements haven't been tested through rigorous clinical trials to measure their effectiveness.

For instance, a mini physician's guide to herbs and supplements published by the University of Washington's Department of Family Medicine notes that such popular products as milk thistle, chamomile and feverfew lack significant data to back up their purported health benefits.

One instance where rigorous testing made news was last month when the New England Journal of Medicine published the results of a large federally funded study that found echinacea, the top-selling herbal medicine in the U.S., was no more effective in preventing and treating colds than a placebo.

The study's authors concluded that numerous previous studies failed to demonstrate echinacea's effectiveness — and that the herb should be considered an ineffective remedy for colds until proven otherwise.

A history of herbal use

"Herbs have been used for medicinal purposes for thousands of years — far longer than conventional drugs — and generally they have good safety records," said LaPook, co-author of *The Columbia University College of Physicians & Surgeons Complete Home Medical Guide* (Crown Publishers, 1995).

Lack of rigorous testing doesn't necessarily mean herbal remedies are ineffective or unsafe, but that they haven't been proved otherwise.

Some herbal remedies mature to become recognized in the world of conventional medicine. Aspirin, after all, was derived from a compound in willow bark, and digitalis, a key ingredient in drugs that control heart rate, was derived from the foxglove plant.

More and more American physicians are incorporating alternative therapies into their practices. LaPook said he often recommends ginger for patients with nausea.

But dangers can arise when patients don't tell their doctors they're taking herbs and supplements. Ginger and garlic, for instance, can interfere with blood clotting. That's why, to prevent excessive bleeding, LaPook orders patients to stop all herbs and supplements before he performs a colonoscopy.

A 1993 study published in the *New England Journal of Medicine* found that a third of Americans used unconventional therapy in the previous year, but 72 percent of them did not tell their medical doctor they were doing so.

"It is crucial to remember that herbs are medicine and therefore can have side effects," LaPook said.

Supplement cautions

Even practitioners of alternative medicine, though they prescribe herbal remedies, recommend consumers seek professional advice before taking them.

Kathie Golden, a naturopathic doctor at Bastyr Center for Natural Health in Wallingford, a teaching clinic for Bastyr University, said botanical or natural products can be a gentler alternative to conventional drugs. For example, Golden said, patients who take goldenseal, an herb with antiseptic properties,

might avoid upset stomach and other side effects associated with antibiotics.

Golden said she conducts quality reviews for products sold at Bastyr's dispensary in Wallingford. Consumers elsewhere may want to check for one of several independent "seals of approval" for supplement quality. One such stamp, called the Good Manufacturing Practices seal, is issued by The National Nutritional Foods Association, a trade group, for products that meet standards for truth in labeling and ingredient quality.

Medical experts say pregnant and nursing women, children, the elderly and patients undergoing surgery should be extremely careful about taking herbal or natural products or shouldn't take them at all.

Golden recommends that patients interested in supplements consult naturopaths, who receive formal training in nutrition and botanical medicine that most conventional physicians lack.

"A person shouldn't be making decisions about what dose (of herbal supplements) to take any more than they should decide what dose of penicillin to take," Golden said.

The 10 most popular natural products

The 10 most popular nonvitamin, nonmineral natural products used in the United States:

Echinacea

-Source: Purple coneflower, a medicinal plant native to North America.

-Estimated users (2002): 14.7 million.

-Medical uses: To prevent or treat symptoms of colds or flu; boost immune system.

-Clinical verdict: America's best-selling herbal medicine might be no better than a placebo. A study published in July in the *New England Journal of Medicine* found no significant differences among 437 volunteers, some who were infected with cold viruses and treated with 300-milligram doses of echinacea or placebos. Critics of the study contend the echinacea dosage was too low to be effective.

-Adverse effects: Few side effects reported. Could cause allergic reaction, especially in people sensitive to ragweed and related plants.

Ginseng

-Source: Root of ginseng, a perennial herb.

-Estimated users: 8.8 million.

-Medical uses: To control diabetes, to treat fatigue. Asian ginseng has been used for thousands of years as a general body tonic.

-Clinical verdict: Limited research suggests ginseng might help reduce blood-sugar levels after meals. Many different species are grown in Asia and North America, making uniform clinical studies difficult.

-Adverse effects: Can increase the stimulant effects of caffeine.

Ginkgo biloba

-Source: Leaf of the ginkgo biloba, among the world's oldest living trees.

-Estimated users: 7.7 million.

-Medical uses: To treat memory and circulation problems.

-Clinical verdict: No conclusive evidence exists that

ginkgo biloba prevents or treats Alzheimer's disease. A 2002 study published in the Journal of the American Medical Association found it did not enhance memory in older, healthy people. A study funded by the National Center for Complementary and Alternative Medicine on whether ginkgo biloba prevents or delays mental decline in people 85 and older is being completed.

-Adverse effects: Could impede blood clotting, especially taken with aspirin. Stop taking before surgery to minimize the chance of excessive bleeding. Might interact with psychiatric drugs and drugs that affect blood-sugar levels.

Garlic

-Source: Garlic bulb.

-Estimated users: 7 million.

-Medical uses: To lower cholesterol levels and blood pressure.

-Clinical verdict: Studies have found small, but statistically significant, short-term reduction in cholesterol in patients taking garlic preparations. For reasons that aren't clear, the benefits don't seem to last beyond six months. Garlic is far less effective in reducing cholesterol levels than are prescription drugs.

-Adverse effects: Generally safe. Can reduce the effectiveness of other drugs, including cyclosporin, an anti-organ rejection medication, as well as antiviral HIV drugs. Can interfere with blood clotting and cause upset stomach.

Glucosamine

-Source: Shell of crabs and other shellfish.

-Estimated users: 5.3 million.

-Medical uses: To treat osteoarthritis, also known as degenerative joint disease.

-Clinical verdict: Occurs naturally in and around cartilage. Researchers believe it inhibits inflammation and promotes the growth of cartilage cells. Studies generally have shown that glucosamine works well for pain and symptoms of osteoarthritis and that it might help slow the disease's progress. Glucosamine is often paired with chondroitin, another natural substance.

-Adverse effects: Generally safe. Might cause diarrhea or constipation.

St. John's Wort

-Source: St. John's, a perennial weed.

-Estimated users: 4.4 million.

-Medical uses: To treat depression, anxiety.

-Clinical verdict: Can be effective in relieving symptoms of mild depression. Evidence is less conclusive about whether St. John's Wort works on severe depression. However, a study published in February in the British Medical Journal found it worked at least as well as the prescription antidepressant paroxetine (Paxil) for moderate to severe major depression. What's more, patients taking St. John's Wort suffered fewer side effects, such as dry mouth and dizziness.

-Adverse effects: Reduces the effectiveness of other medications by speeding up their elimination from the body. Organ-transplant patients taking the anti-rejection drug cyclosporin along with St. John's Wort have suffered organ rejection. Should not be taken by anyone on anti-HIV drugs, birth-control pills, hypertension medication and other drugs because of the possibility of serious interactions.

Peppermint

-Source: Oil extracted from the peppermint plant.

-Estimated users: 4.3 million.

-Medical uses: To treat irritable bowel, indigestion.

-Clinical verdict: Evidence suggests peppermint acts to reduce gas and thus relieves symptoms of irritable-bowel syndrome, including abdominal pain, flatulence and diarrhea.

-Adverse effects: Generally safe. Should not be taken by anyone with liver disease or obstructed bile ducts. Should not be applied under the nose of infants and young children because it could cause a temporary halt to breathing.

Fish oils/omega fatty acids

-Source: Polyunsaturated fats found in cold-water fish such as tuna, salmon and mackerel.

-Estimated users: 4.2 million.

-Medical uses: To lower high cholesterol, high blood pressure.

-Clinical verdict: The Food and Drug Administration allows supplement makers to make "qualified health claims" for omega-3 fatty acids. The FDA says research is "supportive but not conclusive" that consuming fish oils — either through supplements or in fish — helps reduce the risk of coronary heart disease.

-Adverse effects: Tuna, catfish, pollock and many other fish can contain mercury, a pollutant that can cause neurological problems in fetuses and young children. Pregnant women, nursing mothers and young children are advised to limit consumption of fish. Fish-oil supplements should not contain any mercury.

Ginger

-Source: Root of the perennial ginger plant.

-Estimated users: 3.8 million.

-Medical uses: To treat nausea and vomiting.

-Clinical verdict: Considered effective against pregnancy-related nausea. Limited data suggest it might also prevent motion sickness. A study funded by The National Center for Complementary and Alternative Medicine is under way to determine whether ginger and turmeric can reduce inflammation associated with arthritis and asthma.

-Adverse effects: Generally safe, but it can interfere with blood clotting if taken in large amounts. Could cause heartburn.

Soy supplements

-Source: Soybean plant.

-Estimated users: 3.5 million.

-Medical uses: To control cholesterol; to control, treat heart disease.

-Clinical verdict: Controlled clinical studies have shown that soy protein helps lower total cholesterol levels and low-density lipoprotein ("bad" cholesterol). The FDA in 1999 allowed makers of soy-based foods to tout soy's health benefits on the label. To do that, the food must contain at least 6.25 grams of soy per serving and be low in fat and cholesterol.

-Adverse effects: Generally safe.

.....Source: The Seattle Times Company

COPD - ANXIETY AND LOW HEALTH STATUS LEAD TO MORE REHOSPITALISATIONS

Patients with chronic obstructive pulmonary disease (COPD) are commonly frequently admitted to the hospital for acute exacerbations of their disease. Many risk factors have been identified for rehospitalisations. They include: higher age, lower lung function and lower health status. However, very little is known about the role of depression and anxiety as risk factors for rehospitalisations.

Therefore, Gunnar Gudmundsson (Landspítali University Hospital, Reykjavik, Iceland) and his North European colleagues studied a total of 406 patients from one university hospital in each of the five Nordic countries: Denmark, Finland, Iceland, Norway and Sweden.

They followed them for one year and studied how many had been rehospitalised during that time. The Hospital Anxiety and Depression Scale that measures anxiety and depression, and St. George's Respiratory Questionnaire (SGRQ) that measures health status, were applied to all patients.

The number of patients that had a readmission within 12 months was 246 (60%). Patients that had a readmission had lower lung function and health status. The risk of rehospitalisation was also increased in subjects with anxiety and in subjects with low health status. The patients that had the least activity had the highest risk of being admitted to the hospital.

This study identifies new risk factors for rehospitalisation in patients with COPD and draws attention to the role of anxiety and health status in patients with COPD. This may have important implications for treatment of patients with COPD.

.....Source: <http://erj.ersjournals.com>

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LEPTIN - A NEW MARKER OF INFLAMMATION IN PULMONARY DISEASE?

Leptin is a hormone produced by adipose tissue which is widely involved in several diseases, including chronic obstructive pulmonary diseases (COPD).

Based on this, Andreina Bruno (Istituto di Biomedicina e Immunologia Molecolare, Consiglio Nazionale delle Ricerche, Palermo, Italy) and her French and Italian colleagues studied the correlation between leptin and its receptor and the rate of inflammation in smoker subjects with and without COPD and in non-smoking healthy volunteers.

In this work, bronchial biopsies from the three different categories were examined by a specific colorimetric test that pointed out the presence of this hormone and its receptor in the pulmonary tissues. Besides, with the same method, the expression of specific inflammatory cells with and without the expression of leptin was studied.

What the authors found was a direct correlation between leptin presence in bronchial tissue and the progressive functional impairment in COPD. They also assessed the presence of leptin and its receptor in inflammatory cells and an higher expression of these cells in the patients with severe clinical conditions rather than in healthy volunteers.

These findings suggest that in patients with COPD the

expression of leptin and its receptor can regulate proximal airway inflammation and leptin may act as a mediator able to perpetuate bronchial inflammation by increasing the survival of some inflammatory cells. Furthermore, it is well known that the adipose tissue is a multifunctional organ involved in inflammation by the production of different adipokines: in this context, leptin represents a pleiotropic molecule together with the others adipokines involved in the regulation of the immune system.

This evidence may support the hypothesis that leptin can be considered a marker of inflammation within the airways and mainly regulates the inflammatory cell infiltration in COPD with a potential impact on the severity of the disease.

.....Source: <http://erj.ersjournals.com>

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DOES NICOTINE CURB THE APPETITE? COULD BE THE OPPOSITE!

A new study by Yale researchers shows that prior nicotine exposure in mice can increase their motivation to respond to work for food, weeks after their last exposure to nicotine, a finding that runs counter to the popular belief that nicotine exposure curbs appetite.

The study, to be published in an upcoming issue of *Psychopharmacology*, also sheds new light on the role played by certain nicotinic acetylcholine receptors when it comes to the reinforcing aspects of nicotine.

The study provides insight into one of the most vexing issues relating to smoking cessation, one that discourages many people from attempting to quit smoking, the prospect of weight gain. "Although acute nicotine can act as an appetite suppressant, these data are the first to suggest that repeated exposure to nicotine has the opposite effect, that nicotine increases motivation for food for weeks following exposure to the drug," said Darlene Brunzell, associate research scientist in the Department of Psychiatry and first author of the study.

"This research suggests that when young people take up smoking to regulate their weight, this may be counterproductive in addition to being harmful to their health," said Stephanie O'Malley, professor of psychiatry and principal investigator for the Center for Nicotine & Tobacco Use Research at Yale. "More research is needed to determine how exactly that works, but this does show that there could be a connection between exposure to nicotine and subsequent weight gain in some individuals."

In addition, the study identifies which nicotinic receptors are involved in nicotine's control over cues. "We knew previously that cues play a critical role in nicotine and tobacco consumption in animals and humans," said Brunzell. "These studies show that Beta 2 nicotinic receptors are necessary for nicotine's ability to increase the control that cues have over behavior." said Dr. Darlene Brunzell, Ph.D., first author of the study. he also said, in addition, that the findings run counter to the popular belief that acute nicotine exposure curbs appetite. "These data are the first to suggest that repeated exposure to nicotine has the opposite effect, that nicotine increases motivation for food for weeks following exposure to the drug."

O'Malley said that the research has significance when it comes to developing solutions for smokers who gain weight after they quit smoking. She noted that weight concerns keep many people, particularly women, from attempting to quit. Any information about the mechanism for weight gain could help the researchers at Yale and elsewhere figure out how to address that concern. In the meantime, she said, the research might help discourage people from starting to smoke to regulate their weight.

.....Source: yale.edu

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PROTEIN-RICH DIET BOOSTS BENEFIT OF EXERCISE

Everyone knows that a good weight-loss program combines diet and exercise, but a new University of Illinois study reports that exercise is much more effective when it's coupled with a protein-rich diet.

"There's an additive, interactive effect when a protein-rich diet is combined with exercise. The two work together to correct body composition; dieters lose more weight, and they lose fat, not muscle," said Donald Layman, a U of I professor of food science and human nutrition.

A higher-carbohydrate, lower-protein diet based on the USDA food guide pyramid actually reduced the effectiveness of exercise, Layman said.

Forty-eight adult women participated in Layman's 4-month study, published in the August 2005 issue of the *Journal of Nutrition*. One group ate a protein-rich diet designed to contain specific levels of leucine, one of the essential amino acids. A second group consumed a diet based on the food guide pyramid, which contained higher amounts of carbohydrates.

Both groups consumed the same number of calories, but the first group substituted high-quality protein foods, such as meats, dairy, eggs, and nuts, for foods high in carbohydrates, such as breads, rice, cereal, pasta, and potatoes.

"Both diets work because, when you restrict calories, you lose weight. But the people on the higher-protein diet lost more weight. Some people refer to this as the metabolic advantage of a protein-rich diet," said Layman.

The study included two levels of exercise. "For one group, we recommended that they add walking to their lives. They usually walked two to three times a week, less than 100 minutes of added exercise," the researcher said.

The other group was required to engage in five 30-minute walking sessions and two 30-minute weightlifting sessions per week. In both groups of dieters, the required exercise program helped spare lean muscle tissue and target fat loss. But, in the protein-rich, high-exercise group, Layman noted a statistically significant effect. That group lost even more weight, and almost 100 percent of the weight loss was fat, Layman said. In the high-carbohydrate, high-exercise group, as much as 25 to 30 percent of the weight lost was muscle.

While this protein-rich diet works for everyone, it seems to be even more effective for people who have high triglyceride levels and carry excess weight in their midsection--a combination of health problems known as Syndrome X.

"The protein-rich diet dramatically lowered triglycerides and

had a statistically significant effect on trunk fat, both risk factors associated with heart disease," he said. "Exercise helped dieters lose an even greater percentage of body fat from the abdominal area."

The protein-rich diet works so well because it contains a high level of the amino acid leucine. Leucine, working together with insulin, helps stimulate protein synthesis in muscle. "The diet works because the extra protein reduces muscle loss while the low-carbohydrate component gives you low insulin, allowing you to burn fat," he said.

"We believe a diet based on the food guide pyramid actually does not provide enough leucine for adults to maintain healthy muscles. The average American diet contains 4 or 5 grams of leucine, but to get the metabolic effects we're seeing, you need 9 or 10 grams," he noted.

To achieve that leucine level, the researcher recommended adding dairy, meat, and eggs, all high-quality proteins, to the diet. According to Layman, losing weight doesn't have to mean relying on supplements to fill in nutritional gaps in your diet. "If you use a high-quality protein approach to your diet, you can actually improve the overall quality of your diet while losing weight," he said.

.....Source: medicalnewstoday.com

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DEVICE CAN IDENTIFY WHAT THE PASSIVE SMOKER INHALES

A device called "passive chemical dosimeter" will help to identify the quantity of poisonous substances and to determine particular substances inhaled by interlocutors of a smoker. The device is being developed by the Kazan chemists, financial support being provided by the International Science and Technology Center.

The smoking-room of the Lenin State Library - this is the proper place for catching eligible bachelors, as a heroine of the Oscar-winner film "Moscow Does Not Believe in Tears" assured her friend. Alas, as the Kazan chemists claim, this is not the sole thing one can catch in a smoking-room. The device they are developing with sponsorship of the International Science and Technology Center allows to determine the quantity of poisonous substances threatening with oncological diseases got into the organism of any person who was simply sitting the smoking-room for some time. In the future, these will be personal dosimeters - similar to those which allow to promptly determine the radiation dose caught by a person in a radioactive contamination zone.

The concept of operation of chemical dosimeters invented by specialists of the Kazan State Technological University is rather simple. It is necessary to take a plate of a multiple-purpose sorbent applied to an undercoat and to impregnate the sorbent with a special compound. It will react with the compound hazardous to health that are formed in the air in the course of tobacco smouldering. It would be better if reaction products were tinted in different colors. Then, the sorbent's color and intensity of coloration will help to determine the quantity and the kind of poison a visitor of a smoking-room happened to encounter. And also the dose of

these substances a visitor caught during the time (s)he spent in the smoking-room, as it is highly unlikely that (s)he was sitting there in a gas-mask.

To begin with, the chemists found out what substances particularly hazardous to health may be found in cigarette smoke. It has turned out that they are numerous and diverse! Although, for competent people this has been no secret for a long time: smoke contains the entire assortment of heavy organic synthesis plants, but smokers seem to prefer not to think about it. But it is worth knowing that the greatest danger lies not in the smoke they breathe in with each inhalation, but in what is elegantly flowing from the tip of a cigarette while they hold it in hand and simply talk or think, i.e. when tobacco smoulders by itself between inhalations.

However, it is particularly in the intervals between inhalations that the major part of tobacco - almost three quarters of it - burns down. It is the so-called by-product smoke that contains most of carbon monoxide, benzopyrenes and aromatic amine - which are extremely harmful substances. It is fearful, but the content of amine (which causes urinary bladder cancer) is generally 30 times higher in the by-product smoke than in the basic smoke. Do the persons - who naively assume that if they do not inhale but simply hold a cigarette alight or sit next to a smoker, the smoke is not dangerous for them - know about that?

Having learned what is necessary to identify, the chemists synthesized the required compound. The compound does react with carcinogenic amine, tobacco smoke components, without reacting with other compounds, which, unfortunately, may be found in the air of megapolis - spirits, sulfur oxide, nitric oxide and many others. Then the sorbent plates impregnated with this compound were standardized: the plates were placed for different periods into the chamber with known quantity of target toxicants, and then the researchers washed off everything accumulated on the sorbent and carried out identification by ordinary analytical methods.

At last the moment of truth came - the plates were hung in the University smoking-rooms and in the chemical laboratory where the air is necessarily "saturated" by various odours including rather dangerous ones. It has turned out that it was not for nothing that chemists previously got milk "for insalubrity". In the room itself, there were not too many toxicants found, but in the vicinity of the draught where chemists stand during the synthesis, there were pretty much of them. However, it would be good to drink more milk for the persons who are fond of sitting in a smoking-room or having fun in a club or discotheque with a lot of smokers. Sometimes, they catch the higher dose of carcinogenic substances than chemists do particularly if they are breathing in cigarette smoke for hours.

.....SOURCE: <http://www.alphagalileo.org>

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ROFLUMILAST IMPROVES LUNG FUNCTION IN COPD PATIENTS

Treatment with roflumilast, a phosphodiesterase-4 inhibitor, can improve lung function and reduce flare-ups in patients with moderate to severe COPD, according to a report in the August 13th issue of The Lancet.

Chronic inflammation is known to play a key role in COPD, but corticosteroids appear to have little effect on the disease process, Dr. Klaus F. Rabe, from Leiden University Medical Centre in the Netherlands, and colleagues note. Thus, there has been a search for anti-inflammatory agents with efficacy against COPD. Recently, the focus has been on phosphodiesterase-4 inhibitors.

In the current phase III study, Dr. Rabe's team assessed the outcomes of 1411 COPD patients who were randomly assigned in an outpatient setting to receive roflumilast, at one of two doses (250 or 500 micrograms), or placebo once daily for 24 weeks.

At either dose, roflumilast was associated with significant improvements in postbronchodilator FEV1 compared with placebo, the investigators note ($p < 0.0001$). Similarly, both doses provided significantly greater improvements in health-related quality of life than did placebo.

The percentage of patients with exacerbations was about 36% in the low-dose roflumilast and placebo groups, whereas the percentage in the high-dose roflumilast group was significantly lower, at 28% ($p = 0.0114$).

Adverse effects in the roflumilast groups were generally mild to moderate in severity and occurred with comparable frequency as in the placebo group. However, diarrhea and nausea were more common in the roflumilast groups than among controls.

"The phosphodiesterase-4 inhibitor class shows promise as a new therapeutic strategy for patients with COPD," the authors conclude.

The study was funded by German drug company ALTANA Pharma Ag, which is developing roflumilast.

.....Source: Lancet 2005;366:563-571.

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TONGUE IN CHEEK TIME: A BIT OF A SPOOF....

Oxygen: a dangerous drug which must be banned.

Oxygen is a very toxic gas and an extreme fire hazard. It is fatal in concentrations of as little as 0.000001 p.p.m.. Humans exposed to these oxygen concentrations die within a few minutes. Symptoms resemble very much those of cyanide poisoning (blue face, ect.). In higher concentrations, e.g. 20%, the toxic effect is somewhat delayed and it takes about 2.5 billion inhalations before death takes place. The reason for the delay is the difference in the mechanism of the toxic effect of oxygen in 20% concentration. It apparently contributes to a complex process called aging, of which very little is known, except that it is always fatal.

However, the main disadvantage of the 20% oxygen concentration is in the fact it is habit forming. The first inhalation (occurring at birth) is sufficient to make oxygen addiction permanent. After that, with symptoms resembling those of cyanide poisoning.

Oxygen is an extreme fire hazard. All of the fires that were reported in the continental U.S. for the period of the past 25 years were found to be due to the presence of this gas in the atmosphere surrounding the buildings in question.

Oxygen is especially dangerous because it is odorless,

colorless and tasteless, so that its presence can not be readily detected until it is too late.

.....Source: Chemical & Engineering News February 6, 1956

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MORE OF THE SAME...HILARIOUS HELP-WANTED ADS

In this piece, News Target satires new employment postings at the Food and Drug Administration (FDA). Some highlights:

- Propaganda Officer: Help the FDA create and spread information that discredits products, companies and ideas that threaten FDA control. No scientific background necessary.
- Science Censor: Bury scientific findings that harm the prestige and credibility of the FDA.
- Chief Oppression Officer: Conduct armed raids on places where dangerous criminals are teaching patients about nutrition.
- Kickback Coordinator: Keep tabs on FDA managers' investments in pharmaceutical companies. Criminal background preferred, mob ties are a plus.
- Morale Officer: Keep FDA employees in line to boost morale and work efficiency.
- Public Safety Program Director: Not really a full-time job.

In fact, you don't even need to show up.

.....Source: News Target August 13, 2005

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DRUG COMBINATION COULD INTERRUPT COPD PROGRESSION

Combing two old-standby drugs, theophylline and corticosteroids, may be a workable strategy for interrupting the inflammatory progression of chronic obstructive pulmonary disease (COPD).

The research, described in the May 12 New England Journal of Medicine, may help to calm the troubled waters roiling between the proponents of the so-called Dutch and British hypotheses of COPD.

The Dutch hypothesis holds that COPD shares pathogenic origins with asthma, emphysema, and chronic bronchitis, whereas the British model suggests that asthma and COPD are different conditions, based on the fact that inhaled corticosteroids are ineffective in COPD.

The current study, reported by Peter J. Barnes, D.M., D.Sc., of the National Heart and Lung Institute at Imperial College here and his international colleagues suggests that although asthma and COPD may be different diseases, they appear to have common pathogenic mechanisms.

By comparing lung tissues from patients with different stages of COPD with those of nonsmokers without COPD, as well as patients with pneumonia and cystic fibrosis, Dr. Barnes' group determined that reduced activity in the lungs of the enzyme histone deacetylase (HDAC) correlates with severity of COPD.

HDAC has been shown to suppress production of pro-inflammatory cytokines, and its loss from macrophages in the alveoli could account for the tissue-destructive inflammatory and immune reactions seen in patients with COPD.

Dr. Barnes' team had previously shown that low-dose theophylline, long used in the treatment of COPD and other forms of airway obstruction, can restore HDAC activity in alveolar macrophages.

This finding suggests that a combination of corticosteroids and theophylline could restore delivery of HDAC to the nucleus of alveolar macrophages and "disarm inflammation in COPD," wrote Steven D. Shapiro, M.D., a pulmonary and critical care medicine specialist at Harvard, in an accompanying editorial.

"Although, admittedly, asthma and COPD are unlikely to represent a single disease, they probably share pathogenetic mechanisms that interact, each making the other disease process worse," Dr. Shapiro commented. "These interactions may become important as we search for effective therapy for steroid-resistant asthma and COPD."

Dr. Barnes and colleagues obtained alveolar macrophages from bronchial lavage and peripheral lung and bronchial tissue biopsies, and examined the tissues for activity of both HDAC and histone acetyltransferase (HAT), another enzyme implicated in modifying proinflammatory genes in asthma.

They found that as the clinical stage of COPD increased, HDAC activity in lung tissue specimens decreased, while the inflammatory markers interleukin-8 messenger RNA and histone-4 acetylation at the interleukin-8 promoter both rose relative to those of sample taken from nonsmokers.

The level of HDAC activity also correlated significantly with measures of lung function and inflammation in COPD when all specimens were examined. There were no changes in the activity of either HDAC or HAT in lung tissue samples from patients with pneumonia or cystic fibrosis, however.

There were similar results seen in alveolar macrophage samples, with reduced activity HDAC in those taken from patients with COPD, but no significant change in those taken from other subjects.

These changes may be relatively specific to COPD, because we could not find a reduction in total HDAC activity in samples from patients with asthma, cystic fibrosis, or pneumonia. In contrast, in asthma, which also involves increased expression of inflammatory genes in the respiratory tract, we confirmed previous observations showing increased HAT activity in bronchial-biopsy specimens," Dr. Barnes' team wrote.

The findings suggest that the asthma and COPD disease processes both involve unwinding of chromatin that leads to a subsequent increase of inflammatory gene expression, but that each disease appears to use a different mechanism, they wrote.

.....Source: New England Journal of Medicine

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ANOTHER ANTIOXIDANT SUPPLEMENT FALLS SHORT

This study reported N-acetylcysteine is safe, but did not appear to benefit COPD patients. There is a possibility higher doses of N-acetylcysteine (more than 600 mg) could offer some therapeutic benefit to individuals with COPD.

An antioxidant supplement once touted to help reduce the

oxidative stress that fuels chronic obstructive pulmonary disease (COPD) seems to be no more effective than placebo. That's according to research published in the April 30 issue of *The Lancet*. In a multicenter phase III double-blind, randomized controlled study, a team of Belgian researchers discovered the antioxidant N-acetylcysteine provided little or no benefit to 523 COPD patients.

The study, led by Marc Decramer, M.D., of University Hospital here, assigned patients with smoking-related COPD to either three years of 600 mg daily of N-acetylcysteine or to placebo. It was called the Bronchitis Randomized on NAC Cost-Utility Study (BRONCHUS).

Patients were seen initially at the beginning of the study, then at one month, three months, and then every three months for the remainder of the study. Patients were tested at 50 different sites throughout Europe and the study ended in January 2003. Study results showed the yearly rate of decline of forced expiratory volume (FEV) was no different between those taking the antioxidant supplement and those taking placebo (54mL [SE 6] vs 47mL [6]).

The number of exacerbations per year also didn't differ between the groups, (1.25 [SD 1.35] vs 1.29 [SD 1.46]; hazard ratio 0.99 [95% CI 0.89-1.10, p=0.85]). Researchers reported that a subgroup analysis suggested the exacerbation rate could be reduced with N-acetylcysteine supplements for those not being treated with inhaled corticosteroids.

There was a small silver lining. Researchers reported that those in the N-acetylcysteine arm may have had improved lung function, "but the mechanism of this finding is not clear from present data," they wrote.

Adverse events were also about equal between the two groups. There were 1,428 side effects reported among the N-acetylcysteine group compared with 1,381 among those in the placebo arm. Most of the adverse events were related to COPD exacerbations, such as coughing, dyspnea, bronchitis or rhinitis. However, "no adverse events were thought to be drug-related," researchers wrote.

Despite the dismal outcome, the Belgian team still thinks there is some untapped potential in N-acetylcysteine supplements. "Because N-acetylcysteine is very well tolerated, higher doses such as 1,200 mg or 1,800 mg per day could be assessed in future trials," they concluded.

In an accompanying editorial, James F. Donohue, M.D., of the University of North Carolina in Chapel Hill, agreed that higher dosages of N-acetylcysteine is an option. But in the meantime, he added, clinicians may want to look for other approaches to treating COPD.

"N-acetylcysteine is safe and higher doses could be used," Dr. Donohue wrote. However, the fact the study "was negative on its primary outcomes should redirect investigators to pursue other approaches, such as antioxidants mimetics and newer antioxidants."

Studies on N-acetylcysteine for COPD have flip-flopped over the years. A Dutch study featured in the May 2003 issue of *European Respiratory Journal* and conducted by P. Dekhuijzen of University Medical Center Nijmegen, suggested

N-acetylcysteine reduced the risk of rehospitalization by 30% among COPD patients, noting "this risk reduction is dose-dependent."

But most recently, a New Zealand study led by P. Black, M.D., of University of Auckland reported in the December 2004 issue of *BMC Pulmonary Medicine* that adding N-acetylcysteine "to treatment with corticosteroids and bronchodilators does not modify the outcome in acute exacerbations of COPD."

.....Source: *The Lancet*

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US WANTS AIRLINES TO OFFER MEDICAL OXYGEN

Big U.S. and foreign airlines operating to and from the United States would be required to provide medical oxygen to passengers who need it, according to a federal regulation proposed on Wednesday.

Airlines are not required to provide the service and many carriers opt not to do so, the Transportation Department said. Those that do provide respiratory devices generally charge a fee, which can be expensive. One study cited by the agency showed that supplemental oxygen can cost between \$64 to \$1,500 per trip.

Carriers would be required, under the proposal, to test various portable oxygen systems to ensure they do not interfere with aircraft navigation and communications.

Any system would have to meet Federal Aviation Administration standards, which limit oxygen use because of aircraft safety concerns.

But regulators said they receive numerous complaints about the lack of accommodations for passengers who need supplemental oxygen for a medical condition, and have identified a handful of systems that might meet safety standards.

While the government wants the service to be free, regulators said they will "carefully evaluate" the cost of the requirement on the industry.

Generally, carriers cannot charge passengers for disability-related services that enable equal access to air travel. While the government proposed to mandate the service, it sought public comment on whether it has the authority to order such a change under anti-discrimination laws.

The Transportation Department will accept public comments over the next 60 days and then decide whether to make the proposal permanent.

.....Source: *Yahoo.com*

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FDA ADVISERS RECOMMEND INHALED INSULIN

Millions of people with diabetes may have an alternative to some or all of their daily needles if the government adopts an advisory panel's recommendation to approve the first insulin that can be inhaled. Federal health advisers scrutinized the drug and inhaler device, questioning developers about the long-term effects of distributing insulin to the body through the lungs, rather than directly into the blood stream.

Proponents of the drug, Exubera, and the associated inhaler say many diabetics who refuse to take all their

injections will be more inclined to use an inhaler.

"I take four shots a day and the fourth one is hardest one," Rebecca Wilkes Killion of Bowie, Md., the patient representative on the advisory panel, said during a hearing on the drug. "I'm tired of it. If I could get myself down to one I'd be thrilled. A lot of people resist it because they are afraid of the needles," she said.

The Food and Drug Administration's Endocrinologic and Metabolic Drugs Advisory Committee twice voted 7-2 to recommend that the agency approve the drug and inhaler device for sale in the United States. The separate votes were for each of the two major types of diabetes. The FDA usually follows the recommendations of its advisory committees, but is not required to.

The insulin, developed by Pfizer, Sanofi-Aventis and Nektar Therapeutics, is promoted as a convenient alternative to the injections millions of diabetics must take several times daily.

Advisers who voted to recommend inhaled insulin said the benefits outweighed certain problems, most notably whether the effects of the drug on people with lung disease had been fully studied. Other advisers expressed concern it would be difficult to train doctors and people with diabetes in the proper use and maintenance of the inhaler device. Drug company representatives suggested that the inhaler was not any more complicated than the injections many diabetics now must rely on.

Committee members did not recommend specific restrictions on the drug. But Dr. David Orloff, director of the FDA division that would oversee the drug, said the drug probably would not be available to smokers. They would be at risk for a dangerous drop in blood sugar because they absorb much more inhaled insulin in their lungs than do nonsmokers.

The FDA advisers also worried that the drug had not been adequately tested on people who do not smoke but are regularly exposed to secondhand smoke. The companies proposed to conduct studies on the long-term effects of the drug until 2019. "We understand the need to assess the long-term effects on pulmonary function," said Dr. Neville Jackson of Pfizer.

During drug trials, researchers found that inhaled insulin generally was as effective as injections in controlling blood sugar levels. Some patients who took inhaled insulin complained of coughing and a small decrease in breathing capacity. It is estimated that more than 18 million people in the U.S. have diabetes, although some do not know it. The number of people with diabetes is believed to have tripled in the past quarter-century. Most have Type 2, a condition linked to obesity that occurs when the body cannot effectively use the insulin it makes. Sometimes this can be treated with pills instead of injections. Fewer than 10 percent have Type 1, a disorder in which the immune system attacks insulin-producing cells in the pancreas. This is sometimes called juvenile diabetes.

An FDA medical officer questioned whether inhaled insulin could provide a precise enough dose to treat people with Type 1 diabetes. Inhaled insulin could be used to manage blood sugar levels for people with either type of diabetes who need insulin injections before meals. The drug would not replace

longer-acting insulin injections some diabetics, particularly those with Type 1 diabetes, need to take in the morning or before bed, according to FDA documents.

.....Source: washingtonpost.com

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SYMPTOMS OF DEPRESSION MAY WORSEN HEART FAILURE

New research suggests that depression may hasten the progression of heart disease by increasing the levels of a key protein that causes inflammation. In a study of 32 people with heart failure, the 14 patients who felt the most depressed had nearly twice the levels of this protein in their blood.

The protein, tumor necrosis factor alpha (TNF-alpha), is one member of a large family of proteins called cytokines, chemical messengers that are mobilized when the body is injured or has an infection. These cytokines often cause inflammation in their effort to repair an injured or infected area of the body. In the case of heart failure, this inflammation makes it even more difficult for the heart to pump blood. (Heart failure is a disease in which the heart loses the ability to pump blood with normal efficiency.)

"People with heart failure typically have much higher TNF-alpha levels than people without the disease," said Amy Ferketich, the study's lead author and an assistant professor of public health at Ohio State. "But depression seems to make levels of this cytokine even higher, which is bad for patients."

The study's results appear in a recent issue of the American Heart Journal. Ferketich worked with Ohio State colleagues Jeanette Pohorence Ferguson, a graduate student in pathology, and Philip Binkley, a professor of internal medicine. They recruited 32 patients from the heart failure clinic at Ohio State. The participants answered the 21-question Beck Depression Inventory, a tool that physicians and scientists use to measure symptoms of depression. Answers to each question are given a value of zero (no symptoms at all) to 3 (severe symptoms). A score of 10 or more suggests that a patient has at least mild symptoms of depression.

The researchers drew blood samples from each patient. From these samples they evaluated levels of three cytokines: TNF-alpha, interleukin-6 (IL-6) and interleukin-1beta (IL-1beta). Previous research by other scientists has shown that the three cytokines, which all cause inflammation, are elevated in patients with heart failure.

"We were surprised to find that this wasn't the case for the other two cytokines," Ferketich said. "That suggests that something about depression may trigger the production of TNF-alpha." The researchers measured cytokine levels in picograms, or trillionths of a gram. Patients with scores of 10 or higher on the BDI had levels of TNF-alpha nearly twice that of patients with a score less than 10 (4.9 pg/ml vs. 2.7 pg/ml.) Levels of the other two cytokines were similar for depressed and non-depressed patients: 5.9 pg/ml vs. 5.1 pg/ml for IL-6 and 4.4 pg/ml and 3.6 pg/ml for IL-1beta, respectively.

Other researchers estimate that anywhere from 24 to 42 percent of heart failure patients also suffer from depression.

"Depression clearly raises the levels of one cytokine, which plays a role in increasing inflammation," Ferketich said. "What we don't know for sure is if depression causes the inflammation which may lead to heart failure or if heart failure causes depression which accelerates inflammation."

A study at Duke University found that patients with major depression are twice as likely to die or to be re-admitted to the hospital a second time within 12 months. "Patients with heart disease are prone to developing depression," Ferketich said. "Physicians need to pay more attention to this. But research still needs to be done to find out if treating patients with anti-depressants would help to actually slow the progression of heart disease."

The study was supported by the National Institutes of Health's National Heart, Lung and Blood Institute.

Source: <http://researchnews.osu.edu>

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CARBON MONOXIDE

Americans spend approximately 90 percent of their time indoors, where hazardous air pollutants can exist at higher levels than outdoors. Children, pregnant women, the elderly, and people with lung disease are particularly at high risk for adverse health effects caused by indoor air pollution, including carbon monoxide (CO). CO is a colorless, odorless gas that is produced as a result of incomplete burning of carbon-containing fuels. Exposure to CO reduces the blood's ability to carry oxygen.

Carbon monoxide exposures especially affect unborn babies, infants, and people with anemia or a history of heart or respiratory disease.

Breathing low levels of CO can cause fatigue and increase chest pain in people with chronic heart disease. Breathing higher levels of carbon monoxide causes flu-like symptoms such as headaches, dizziness, and weakness in healthy people. Carbon monoxide also causes sleepiness, nausea, vomiting, confusion, and disorientation. At very high levels, it causes loss of consciousness and death.

Nearly 300 people die every year from carbon monoxide exposure related to residential combustion appliances, and thousands of others become ill or seek medical attention. Any fuel-burning appliance that is not adequately vented and maintained can be a potential source of CO, including:

- gas appliances (furnaces, ranges, ovens, water heaters, clothes dryers, etc.)
- fireplaces, wood and coal stoves, space heaters
- charcoal grills, automobile exhaust fumes, camp stoves, gas-powered lawn mowers, and power tools
- Cigarette smoke can also contain high levels of CO, as well as 200 other known poisons.

Preventing carbon monoxide poisoning from exposure to dangerous levels of carbon monoxide in the home is possible by taking some simple steps:

- Make sure appliances are installed and working according to manufacturers' instructions and local building codes.
- Have only a qualified technician install or convert fuel-burning equipment from one type to another.
- Have the heating system, chimney and flue inspected and

cleaned by a qualified technician every year.

- Do not use ovens and gas ranges to heat your home.
- Do not burn charcoal inside a home, cabin, recreational vehicle or camper.
- Do not operate gasoline-powered engines in confined areas such as garages or basements.
- Never leave your car or mower running in a closed garage.
- Make sure your furnace has adequate intake of outside air.
- Choose vented appliances whenever possible.
- Use kerosene space heaters and unvented gas heaters only in well ventilated rooms.
- Install a carbon monoxide detector with an audible alarm in your home and garage.

Carbon monoxide detectors should: meet Underwriters Laboratories, Inc. standards; have a long-term warranty; and be easily self-tested and reset to ensure proper functioning. For maximum effectiveness during sleeping hours, carbon monoxide detectors should be placed as close to sleeping areas as possible.

.....Source: American Lung Association

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PHYSICIAN, WIRE THYSELF

Health care system needs major dose of technology

The American health care system has many problems, but one of them is at once obvious and generally ignored: most doctors and hospitals still work in the buggy-whip era of information technology, dependent on pen, paper and manila folders.

At the turn of this century, when the average industry was investing \$8,000 per employee on computer technology, health care was spending \$1,000. By now, if you belong to a frequent shopper club, your grocery store almost certainly has far more computerized data about you than does your doctor.

Why is this important? Partly because it wastes enormous amounts of money: the National Coordinator for Health Information Technology estimates that simply by using electronic health records we could save between 7.5 percent and 30 percent of the \$1.6 trillion dollars now spent annually on healthcare. But beyond that, a fully computerized medical system will allow some remarkable new features and services for patients. And that doesn't mean waiting for new breakthroughs — it can be done with the same information technology that almost every other business in the country has already adopted.

Think of the transformation that banking has undergone: global ATM networks, online banking, debit cards, paperless checking. If applied to health care, those same technologies could produce some astonishing results.

-You'll go to your physician's Web site to make an appointment. The site will include a secure messaging system to access test results and send pre- or post-visit questions; cyber-savvy offices will probably have a nurse who fields the questions and passes the more complex ones on to a physician.

-You'll be able to access your own medical records online

to add updates on your health or issues to follow up on your next visit. - If you're visiting a new doctor, you'll be able to send on your entire medical record beforehand, including not only other doctors' notes, but test results and images such as X-ray and MRI. You might even carry your records with you on a plastic card, or — for emergencies — in a tiny chip implanted under your skin.

-The diagnostic devices in your doctor's office, from the fever thermometer and stethoscope to a mini-MRI or X-ray device, could wirelessly transmit the results directly into your health records.

-You could have diagnostic devices at home — blood pressure, blood sugar, heart rate, urinalysis and others — that automatically send results to your doctor's office.

-Rural physicians will be able to "call in" specialists from major teaching hospitals to "see" patients via video conferencing. The consultant can have the patient's full history right in front of them, along with real-time test results.

-In hospitals, RFID chips — the tiny radio chips that will replace barcodes in retail stores — can take on multiple roles. Each patient would have an RFID chip in their bracelet that would communicate with the tablet-style PC that nurses and doctors uses to update records. Each drug out of the hospital pharmacy would have an RFID chip as well and if it didn't match with the patient's chip a warning would sound.

-Medicine could use the data-mining technologies that retailers like Wal-Mart already employ to improve service and efficiency. -When patient records are in digital form, it will be far easier to determine if antibiotic A is superior to antibiotic B in treating a given ailment. It will also widen the sort of disease tracking that the Centers for Disease Control and Prevention now does on a national basis. A doctor in Milwaukee can immediately see what the doctors on the other side of town have encountered in recent weeks, providing an instant picture of health trends in the local area.

-Doctors will order prescriptions and tests on handheld devices or desktop computers that will connect straight to pharmacies and labs with no potential misreadings. (Physicians' bad handwriting has long been a source of humor, but there's nothing funny about sloppy data entry when lives are at stake. Electronic entry should improve the process significantly.)

In fact, all of those innovations are already being offered, on a very limited (and sometimes experimental) basis, by a handful of doctors and hospitals today. But how and when will these services become available to all of us?

First, electronic health records, whether at the doctor's office or on your home computer, will require extremely good security to convince patients that their privacy is fully protected. But this may not prove to be a major hurdle. Experts believe that health-care records won't attract the same level of organized criminal hacking as have financial records: a cholesterol count isn't quite as valuable as a credit-card number. And federal regulation called HIPPA, enacted a decade ago, already enforces stringent controls on the handling and security of health data in preparation for the brave new world of digital medical information.

A more serious sticking point is in the doctor's office, where computers may now schedule the appointments and track the billing, but that's usually where it ends. Only about 10 percent of physician's offices — generally larger, multiple-physician practices — use electronic health care records. Those without aren't in a hurry to upgrade. Doctors aren't like, say, insurance agents, where the central office says "computerize" and so it is. Older physicians have their ways of practice well established — and even if they want to change, converting existing paper into digital isn't easy or cheap. On top of that, the cost savings in electronic health records are distributed across the whole healthcare infrastructure, and may not appear as immediate benefits to the physician's own bottom line.

Then there's the ever-troublesome question of standards: a national system of interchangeable health records will require standard formats to ensure one office can read another office's files. As it is, some current computer standards date back to the mainframe era. And the problem is larger than computer code compatibility — there are still no national standards for medical terminology itself; laboratory procedures and results, for example, can have different names in different parts of the country. (There's actually a plus side to the primitive state of medical information standards — once adopted, the new versions will be state-of-the-art and fully adapted for the Internet.)

Observers increasingly suggest that the federal government — which already pays over 40 percent of the health care costs in the U.S. — needs to help solve both the funding and standards problems. Congress will look at several bills this fall that provide funds for pilot computerization programs and also require standards for any clinical equipment purchased with federal funds. But it will take more than that. In August a team of experts writing for the *Annals of Internal Medicine* estimated that a full national health information system could be put in place for about \$156 billion. Although that sounds like a big number, it's only two percent of current annual healthcare spending—and with the potential savings in the trillions, that's a great return on investment. The current spending projection, however, is only a third of what is required.

There are clearly enormous social and political challenges involved in overhauling the American healthcare system, and so far progress has been slow. But with trillions of dollars in savings available simply by upgrading to the information technology that the rest of business takes for granted, perhaps it's time for the health care industry to write itself a prescription for a major dose of new technology.

.....Source: MSNBC.com

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SCOTS WOMEN WORST FOR LUNG DEATHS

Mortality rates among women in Scotland from emphysema or chronic bronchitis are the worst in the western world, according to published research. The evidence suggests that women are unaware of the major health threat as deaths from chronic lung disease overtake those from breast cancer.

The findings of a study by the British Lung Foundation (BLF) predict that Chronic Obstructive Pulmonary Disease (COPD), the collective term for emphysema and bronchitis, will become the fourth biggest killer of women in the UK. North of the border, the disease already claims a greater number of lives than breast cancer. It kills more than 1300 Scottish women annually – 1100 die from the cancer.

A greater number of women than men die from COPD in Scotland, a reverse of the UK-wide position.

Andy Kerr, the health minister, recently rejected calls for the tackling of COPD to be made a national priority.

The BLF study questioned 1200 women across the UK and found those in Scotland were largely unconcerned about the disease. Findings also suggested that the majority do not realise COPD is life-threatening. The disease is generally caused by smoking, although exposure to dust can contribute.

The study was commissioned to launch the BLF's campaign to warn women about the disease. Dame Helena Shovelton, chief executive of the BLF, said the new campaign would give a voice to women living with an "invisible" major killer, adding: "It is essential that we dramatically increase women's understanding of how the disease can be prevented and managed effectively."

.....Source: Newsquest (Herald & Times) Limited

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WOMEN 'UNAWARE OF LUNG DISEASE'

Many women are unaware of the dangers of a chronic lung disease which kills nearly as many British females as breast cancer, campaigners have warned. The British Lung Foundation says rates of chronic obstructive pulmonary disease are soaring and it may soon be the fourth biggest killer of women. But only 1% of 1,200 women surveyed said COPD is their main health worry; women feared breast cancer most and 27% wrongly thought it - rather than heart disease - killed most women in Britain.

There was little more awareness about COPD among smokers who were questioned as part of the survey by the BLF. Their habit puts them at 13-times greater risk of the condition - an umbrella term for lung conditions including emphysema and chronic bronchitis, which cause severe breathlessness and coughing. Exposure to second-hand smoke and dust or fumes can also cause the disease. It can also, rarely, be a genetic condition.

But the BLF survey found only 15% put it in their top five of worrying conditions, despite it killing more than ovarian and cervical cancers combined. Women feared breast cancer the most, and 27% of them wrongly ranked it as Britain's biggest female killer - a position which is actually held by heart disease.

The BLF also say that there is a gender difference. While COPD rates in men have reached a plateau, women are more susceptible to the condition, perhaps because their lungs have smaller airways, it says. As over a quarter of all British women now smoke - more than in other European countries, including France - and smoking rates are on the increase among younger women, the BLF says COPD will become an even greater problem in the years ahead.

'Invisible killer'

One sufferer, Wendy Dawber, was recently diagnosed with COPD at just 38. She said: "I just can't believe that I've got this awful disease in my 30s. "When I was a teenager I used to think it was cool to smoke. It's anything but cool to be 38 and be diagnosed with COPD. All I want is to be able to live a normal life with my family but that can't happen now." She added: "If telling my story makes just one woman stop and think before smoking another cigarette, then it has all been worth it."

Dame Helena Shovelton, chief executive of the BLF, said: "This campaign gives a voice to the thousands of UK women of all ages living with COPD - including young mums like Wendy who are struggling to cope with the debilitating symptoms and flare-ups the condition causes. "COPD seems invisible as a major killer but it takes the lives of many more women than other more widely discussed dangers. "It is essential that we dramatically increase women's understanding of how the disease can be prevented and managed effectively if we are to avoid thousands of unnecessary deaths."

.....Source: BBC NEWS

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AIR CLEANERS

The May issue of Consumer Reports (CR) presents new concerns about ionizing air cleaners: among five models that did a poor job of cleaning the air, several can expose users to potentially harmful ozone levels. Months of unbiased testing and expert investigation demonstrate why the five ionizing models with poor performance, including those with relatively high ozone generation, are "Not Recommended". Ozone from ionizing air cleaners is a growing concern as sales increase.

People with asthma or respiratory allergies are especially sensitive to indoor ozone, an irritant that can worsen asthma, deaden sense of smell, raise sensitivity to pollen and mold, and may cause permanent lung damage. CR tested ionizing air cleaners for ozone levels and for their ability to remove dust, cigarette smoke, and pollen from the air. According to CR's independent test results, the following models are Not Recommended because they perform poorly and emit relatively high levels of ozone: Brookstone Pure-Ion V2; Sharper Image Professional Series Ionic Breeze Quadra S1737 SNX; Ionic Pro CL-369; IonizAir P4620

.....Source: U.S. Newswire

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PULSE OXIMETRY: USER BEWARE!

The results of a pulse oximeter reading can be misleading under certain circumstances, so it is important to look at the whole clinical picture

Use of pulse oximetry by healthcare professionals may seem as simple as attaching the probe to a patient's finger. But there are a few caveats for nurses to be aware of when reading the results. Pulse oximetry is very easy to use. Generally, a caregiver simply attaches the probe to the finger of the patient and pushes the start button. Unfortunately, there are many potential pitfalls in the interpretation of the readings, and some of them can have serious consequences.

Case Study

A patient was brought into the ED with smoke inhalation secondary to a house fire. The ED doctor's first order was to "get an oximetry reading on him." In this case the oximeter probably would have read 95 percent or higher and so could have misled the physician and staff into not giving needed oxygen. I informed the doctor that the oximetry reading was going to be of little value because the pulse oximeter reads carboxyhemoglobin the same as oxyhemoglobin. In other words, the oximeter might have read 95 percent but perhaps 10 percent of that (or more) could be due to carbon monoxide in the blood; therefore, it would tell us very little regarding the oxygenation of the patient. In this example, we needed (and obtained) a blood gas, which told us that the patient, indeed, had a very high carboxyhemoglobin level. His oxygen level was very low, and he was placed on 100 percent oxygen.

Smoking Can Skew Results

This problem is true of patients who smoke and get an oximeter reading, as they can have elevated levels of carbon monoxide and thus have a spuriously high oximeter reading. I have come across this in certifying patients for home oxygen delivery where the saturation level must be below 85 percent for them to qualify. After smoking, the patient's oximeter reading was over 90 percent, but a subsequent blood gas showed that the actual oxygenation was much lower.

Many healthcare staff who routinely use the oximeter do not know about the pulse oximeter reading the carboxyhemoglobin as oxygen. I have seen this in numerous healthcare settings. Pulse oximetry technology is tremendously helpful, noninvasive and easy to use. Unfortunately, this can be deceiving, as there are certain potential pitfalls, of which healthcare providers must be cognizant. Without training, it's all too easy to miss things, often to the detriment of the patient.

Precautions to Observe

The pulse oximeter picks up the motion of the pulse and determines by color (wavelengths of light ? blue gives off a different wavelength than red) what percent of hemoglobin in the artery is saturated with oxygen (red). However, the following precautions should be observed:

1. Pulse oximetry gives a reading of the percentage of hemoglobin saturated with oxygen. This reading will be inaccurate if the patient has just smoked (within last 4 hours), because the machine cannot discriminate between oxygen and carbon monoxide in the blood. Carbon monoxide in the blood also looks red, as does the skin of a victim of CO poisoning.
2. Results may not accurately reflect tissue oxygenation if the patient is severely anemic. For example, a patient with a hemoglobin of 6 may have a low tissue oxygenation even if the oximeter reads 99 percent. The oximeter reading is a percentage of hemoglobin saturated. It does not tell you how much hemoglobin one has or the state of tissue oxygenation.
3. Results that are not correlated with the patient's actual pulse may not be accurate. For example, the pulse oximeter reads 84 percent with a pulse of 120. However, if the patient's actual pulse when checked is only 70, the reading of 84

percent is probably not accurate.

4. Oximeter results lower than 75-83 percent may not be accurate. The pulse ox accuracy diminishes the further it is from the norm, so readings of 52 percent should be viewed as low but may not be as bad as they appear.
5. Poor peripheral perfusion also can affect the accuracy of the readings. The oximeter works by detecting the pulse and measuring the wavelength of light from the blood. If the pulse is virtually undetectable, the oximeter will not read or will read inaccurate results. This is another instance of correlating pulse oximeter values with the patient's actual palpated pulse.
6. Skin pigmentation or presence of nail polish can affect the accuracy of the readings. Polish should always be removed prior to using the pulse oximeter. Patients who have onychomycosis may not get accurate readings due to the thickness of the nail.
7. Motion artifact can also affect the accuracy of the readings. This occurs when the patient will not or cannot hold still (such as patients with Parkinson's disease) and the motion can affect the oximeter, since it picks up the pulsing (motion) of the artery to determine saturation levels. Motion artifact may be one reason for a marked difference in pulse rate on the machine versus palpated. The oximeter companies are diligently working on reducing motion artifact and having the machines compensate for it, but we are not yet at a place where it plays no role.

Look at Whole Clinical Picture

There are other pitfalls of oximetry as well. Caregivers must always verify results by looking at the whole clinical picture. A patient's skin pallor, presence of cyanosis and other factors can belie or substantiate a pulse oximeter reading. Also, since cyanosis of nail beds can be due to poor circulation, the oral mucosa should be checked for color and/or presence of cyanosis. In certain instances, such as the smoke inhalation study above, an arterial blood gas may be needed. This will give actual PaO₂ and carboxyhemoglobin levels.

Even accurate oximeter readings must be used as part of the total assessment. A good example of this is the patient with acute changes in his level of consciousness (LOC). His pulse ox reading may be over 90 percent, and yet, to dismiss a possible respiratory reason for the change in LOC may be in error, since an increase in carbon dioxide in the blood can cause this change and will not necessarily be picked up by oximetry. Patients with chronic obstructive pulmonary disease can have a reasonable saturation and yet be retaining carbon dioxide, resulting in an acute change in LOC.

Pulse oximetry is an excellent tool as long as care is taken to not depend entirely on this technology in the absence of correlating clinical information. Further information regarding the pitfalls, contraindications and device limitations can be found in the American Association of Respiratory Care (AARC) Clinical Practice Guidelines. Access these on the AARC Web site: www.aarc.org.

.....Source: www.advancweb.com

COPD LINK WITH PH IS RARE, SAY DOCTORS

The most common cause of pulmonary hypertension (PH) is a common illness itself: chronic obstructive pulmonary disease, or COPD. But severe pulmonary hypertension is a rarity in people with COPD, considered the fourth leading cause of death in the United States.

That's the conclusion of a group of doctors who, in a study, looked at the prevalence of severe PH in a large group of patients. Their conclusions are published in the July 15 issue of the American Journal of Respiratory and Critical Care Medicine.

"Severe pulmonary hypertension is uncommon in patients with COPD," wrote Ari Chaouat, MD, a respiratory specialist at Hopital de Hautepierre in Strasbourg, France, and his fellow researchers. "When it occurs, another cause must be sought."

Incessant Hypertension

Pulmonary arterial hypertension is a condition characterized by continual high blood pressure in the pulmonary artery, which carries blood low in oxygen from the heart to the lungs so that it can be re-oxygenated. The average blood pressure in the pulmonary artery in a healthy individual is around 14 mm Hg; however, in PH patients, the pressure rises to more than 25 mm Hg.

When PH strikes, the muscles inside the walls of the arteries may tighten up, causing the arteries to narrow; the walls of the pulmonary arteries may thicken as the amount of muscle rises in them and resulting scar tissue forms; and tiny blood clots may form within these narrower arteries, causing potential blockages.

There are two types of pulmonary hypertension:

- Primary—the disease develops with no known underlying cause.
- Secondary—the disease is caused by, or occurs because of, another condition. These underlying conditions include blood clots in the lung, and diseases like scleroderma or COPD.

Approximately 300 new cases of primary pulmonary arterial hypertension are diagnosed in the United States annually. Secondary PH is more common.³

Treatment does not cure PH, but only helps people with the disease manage their symptoms. Those include anticoagulants; calcium channel blockers, which relax and open blood vessels; epoprostenol (Flolan/a prostacyclin), which widens the arteries of the lung and inhibits blood clotting; treprostinil (Remodulin), another prostacyclin; bosentan (Tracleer); inhaled nitric oxide; sildenafil (Viagra); and diuretics, which may help ease symptoms and help the heart perform better.

Questions About the Co-Existing Illnesses

As severe PH occurs occasionally in people with chronic obstructive pulmonary disease, Chaouat and his team wanted to derive more knowledge about these co-existing ailments. Up to this point, "no detailed description of these patients" had been available, they wrote.

To clarify how often severe PH occurs in people with COPD, Chaouat and his team conducted a retrospective study of 27 patients with both illnesses. They were among nearly 1000 patients who had undergone a heart catheterization procedure, designed to open narrowed arteries, between 1990 and 2002 "as

part of a workup for chronic respiratory failure during a period of disease stability." The researchers pulled records on all 27 patients, and examined the relevant data. The average pulmonary artery pressure for these patients with both COPD and PH was at least 40 mm Hg.

PH Wasn't Common

Of these patients, 16 had a second disease that could have caused their severe pulmonary hypertension. "The remaining eleven patients had COPD as the only cause of pulmonary hypertension," Chaouat and his colleagues reported.

Compared with a second group of patients whose records were analyzed, and who had COPD without PH, the eleven patients with both diseases had an unusual pattern of cardiopulmonary abnormalities with mild to moderate breathing difficulties, severely low blood levels of both oxygen and carbon dioxide (hypoxemia, hypocapnia), and a very low ability to diffuse carbon monoxide.

The patients with both illnesses also had extreme shortness-of-breath, and their odds of survival were shorter compared to the patients with COPD alone, or other pulmonary hypertension patients.

In conclusion, the French researchers determined that severe PH is a rarity in COPD, and that when it does occur, another cause should be sought. "COPD with severe pulmonary hypertension and no other possible cause shares features with pulmonary vascular disease, such as idiopathic pulmonary hypertension," they wrote.

.....Source: Priority Healthcare

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MOST AMERICANS DON'T LINK TUMMY FAT WITH HEART DISEASE

Six out of 10 Americans do not recognize excess abdominal fat as a major cause of heart disease and diabetes, according to a new survey.

The Shape of the Nations Report, sponsored by the World Heart Federation, quizzed doctors and patients in the United States and 26 other countries to see how many were aware that abdominal fat is a big risk factor for heart disease. Many Americans ranked that "spare tire" around the waist as being just the sixth leading cause of heart disease. In contrast, some of the doctors surveyed identified excess abdominal fat as having nearly the same impact on heart disease as high blood pressure and high cholesterol levels.

"This report confirms what we have suspected," said Dr. Stephen Daniels, a professor of pediatrics at Cincinnati Children's Hospital Medical Center, and a spokesman for the American Heart Association. "Physicians are beginning to understand that abdominal obesity is an important part of risk for heart disease, but many in the lay public are not aware of that."

Despite the importance of abdominal fat as a risk factor, 62 percent of the doctors surveyed said they do not measure their patients' waistlines to check for overweight and obesity. "Many doctors aren't following through by measuring waist circumference," Daniels said. Furthermore, 58 percent of the doctors overestimated the waist circumference at which female patients are considered at risk for heart disease and diabetes,

A waistline of more than 35 inches for women and more than 40 inches for men is considered a high risk for heart disease and diabetes, according to the American Heart Association. "Measuring waist circumference is a simple thing," Daniels said. "It probably should become part of the physician's routine."

Ninety-five percent of women at risk for heart disease said their doctor never measured their waist circumference. In addition, none of the women could accurately identify the waist circumference at which they are at an increased risk for heart disease and diabetes.

Seventy-one percent of women said that their doctor never told them that excess weight, including high-risk abdominal fat, boosted their risk for heart disease. Indeed, some doctors said they overlooked waist circumference in women more often than in men.

"We are living in a world that promotes obesity," Daniels said. "We have become more sedentary. We have more eating opportunities and those opportunities have higher calorie-density food. It really becomes a day-to-day approach to changing behaviors to eating and physical activity. A big step in the right direction is to build in at least 30 minutes a day of moderate physical activity." Daniels also recommends a balanced approach to eating by "cutting down on portions, and focusing on lower-fat foods and whole grains and fruits and vegetables."

Another expert advised that the overweight see a dietitian if they need help losing weight. "If physicians would actually measure people's abdomens, that would make it a more concrete notion for people to understand," said Samantha Heller, a senior clinical nutritionist at New York University Medical Center. "The physician should explain what the risks are, followed by a referral to a registered dietitian, so they can learn what they need to do to lose some weight," she said.

Dr. David Heber, a professor of medicine and director of the UCLA Center for Human Nutrition, said he supports the World Heart Federation's report. "But I would caution that not everyone with an increased waist has metabolic syndrome," he said, referring to the combination of risk factors that are thought to lead to cardiovascular disease. "We have completed studies at UCLA which indicate that there may be other genetic factors involved." It has been estimated that 80 percent of all heart disease in the next 10 years will be linked with type 2 diabetes associated with obesity, Heber added.

"Simply taking a waist circumference, while raising awareness, does not provide physicians with the tools they need to follow up and effectively change the lifestyle of overweight and obese patients," he said. "I am convinced we need new ways to reach out to the 50 to 60 percent of the population with pre-diabetes, or as I call it, 'Diabesity'."

Another expert thinks waist circumference is a valuable measurement that can identify people at risk for heart disease. "Epidemic obesity is unquestionably a health crisis in the United States, and for that matter, in much of the world," said Dr. David L. Katz, associate director of the Rudd Center for Food Policy and Obesity at Yale University. "But it is a crisis in slow motion, one that has crept up on us over years, and even decades." No

one should be surprised that the public and providers alike have a long way to go on the obesity 'learning curve,' a key message from the report, Katz said. "This is important information," he said. "The distribution of body fat is important in determining health effects. As we cultivate a more universal appreciation for the health hazards of obesity, we may expect greater attention to waist circumference as a potent predictor of cardiac risk."

.....Source: HealthDay

DIETING? DON'T GIVE UP PROTEIN

As the incidence of obesity in the United States and other developed nations reaches record highs, the percentage of these populations that are dieting is also climbing. A new study finds further support for the idea that low-carb diets can be especially effective, as long as they don't lead people to eat extra fat or avoid exercise. In nutritional parlance, carbohydrates refer to sugars and starches. Amongst dieters, carbs have come to refer to foods especially rich in these food constituents, namely potatoes, rice, grains, breads, candy, fruits, and vegetables.

Cutting carbohydrates to trim weight—often under the rubric of the Atkins Diet or the Zone Diet plan—has grown popular in recent years. Boosting these regimens' appeal have been several major studies showing that, compared with equal-calorie diets rich in carbohydrates, low-carb ones help people shed the pounds more quickly and yet experience less hunger while doing so.

However, many people who have pulled carbs from their diets have replaced sweet and starchy foods with fatty ones. The fact that many low-carb diets are, in fact, high in fat may explain some potentially detrimental cholesterol trends in a substantial subset of low-carb dieters (SN: 7/17/04, p. 40).

The new study explored what would happen if the ratio of fats in the diet were held constant and the pared carbohydrates were replaced, gram-for-gram and calorie-for-calorie, with protein. This 4-month trial, conducted in 48 obese women between the ages of 40 and 56, also assigned half of the volunteers on each diet to a low-intensity exercise regime.

The findings, reported in the August *Journal of Nutrition*, showed not only that the dieters lost more weight on the low-carb, protein-rich fare, but also that they lost more body fat than muscle. Moreover, women on the protein-rich diet who exercised lost 20 percent more weight than did the more-sedentary women on this diet. That's a bit surprising, notes study leader Donald K. Layman of the University of Illinois at Urbana-Champaign, because the prescribed exercise shouldn't have been enough extra activity to translate into any



PROTEIN'S ADVANTAGE. Leucine, an ingredient in meats, appears to do more than just help preserve muscle in people who are dieting. Among women who engaged in mild exercise, it actually appeared to boost weight loss compared to dieting volunteers who ate equal-calorie meals low in this



LOW-CAL CAVEAT. Low-calorie diets that are rich in starches, such as pastas, aren't as effective at trimming the body of fat as are similarly low-cal but protein-rich meals.

discernible weight loss. Indeed, the exercise regimen didn't provide any extra weight loss to the women eating the carb-rich diet.

What this means, he told Science News Online, is that the extra protein some women were eating somehow collaborated with exercise to reduce weight. "This is really surprising, and, frankly, pretty important," Layman says, since the observation flies in the face of most nutrition guidelines, which advise dieters and everyone else in the

United States to eat less protein, not more.

Protecting muscle

For their new trial, Layman and his colleagues gave their volunteers 2-week menus and directions on how to prepare the recipes. Participants were instructed to weigh portions to ensure she didn't eat more than the recommended amounts. Each woman's energy intake was expected to run about 1,700 calories per day. In fact, based on weight losses and records, it became clear that most women consumed even fewer calories, in the range of 1,400 to 1,600 per day.

Each woman ate the same foods, regardless of her diet. What differentiated the two diet groups were the allowed portions. For instance, the high-carb group was instructed to eat eight servings of starchy foods per day, which included breads, cereals, rice, and potatoes. "The high-protein group also ate bread and other starchy foods, just half as much," Layman says. Similarly, while the high-protein group was instructed to eat 9 ounces of meat and eggs per day, the high-carb eaters were restricted to just 5 ounces.

In the end, women on the high-carb diet ate about the same proportion of macronutrients as they had been downing before taking part in the study: 55 percent of their calories as sugars and starches, 30 percent as fat, and 15 percent as protein. It was the other group that made major changes in the ratio of these macronutrients. The high-protein group consumed only 40 percent carbs, 30 percent fat, and 30 percent protein. Moreover, the proteins included in each day's menus were dominated by what Layman terms "high-quality" protein—the type especially rich in the amino acids that build muscle. Some of these amino acids, such as leucine, aren't made by the body and must be obtained from the diet—primarily from foods such as meats, dairy, eggs, and soybeans.

Ensuring that each diet provided adequate leucine was a focus of the menu planning, Layman says. He explains that this amino acid is valued for "regulating one of the first steps in turning on the machinery for protein synthesis." That's important, since muscle is almost all protein.

Adding a little exercise to the diet regime helped keep a woman's metabolism revved up longer and her muscles conditioned. The two groups that were prescribed exercise were required to take part in a supervised 30-minute walk 5 days a week and to do 30 minutes of stretching and resistance exercise

twice a week, using gym machines dialed to minimal weights. Even the two more-sedentary groups were advised to walk 30 minutes a day 5 days a week, Layman says, although their compliance wasn't monitored.

The protein focus seems to have paid rich dividends, Layman says, since women on the protein-enriched diets preserved more of their muscle than the high-carb diners did. That means that protein and exercise combined to reduce the women's weight by burning body fat.

Both dieting groups trimmed more body fat when they undertook some extra exercise. Sedentary women on the protein diet dropped 15 percent of their body fat during the trial, and those who added in extra exercise lost 21.5 percent of their body fat. By contrast, those who exercised and ate the high-carb fare lost 15 percent of their body fat, while their sedentary counterparts on that diet shed only 12.3 percent of their fat.

Preserving muscle is important, Layman stresses, since—unlike fat—it burns substantial energy when the body's at rest. The higher the proportion of the body that is lean muscle, the higher its energy demand and the more likely that an individual will burn most of the calories she eats—not store them as fat.

The encouraging news, he says, is that the short-term advantages seen in the high-protein part of this trial can be maintained. Some of the women were recruited to stay on their regimens for another year, he notes, "and we find that basically the same results continued" for each group.

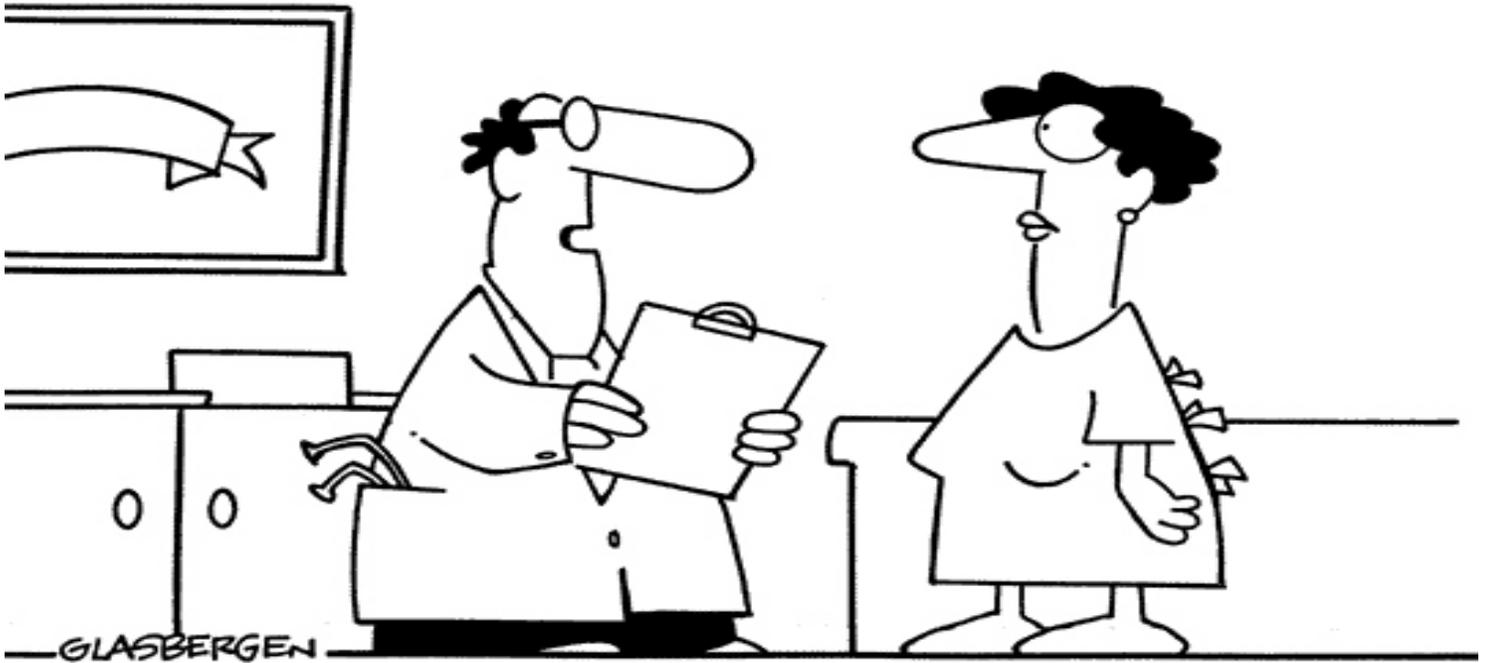
In a pair of papers he coauthored during the past 2 years, Layman has reported that a key feature of the protein diet's advantages may be leucine. Although a building block of protein, it may have additional metabolic activities, such as being a signaling agent that helps regulate the rate of muscle building and the body's use of blood sugar, he notes. For these functions, leucine may have to be present in concentrations higher than those needed just to build protein.

In fact, Layman says that leucine-rich diets might even help stabilize blood-sugar concentrations before and after meals—a boon to anyone with type 2 diabetes or a constellation of related heart-disease risk factors known as Syndrome X. He plans to investigate leucine's potential value for such individuals in upcoming studies.

.....Source: Science News, Vol. 168, No. 11, Sept. 10, 2005

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**DON'T FORGET!! NOVEMBER
IS COPD AWARENESS MONTH
AND NOVEMBER 16TH
IS WORLD COPD AWARENESS
DAY**



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