

EFFORTS

Emphysema Foundation For Our Right To Survive



Emphysema Takes Your Breath Away

November 2005

GENERAL FLU INFORMATION

- Influenza, commonly called "the flu," is a serious respiratory illness caused by a virus that attacks the upper respiratory tract
- The flu is highly contagious and can easily be transmitted from person to person through coughs and sneezes that transmit respiratory secretions through the air
- Each year, 25 to 50 million people in the U.S. are infected with the flu and become sick for approximately one to two weeks
- Many confuse the flu with the common cold, but in actuality, in the United States more than 200,000 people are hospitalized for flu-related complications and an average of 36,000 people die annually
- The flu spreads around the world in seasonal epidemics, causing considerable economic burden and significant strain on medical resources
- Lost productivity is a major result of widespread flu illness. Each year in the U.S., flu epidemics lead to approximately 192 million days in bed, 70 million lost workdays, 38 million lost school days and 346 million days of restricted activity

Flu Vaccine Information

- Flu vaccines matching or similar to the predominant circulating strains have long been shown as the most effective measure available to help prevent the flu
- An annual vaccination may protect people from the flu virus and may help stop the spread of infection through local communities and across the country

Close Contact

- Certain groups of people are more susceptible to complications related to the flu and are considered "high risk." These groups include the elderly, very young children and people with chronic illnesses
 - People who are in close contact with persons considered "high risk" from complications from influenza should get vaccinated against the flu so they don't transmit the virus
- "Not Too Late"**

- The flu season can begin as early as October and can extend through March, and often peaks as late as January or February. Getting vaccinated before the end of the calendar year is the best way to prevent the flu. However, a flu vaccine can still be effective when administered later, if there is still flu activity

.....Source: American Lung Association



FLU: HIGH RISK FACT SHEET

Who Should Receive Flu Vaccine?

Influenza (also known as "flu") is a serious respiratory illness caused by viruses that attack the upper respiratory tract. Flu is highly contagious and can easily spread from person to person via coughing and sneezing, which transmits respiratory secretions through the air. Each year, an estimated 25-50 million people in the U.S. contract the flu. Certain groups of people are more susceptible to serious complications associated with the flu and are considered to be "high risk." According to The Centers for Disease Control and Prevention (CDC), it is important for the high-risk groups below to receive a flu vaccination every year.

Who Is Considered to be High Risk?

The flu vaccine should be given to those who are most likely to have serious health complications if they contract the flu. Those identified by the CDC and Advisory Committee on Immunization Practices (ACIP) to be in the high-risk category and are a target/priority for receiving a flu vaccination include:

- All people who are 65 years of age and older
- Residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions
- Adults and children* who have chronic disorders of the pulmonary or cardiovascular systems, including asthma**
- Adults and children* who have required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or by human immunodeficiency virus [HIV])**
- Adults and children* who have any condition (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration**
- Children* and adolescents (aged 6 months to 18 years) who are receiving long-term aspirin therapy and therefore might be at risk for experiencing Reye syndrome after flu infection**
- People 2–64 years of age who have an underlying, long-term illness including*:

- o Heart disease
 - o Chronic lung disease (e.g. asthma, emphysema, chronic bronchitis, tuberculosis, or cystic fibrosis)
 - o Metabolic disease (e.g. diabetes, osteoporosis)
 - o Kidney disease (e.g. polycystic kidney disease)
 - o Blood disorder (e.g. sickle cell disease)
 - o Weakened immune system (e.g. HIV/AIDS)
 - Women who will be pregnant during flu season
- *Influenza vaccine is not currently indicated for children under six months of age.

**FLUVIRIN® Influenza Virus Vaccine is not indicated for children under four years of age.

Vaccination Beyond Target/ Priority Groups

Because the flu spreads from person-to-person, it is critical for people in close contact with those at high risk to get vaccinated in order to protect themselves and others from potentially serious and sometimes deadly complications. These groups include:

People aged 50-64

Persons who can transmit flu to those at high risk

- All healthcare workers
- Employees of assisted living and other residences for person in groups at high risk
- Persons who provide homecare to people at high risk
- Household contact of people at high risk

People should consult the current recommendations from the CDC for guidance on contraindications and precautions for use of the flu vaccine.

<http://www.cdc.gov/flu/protect/keyfacts.htm>

.....Source: American Lung Association



FLU - DEBUNKING THE MYTHS

Each year an estimated 25-50 million people in the U.S. contract the flu. People often misunderstand and underestimate the serious and even deadly complications that can arise as a result. Behaviors resulting from myths surrounding the flu may contribute to the fact that, in the United States, more than 200,000 people are hospitalized for flu related complications and an average of 36,000 people die annually.

MYTH: The flu vaccine is only for people who are at high risk

Anyone exposed to the flu virus can get the flu. The virus is contagious and can spread easily among people. High-risk groups are typically defined as the elderly, young children and people with chronic illnesses. All people who are in close contact with those that are considered "high risk" are advised to get a flu vaccination to protect themselves and others.

MYTH: I got vaccinated last year, so I don't need to get vaccinated this year

The dominant strains of the flu virus change every year and the formulation of the flu vaccine is adjusted annually to include the most current circulating flu strains. It is important to get vaccinated every year to help protect yourself against the flu.

MYTH: The flu is just a bad cold

A cold and the flu are both respiratory illnesses but they are caused by different viruses. In general, the flu is worse than

a cold and symptoms such as fever, body aches, extreme tiredness and dry cough are more common and intense. People with colds are more likely to have a runny or stuffy nose. Colds generally do not result in serious health problems such as pneumonia, bacterial infections, or hospitalization. No vaccine can prevent a cold, but the flu vaccine can help prevent the flu.

MYTH: You can get the flu from the injected vaccine

The injected shot is composed of an inactivate or killed virus that cannot cause disease. You cannot get the flu by receiving a flu shot.

MYTH: The flu cannot cause serious health complications or death

In fact, in the United States an average of 36,000 people die annually from flu and flu-related complications. Flu and pneumonia together are the 7th leading cause of death in the United States. Complications resulting from the flu can include bacterial pneumonia, dehydration, and worsening of chronic medical conditions, such as congestive heart failure, asthma, or diabetes. Children may experience sinus problems and ear infections.

MYTH: There is no way for doctors to diagnose flu for sure

A physician may diagnose flu based on symptoms and physical exam. In addition, laboratory tests can confirm a flu diagnosis. The virus may be cultured from swabs of your deep nasal passages or throat, or blood tests may confirm a rise in your antibody to the virus, indicating a recent infection.

MYTH: The flu cannot be passed from person-to-person

While many think the cold weather or going out with wet hair may contribute to the flu, it can only be transmitted by an infected person, which is why it is vital for those who are in close contact with people who are considered high risk to get vaccinated each year.

MYTH: Most people catch the flu by December

According to Advisory Committee on Immunization Practices (ACIP), the flu season can begin as early as October and can extend through March, and often peaks as late as January or February. Getting vaccinated before the end of the calendar year is the best way to prevent the flu. However, a flu vaccine can still be effective if administered in January.

MYTH: Stomach flu is a certain type of flu

People often use the term "stomach flu" to describe illnesses with nausea, vomiting, or diarrhea. Many different viruses, bacteria, or even parasites can cause these symptoms. While vomiting, diarrhea, and being nauseous or "sick to your stomach" can sometimes be related to the flu -- particularly in children -- these problems are rarely the main symptoms of influenza. The flu is a respiratory disease and not a stomach or intestinal disease.

.....Source: American Lung Association



WEBSITES BOLSTER CHRONICALLY ILL

Using interactive websites can help people with long-term conditions that include depression, heart disease and HIV/Aids, a study has found.

A review by University College London found sites with information alone were of little use. They said people benefited from sites which also linked them to people with the same condition, or supported them in other ways. The conclusions were backed by doctor-patient groups.

The UCL researchers looked at 24 studies involving 3,739 participants who all had chronic (long-term) health conditions. They looked at these people's use of interactive computer websites and programmes, which contained information services plus online support groups, chatrooms, or tailored advice based on a person's details, affected people with such chronic diseases.

Interactive sites were of greater benefit to people than those with information alone, or not using sites at all. The researchers found such sites have largely positive effects on users, making them feel better informed and more socially supported. Overall, people who used such sites appeared to see improvements in the way they looked after their health and in their clinical condition. They also had improved self-efficacy - a person's belief in their ability to carry out potentially-beneficial actions.

'Website guide'

Dr Elizabeth Murray, who led the Cochrane Review team, said: "People with chronic disease often want more information about their illness and the various treatment options available. "They may also seek advice and support to help them make behaviour changes necessary to manage and live with the disease, such as changes in diet or exercise. Computer-based programs which combine health information with, for example, online peer support may be one way of meeting these needs and of helping people to achieve better health."

She said many of the sites which had been studied had been set up by academics for the duration of the research. But she said her team's findings offered people a guide as to what kinds of sites to use.

Larger studies needed

"If the site includes support, such as chat rooms, that's what you're looking for. Who runs it is also important - is it a respectable body? And if there is advertising, that can be a warning sign, because then you wouldn't know whether or not the support being offered was biased or not." But she said larger scale studies were needed to confirm her team's findings.

A spokeswoman for Developing Patient Partnerships said interactive sites were a weapon in the armoury that helped people with chronic health problems manage their conditions. The UCL group were looking at the potential benefits of interactive websites for the second time.

Their first review, published last year, which found websites did not have benefits, was withdrawn after it was found a statistical error had been made in its preparation.

.....Source: BBC NEWS



COPD: A CHILDHOOD ILLNESS?

At the European Respiratory Society (ERS) 15th Annual Congress, Peter Helms and M. Zach hosted a well-attended

session that reviewed the available evidence suggesting adult chronic obstructive pulmonary disease (COPD) could begin in childhood; specifically, that the natural history, underlying mechanism, and therapeutic responses of nonatopic childhood obstructive airway disease progress to adult COPD. The symposium also covered implications for research and disease management. Helms covered epidemiologic evidence for the early onset of COPD. He said that respiratory disease incidence, including upper respiratory tract infections, asthma, and COPD, is "U" shaped, with the highest frequency among the very young and the very old. He questioned whether the early and late peaks might be linked. Does an early insult have long-term implications? Postnatal alveolarization of the lungs continues to the age of 3 years. Barker showed, from Herefordshire midwife data, that low-birth-weight infants have a low forced expiratory volume in 1 second (FEV1) in adulthood and a high death rate from lung disease not including cancer. He quoted data from Lopuhaa and colleagues[1] that in utero starvation was associated with an increased odds ratio for wheeze and other respiratory symptoms. Srivastava presented data at the ERS that exposure to cigarette smoke in utero and/or in early childhood is associated with bronchial hyperresponsiveness (BHR) and the tendency to become an active smoker in adulthood. Helms noted that wheezy bronchitis is a childhood disorder associated with intercurrent respiratory tract infections characterized by wheezing, airway obstruction, and increased rate of decline in FEV1.[2] In contrast to asthma, wheezy bronchitis is not associated with increased eosinophils in bronchoalveolar lavage or atopy. Grandparents of children with wheezy bronchitis have a nearly 2-fold greater potential of having chronic bronchitis. Helms postulated that wheezy bronchitis may be the juvenile precursor to COPD.

Evidence of Onset

Neil Barnes presented the topic "Evidence for the Onset of COPD in Childhood and the Role of Genetics." Dr. Barnes postulated that among smokers developing airways obstruction, the severity of that obstruction is markedly impacted by the FEV1 at age 20 years. He listed several factors that may adversely affect lung function at full growth. These included social deprivation such as lack of running water in the household, pneumonia,[3] and smoking at an early age.[4] Barnes said that rate of decline of FEV1 was also an important determinant of severity of airways obstruction. Factors cited that affect rate of decline of FEV1 in addition to cigarette smoking are asthma,[5] BHR,[6] and severity of airway inflammation. He quoted data from Scanlon and coworkers[7] and Calverly and colleagues[8] that suggest there comes a point on the FEV1 decline curve where even smoking cessation becomes marginally effective in affecting the accelerated decline in FEV1. Barnes concluded by citing frailties in genetic studies of COPD. These studies are frequently compromised by difficulty with phenotyping such as physiologic subtypes (emphysema or chronic bronchitis), rate of decline of FEV1, attainment of normal or low FEV1 at growth cessation, anatomic subtype (cachexia or obesity), antioxidant response, and beta2 receptor response.

Risk Factors

The third presentation, "Childhood Risk Factors for the Development of COPD: The Evidence," was presented by Erica Von Mutuis from Munich, Germany. She cited additional evidence that socioeconomic factors[9] and pneumonia[10] in childhood influence the development of COPD in adulthood. Von Mutuis concluded by quoting Orie's Dutch risk factors cited for COPD above as also risk factors for BHR irrespective of asthma.

Christer Janson from Uppsala, Sweden, replaced C. Svanes from Malaga, Spain, to present "Passive and Active Smoking in Childhood for COPD." He quoted his own work that demonstrated that adults who had been exposed passively to cigarette smoke had, on average, a mean FEV1 that was 63 mL less than those not exposed.[11] A meta-analysis[12] showed that boys tended to experience a greater decrease in FEV1 than girls who were passively exposed to tobacco smoke. Elliott and coworkers observed decreased numbers of alveolar attachments in infants dying from sudden infant death syndrome that were exposed to cigarette smoke in utero compared with those who were not.[13] Janson presented data from Svanes and colleagues[14] that extended the work of Elliott. This study showed that in utero exposure to tobacco smoke was associated with greater decrements in FEV1 than early childhood exposures and confirmed that girls fared better than boys with passive smoke exposure. Janson showed work of Patel and colleagues[15] and Ludvikdottir and colleagues[16] that confirmed that early initiation of cigarette smoking is associated with greater reduction in FEV1 and more respiratory tract symptoms.

Early Intervention

Michael Silverman gave the concluding presentation in this session, "Possible Opportunities for Early Intervention." He aimed to answer 3 questions: (1) is there evidence that early intervention is useful? (2) what are the targets of these interventions? and (3) do we have the tools? To answer these questions, Silverman proposed that we needed to move our focus from observation to mechanism. As an example of the importance of this concept, he stated that if it was known what controls alveolarization, then it can be repaired. He cited 3 possible confounding issues: growth and repair genes, prematurity and respiratory distress of the newborn, and finally that cause may not easily be distinguished from effect. Silverman referred to Peter Barnes' recent review in the European Respiratory Review of targets for COPD therapy and concluded that they were multiple and complex. He opined that the most important targets were lung growth and development[17] and remodeling and repair of the lungs. With regard to tools, he said that especially when evaluating conditions associated with hypoplasia, a way to measure lung growth in infants might select those at risk for COPD. He summarized that what is known is that good nutrition, prevention of prematurity, and avoidance of smoke in utero and in early childhood will significantly reduce the incidence of adult obstructive lung disease. Other treatment interventions currently under study include matrix metalloprotease inhibitors, antioxidants, and retinoids. He said that we have the

tools to detect outcomes and that FEV1 is no longer a sufficient measure. He suggested that gas mixing inhomogeneity and forced oscillation may be better surrogates. Structural abnormalities could be quantified by CT and ³He MRI. Silverman concluded that the epidemiologic evidence is strong; the tools to study lung development are available; environmental targets are available; cell targets need to be defined.Source: Medscape

HOLDING THEIR BREATH FOR THE BREATHLESS *Researchers try to get to the bottom of breathing skills*

Have you ever felt "air hunger"? People with asthma, emphysema, and obstructed lungs feel it often - a sensation that they can't get enough air to breathe. Divers who attempt to hold their breath for six minutes or more and who reach depths of hundreds of feet without the help of air tanks, know the feeling well. Somehow, they can tolerate that desperate urge to breathe better than most people.

Two researchers at the Harvard School of Public Health (HSPH) got the idea of studying free divers to get information that would help them help the breathless to breathe better. "We hope that by studying these athletes, we can teach patients how to better cope and recover from episodes of breathlessness," says Andrew Binks.

Unlike the pain these patients feel, which can be handled with the help of special drugs, no treatments exist for breathlessness. "This is primarily due to insufficient research on the physiology of air hunger," Binks notes. "We're decades behind the pain field, despite shortness of breath being so common."

"Shortness of breath, or dyspnea, is a prominent symptom of many serious diseases, especially asthma, emphysema, and pneumonia, and including heart disease," comments Robert Banzett, associate professor in the Department of Environmental Health at HSPH. "Patients with severe dyspnea say things like, 'When the shortness of breath was at its extreme, I thought I was going to die.' Dyspnea is reported by about 25 percent of the general public older than 40 years, making it one of the most common symptoms that cause people to seek medical care. It is also a predictor of early death. You are twice as likely to die early if you experience it."

Banzett works with Binks, a visiting scientist from the University of New England in Portland, Maine, at the Harvard School of Public Health's Department of Environmental Health. They are testing four championship free divers there. These mermen and maids include Tom Sietas, who holds the world record for a breathhold - nine minutes and 58 seconds. Most normal, healthy people average about one minute.

Another volunteer diver, Tanya Streeter, dove to a record depth of 400 feet in 2003 and returned on a single breath. She descended on a weighted sled to a point about as deep as a 35-story building is high, and resurfaced with the help of a balloon. Streeter is 32 and jokes that she is "too old to be doing this craziness. But it's a huge desire of mine that the researchers may discover something about me that can help patients suffering from shortness of breath."

No magic bullet

Streeter and the other divers took a battery of tests to see

why their breathing capacity is so different from that of other people. Both they and a comparison group of normals were hooked up to a mechanical ventilator that controlled how often and how deeply they breathed. This device prevented the divers from breathing faster and deeper than nondivers.

Then the subjects began to inhale increasing amounts of carbon dioxide to mimic what happens when people hold their breath. Oxygen decreased and carbon dioxide built-up in their blood until that awful feeling of air hunger started to make them uncomfortable. They wanted another gulp of air and fresh oxygen more than anything else.

"Our expectation was that normal, healthy people would reach that point much quicker than the athletes," Binks says. But what actually happened left him and Banzett breathless. Streeter and the other divers hit the ceiling of discomfort at the same time as untrained people. They signaled for relief from the increasing carbon dioxide as soon as everyone else. "It turns out that they're just like the rest of us," Banzett comments. "That was both a surprise and a disappointment," Binks remarks. "There's no magic bullet for patient treatment. We have to go back to the drawing board."

Breathing tricks

The divers will return for more tests later this fall. At that time, Binks and Banzett will take a closer look at some techniques free divers use to make a single breath last so long.

One trick is hyperventilation. The diver breathes as hard and fast as she or he can, reducing the levels of carbon dioxide in their blood before a deep descent. That way the gas builds at a slowed rate.

Then there's lung packing, or "frog breathing." That involves taking very deep breaths and then squeezing more air into the lungs by additional breathing through the mouth. "Using a combination of hyperventilating and fuller lungs, they can postpone the onset of air hunger," Binks explains. "The mechanical ventilator used during our tests didn't allow them to use those techniques."

While these tricks help experienced free divers, further tests are needed to determine if lung packing could damage the weakened lungs of the people who are ill. Also, hyperventilation might be too uncomfortable, making patients dizzy, even causing them to pass out. "These are questions we must answer with more tests," Binks says.

"For patients experiencing breathlessness, it becomes an ever-tightening spiral," Banzett point out. "They begin to fear any physical activity because it may trigger air hunger, so they exercise less and become even less healthy. They stop doing things like walking around the block or even up stairs. This may not only have physical but social repercussions as well." "That," adds Binks, "is what we want to find ways to fix or avoid."

.....Source: Harvard News Office



NEW STUDY CALLS FOR CHANGE IN THE MANAGEMENT OF COPD TO FOCUS ON PREVENTION OF "LUNG ATTACKS" TO ADDRESS PATIENTS' FEARS

An international study of COPD patients, published October 1 in the European Respiratory Journal, shows that, above all else, COPD patients want to avoid being housebound or hospitalised due to attacks of acute worsening, known as exacerbations or "lung attacks". Dr John Haughney, lead study author, GP and lecturer at the University of Aberdeen comments: "I strongly believe that reducing the frequency and severity of exacerbations, and treating them aggressively and effectively, are even more important than long term symptom management, and should be the main focus of treatment. This will help patients to remain active and avoid being housebound and hospitalised". Previously, the popular belief was that patients primarily wanted fewer of their usual respiratory symptoms such as breathlessness and cough, however, this study has shown that the impact of worsenings on everyday activities is more important to patients.

COPD is a devastating lung disease that gradually destroys the lungs, robs a person of their ability to breathe and can ultimately lead to their death. Exacerbations - an acute worsening of symptoms, often triggered by a respiratory infection, requiring medical intervention and often hospitalisation - are extremely distressing for patients and their families. 91% of patients report that exacerbations impact on everyday activities and cause 50% of patients to stop all activities.

The study was the first to use discrete choice modelling methods in COPD patients, a method which identifies their individual preferences by inviting them to prioritise attributes associated with COPD exacerbations. The authors conclude that the paramount concerns for patients with COPD worsenings are the level of impact on daily activities and the level of medical care they require. These are more important than concerns over the number of future attacks and severity of breathlessness.

Dr John Haughney continues: "Exacerbations have a huge impact on patients' quality of life and on their daily activities - we have to remember that many patients can end up being housebound or bedridden as a result of their condition worsening. This study shows that although patients quite understandably want to see an improvement in their general symptoms, avoiding the fear and inconvenience of hospital admission is more important to them."

COPD is estimated to affect 600 million people worldwide, making it one of the world's biggest chronic diseases, and it is expected to be the third leading cause of death by 2020. Between 22-40% COPD patients die within one year of an admission for their worsenings, which have been shown to cause more deaths than myocardial infarctions. It is well documented that exacerbations have a significant impact on the quality of life of both patients and their families - patients who have more frequent exacerbations have a worse quality of life, which in turn means they are more likely to experience frequent exacerbations, hospitalisations and even death.

The internationally recognised GOLD (Global Initiative for Chronic Obstructive Lung Disease) guidelines for the management of COPD were updated in 2004 and recommend

the treatment and prevention of exacerbations as key treatment goal in COPD. Particularly in patients visiting their GP with a worsening of their COPD, their treatment should be assessed to ensure that further exacerbations of COPD can be prevented.

Several treatments have been shown to reduce the frequency of exacerbations. However, budesonide/formoterol (Symbicort®) combination inhaler is the only treatment that has been shown to reduce the frequency of exacerbations requiring medical intervention compared to a long-acting bronchodilator (LABA) alone as an initial maintenance treatment in COPD. Since quality of life is impaired because of COPD exacerbations, an effective preventive treatment should result in a better health-related quality of life (HRQL). Symbicort is the only combination product in COPD that has been shown to produce a clinically important improvement in HRQL (according to St George's Respiratory Questionnaire) when compared to placebo. Furthermore, studies have shown that with Symbicort only about two COPD patients need to be treated over one year to avoid one exacerbation requiring medical intervention, compared to a LABA alone. For, e.g. medical treatments meant for prevention of myocardial infarction cardiovascular disease, the NNT (Number Needed to Treat) values are typically considerably higher, often over ten, and NNTs over 100 have frequently been observed for medical preventive treatments of severe outcomes in other disease areas.

Discrete choice modelling:

The study was the first of its kind in COPD, using discrete choice modelling to describe, quantify, and prioritise attributes associated with COPD exacerbations from the patients' perspective. The attributes of exacerbations considered most important were (ranked in order of importance): impact on everyday life and medical care, followed by number of attacks, breathlessness, speed of recovery, cough and phlegm/spit, and social impact, and sleep disturbance and impact on mood.

Study specifics:

The study was an international, cross-sectional study of patients' values regarding the characteristics and burden of COPD exacerbations in 125 patients in France, Germany, Spain, Sweden, and the UK. Men and women aged ≥ 50 years with a diagnosis of COPD based on GOLD criteria (GOLD 2003) presenting with forced expiratory volume in 1 second (FEV1)/forced vital capacity (FVC) of $<70\%$, and who had experienced 2 or more exacerbations (defined as the worsening of respiratory symptoms so as to require medical intervention [oral corticosteroids and/or antibiotics and/or hospitalization]) during the previous year and at least 1 exacerbation within the past 6 months were eligible for study inclusion.

Further information on COPD:

In addition to their everyday symptoms, patients with COPD suffer from periods of worsenings, so called exacerbations. In general, patients with severe COPD experience exacerbations more frequently than those with mild disease. An exacerbation is a deterioration in a patient's clinical status, with acute worsening of respiratory symptoms, such as coughing, wheezing, sputum production and shortness

of breath and impaired lung function. Exacerbations are also accompanied by increase in non-respiratory symptoms such as e.g. fatigue, malaise, insomnia, depression, anxiety and confusion. For patients with severe COPD, exacerbations tend to be associated with cardiac symptoms in addition to respiratory symptoms. Exacerbations often require medical intervention, and may lead to hospitalisation or death.

Studies have shown that exacerbations account for 25% of all emergency admissions in some countries. Between 22-40% COPD patients die within one year of an admission for their exacerbations.

Most cases of COPD develop after repeatedly breathing in noxious agents and fumes that irritate and damage the lungs and airways. In the western world cigarette smoke is the major contributing factor, but indoor air pollution, e.g., from cooking in poorly ventilated areas and intense occupational exposure to dust, gases or fumes and also possibly genetic factors may contribute to development of the disease.

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



STUDY: EXERCISE AMOUNT OUTWEIGHS INTENSITY

How much you exercise may be more important than how hard you exercise in terms of heart health, according to a study of sedentary overweight men and women. And, many will be happy to hear, exhaustive amounts of exercise are not needed for heart health.

In journal CHEST, researchers from North Carolina report that people who walk briskly for 12 miles per week or for about 125 to 200 minutes per week will significantly improve their aerobic fitness and lower their risk of developing heart disease.

"Anything beyond walking briskly for 12 miles per week, whether increasing your intensity or the amount of miles, has additional benefits," Brian D. Duscha from Duke University Medical Center in Durham who was involved in the research said. "So there is a separate and combined effect." He also emphasized that the 12-miles-per-week walkers in the study improved their fitness without losing any weight. "People need to know: even without losing weight, you are getting significant benefits by exercising -- you're improving your fitness level, decreasing fat and increasing muscle and improving your lipid panel -- so don't stop exercising. The other thing to realize is that people gain 3 to 4 pounds a year, so exercise is really important for weight maintenance."

There is a clear link between heart health and fitness. However, less is known on how the amount and intensity of exercise relates to increases in fitness for individuals at risk for heart disease.

To better understand the effects of different amounts of exercise on aerobic fitness, Duscha and colleagues randomly assigned 133 overweight sedentary men and women showing signs of rising cholesterol levels to 7 to 9 months of no exercise; low amount/moderate intensity exercise (the 12-miles-per-week walkers); low amount/vigorous intensity (12 miles of jogging per week); or high amount/vigorous intensity (20 miles of jogging per week).

The study subjects did not alter their diet during the study.

After completing their exercise assignment, all of exercisers had improvements in peak oxygen consumption and time to exhaustion -- two established markers of fitness - compared with levels at the beginning of the study.

Interestingly, however, the vigorous intensity exercisers did not get any "fitter" than the moderate intensity exercisers. "The moderate intensity group only exercised to 40 or 50 percent of their max," Duscha explained. "That's walking briskly up a hill or walking fast -- you could walk around the neighborhood after dinner and get that in. You don't have to go jog, climb on the stairmaster or elliptical trainer and kill yourself."

However, increasing the amount of exercise from 12 to 20 miles per week -- at the same intensity -- provides even more cardiovascular benefits.

"Therefore," Duscha and colleagues conclude, "it is appropriate to recommend mild exercise to improve fitness and reduce cardiovascular risk, yet encourage higher intensities and amounts for additional benefits."Source: CNN



CANCER DRUG MIGHT FIGHT LETHAL LUNG HYPERTENSION

Gleevec, a medication experts have hailed as a wonder drug in the fight against certain cancers, may also come to the rescue of patients battling lethal pulmonary hypertension. According to a case study in the Sept. 29 issue of the New England Journal of Medicine, a 61-year-old man suffering from an advanced case of the disease saw his condition improve and stabilize after taking Gleevec (imatinib) — even though all other medications had failed. "Only the addition of Gleevec was able to prevent further deterioration, and even improved his condition," said co-researcher Dr. Hossein A. Ghofrani, of University Hospital Giessen, in Germany.

Although a single case report does not warrant widespread use of Gleevec for pulmonary hypertension, the German researchers who wrote the report said they are now planning a large clinical trial. "I think a trial is a wonderful idea," said Dr. Richard Stein, a professor of clinical cardiology at Albert Einstein Medical College in New York City, and a spokesman for the American Heart Association. "Hopefully, we'll be able to make a real difference for these people." According to Stein, pulmonary hypertension occurs when blood pressure mounts to dangerously high levels in the pulmonary artery, which carries blood from the right side of the heart to the lungs. The relatively common condition can occur for many reasons, but most often arises as a byproduct of other pathologies, such as heart disease and various lung ailments. Under the strain of these conditions, the pulmonary artery thickens and stiffens, causing blood pressure to rise. "Right now, we have two classes of drugs that seem to be improving outcomes," Stein said. These include prostaglandin-linked compounds such as prostacyclin, and, more recently, another potent vasodilator—Viagra (sildenafil). Both drugs work by relaxing and opening narrowed vessels. None of these medications cure the disease or give the patient a normal life back, but most can prolong quality-of-life time

before they get very sick." Patients with very high pulmonary blood pressures usually don't live past a year, he said.

In the German case report, the patient was diagnosed with just such a case of advanced pulmonary hypertension, this time a rarer, "primary" form of unknown origin. Standard therapies such as prostacyclin and Viagra proved useless, and the man's condition continued to deteriorate. "In this desperate situation, we decided to initiate compassionate treatment with daily administration of 200 milligrams of oral imatinib mesylate (Gleevec)," given on top of the other medications, the researchers explained. The change in the man's condition was dramatic. By three months, his condition had improved "impressively," the researchers said, allowing him to become much stronger and more mobile than before Gleevec. That improvement has continued to the six-month point, they add.

The therapy appears to be working in other patients, too. "We have [successfully] treated more than 20 patients so far, all of which had no other therapeutic options or who were waiting on the transplant list for a new organ but appeared to run out of time," noted co-researcher Dr. Friedrich Grimminger, also of University Hospital Giessen.

How did a drug best known for curing chronic myelogenous leukemia beat back hypertension? Unlike the other drugs, Gleevec does not appear to work by dilating blood vessels, according to the researchers. Instead, the key to its effect lies in a phenomenon shared by both cancer and pulmonary hypertension. "In cancer, tissue proliferation is uncontrolled and leads to the spreading of the tumor," Grimminger explained. "In pulmonary hypertension, also, uncontrolled growth of the vascular wall is the underlying mechanism of the disease."

"Gleevec is a drug which suppresses uncontrolled growth of tissue by specific blockade of the so-called tyrosine kinase pathway," he added. "We have proven that this pathway also plays an important role in the course of pulmonary hypertension. Due to these similarities, the anticancer drug Gleevec also works in progressive pulmonary hypertension."

This mechanism made sense to Dr. Norman Edelman, chief medical officer at the American Lung Association. "What happens in response to hypertension is that vessels get thicker," he said. "The assumption is that [Gleevec] reverses that. So this treatment does have biologic validity, it's plausible."

In fact, because tissue proliferation is a hallmark of other serious illness, Gleevec's uses might expand even further, according to researcher Ghofrani. "Our current findings might open the door to a completely new therapeutic field of targeted treatment for chronic proliferative diseases such as atherosclerosis, COPD, lung emphysema or lung fibrosis," he said. Right now, the emphasis is on pulmonary hypertension, however. "A large worldwide clinical trial is about to be conducted under our scientific lead," Ghofrani said. Besides testing Gleevec's safety and effectiveness, "we also hope to answer the question [of] whether the drug also works in earlier stages of the disease," he noted.

Stein stressed that, right now, experts have "just one report

of the drug being effective." But he's hopeful that the results seen in this patient will be repeated in the upcoming trial. If that's the case, "Gleevec may turn out to be a valuable third product that we can use for these people," he said.

.....Source: HealthDay News



SMOKERS MORE LIKELY TO DEVELOP DIABETES

People who smoke are nearly three times as likely to develop diabetes as those who have never smoked, according to a study being published in the October issue of *Diabetes Care*. While previous studies have shown that smoking and diabetes can often lead to serious consequences, such as fatal heart attacks, this study investigated whether smoking can actually lead to diabetes.

"We can't say it often enough: Lifestyle factors are the key to reducing your chances of developing diabetes," said Mayer B. Davidson, MD, editor of *Diabetes Care* and past president, American Diabetes Association. "Study after study shows us, the way to prevent this disease is to eat nutritious and well-balanced meals, lose weight if you are overweight or obese, exercise and for goodness sake, quit smoking!"

"We've known for years that smoking causes lung cancer and seriously raises the risk for heart disease," said lead author Dr. Capri Foy, of Wake Forest University School of Medicine's Department of Public Health Sciences. "These findings suggest another poor health outcome associated with smoking. If that's not reason enough to quit, I don't know what is."

The Wake Forest study found that 25 percent of current smokers developed diabetes after five years, compared to just 14 percent of people who had never smoked. "There are several possible mechanisms by which smoking may increase a person's risk for developing diabetes," explained Dr. Foy. "For instance, higher levels of abdominal fat are associated with increased risk of diabetes, and some studies have shown that smokers tend to have more abdominal fat compared to people who have never smoked. These findings challenge the perception that smoking can help a person to maintain a "healthy" weight, because the distribution of the body weight may actually increase the risk of developing diabetes."

"Also, many studies have found that increased blood glucose levels, increased insulin levels, and increased blood pressure are all associated with increased risk of diabetes, and active bouts of smoking can produce increases in all three of these factors," she said. "What's more, cigarettes contain many poisonous substances along with nicotine, such as cadmium, which has been shown to be associated with diabetes. However, future studies are needed to determine the degree to which all of these factors contribute to the risk of developing diabetes."

A separate study, by researchers at the Department of Clinical Sciences at Lund University in Sweden, found that the lifestyles of women in their 50s and early 60s who lived alone greatly increased their chances of developing diabetes. Women who lived alone were 2.68 times more likely to develop diabetes than those who lived with other adults or children, the

study found. Researchers attributed the increased risk to higher cigarette consumption, poor eating habits and lower alcohol consumption (women who lived alone were more likely to completely abstain). Previous studies have shown that moderate alcohol consumption may decrease the risk of diabetes and cigarette smoking may increase the risk of diabetes. Numerous studies have linked poor eating habits to an increased risk of developing diabetes. The study found that women who lived alone ate less cereal fibers, fruits and vegetables and more saturated fats and carbohydrates than those who lived with others.

.....SOURCE American Diabetes Association



WHEN BREATHING NEEDS A TUNE-UP, HARMONICA CLASS HITS ALL THE RIGHT NOTES

Before the music can begin, the harmonica teacher makes sure everyone is in position. "Sit up straight. Feet on the floor. Try to breathe from the belly," she says. And then, with a burst of sound that is just shy of melodious, the students exhale through the instruments for a long count. They breathe in, out, then in a bit longer, then out a bit longer. After a while, they turn the page of their sheet music books to "Mary Had a Little Lamb," a song they perform with aplomb.

But how well they play "Mary Had a Little Lamb" or "The Old Grey Mare" or "Good Night Ladies" --isn't the point of the class at all. Indeed, one student cheerfully admits that she is tone deaf and has no sense of rhythm.

The students are members of a pulmonary rehabilitation class at the University of Michigan Health System. The weekly harmonica instruction is one way that people with chronic obstructive pulmonary disease (COPD) can focus on their breathing in a way that improves their respiratory function, says a pulmonary specialist at UMHS.

"In patients with COPD, even moderate but certainly more severe COPD, each breath is something they have to focus on. They have to understand what they can and can't do within the course of the day, based on their breathing," says Fernando J. Martinez, M.D., professor of internal medicine in the Division of Pulmonary and Critical Care Medicine.

"Playing the harmonica in the rehabilitation group requires a slow breath in and out to be able to modulate the tones that are coming out of the harmonica, so that the harmonica playing in itself requires the individual to focus on what they're doing with their respiratory pattern," says Martinez, also the director of Pulmonary Outpatient Services, the Pulmonary Function Laboratory and Lung Transplantation at UMHS.



It's not as easy as just playing a few notes every now and then. Students in the harmonica class say they have noticed a marked improvement in their respiratory function – but only after doing regular breathing exercises with the instruments. "It has really helped

with deeper breathing and strength, and my pulmonary function tests are much more stable," says participant Christine

Lakin. "So something is working – it's great, and I love it."

"I've noticed an enormous difference since I started the class, which was brought home to me when I decided that I enjoyed the harmonica so much I didn't hate practicing," laughs student Doris West.

People with COPD can take other actions to improve their respiratory function, experts say. Breathing exercises – with or without the use of a harmonica – are common recommendations from lung specialists, as are various medications and oxygen therapy. Martinez also recommends remaining as active as possible. The most important thing they can do is to stop smoking and to avoid exposure to cigarette smoke. "Cigarette smoking is the biggest risk factor for COPD in the United States," Martinez says.

For many people in the harmonica class, though, the best therapy of all involves their weekly get-togethers. "We love playing, and we get laughing over our mistakes. Our teacher is the only one that really can play it," participant Rhea Adgate says. "This is our social group. We love it to pieces."

Source: www.med.umich.edu



EFFECTS OF TESTOSTERONE AND RESISTANCE TRAINING IN MEN WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE.

Dysfunction of the muscles of ambulation contributes to exercise intolerance in chronic obstructive pulmonary disease (COPD). Men with COPD have high prevalence of low testosterone levels, which may contribute to muscle weakness. We determined effects of testosterone supplementation (100 mg of testosterone enanthate injected weekly) with or without resistance training (45 minutes three times weekly) on body composition and muscle function in 47 men with COPD (mean FEV₁ = 40%) and low testosterone levels (mean = 320 ng/dl). Subjects were randomized to 10 weeks of placebo injections + no training, testosterone injections + no training, placebo injections + resistance training, or testosterone injections + resistance training. ... The lean body mass increase averaged 2.3 kg with testosterone alone and 3.3 kg with combined testosterone and resistance training. Increase in one-repetition maximum leg press strength averaged 17.2% with testosterone alone, 17.4% with resistance training alone, and 26.8% with testosterone + resistance training. Interventions were well tolerated with no abnormalities in safety measures. Further studies are required to determine long-term benefits of adding testosterone supplementation and resistance training to rehabilitative programs for carefully screened men with COPD and low testosterone levels.

.....Source: <http://www.ncbi.nlm.nih.gov>



OZ: MEDICARE GOES PHYSICAL

Thirty years of lectures on the dangers of his sedentary lifestyle - warnings of impending stroke, heart disease and diabetes included - haven't got Norm, the quintessential Aussie couch potato of Life. Be in it fame, to change his ways. "I'm not fat - I've just got big stomach bones," the face of the

Government's campaign against obesity quips as one commercial closes. Like many Australians, Norm's heard the horror stories, but he's still not exercising.

For decades the federal Government has funded campaigns like this promoting the importance of exercise, but it has offered little in terms of practical support for people who may not only struggle with motivational factors, but also face real health risks if they suddenly start exercising on their own.

But last month federal health minister Tony Abbott announced that beginning in January 2006 exercise physiologists (EPs) will be among the allied health professionals able to provide Medicare services to people with chronic and complex illnesses.

From January 1 patients with chronic diseases who are referred by their GP will be eligible for a \$45.85 Medicare rebate. As with other allied health professionals, EPs will have to work within a care plan designed by the patient's GP in order for the service to qualify for the rebate. In the past, the hefty administration involved meant GPs didn't always write the plan, leaving either the patient, or if the service was bulk-billed, the allied health care professional, out of pocket.

But the Government has introduced changes to streamline the process and cut down red tape: from November 1 allied health professionals will only have to write an initial and final report on each patient (unless it's "clinically necessary" to report more often) - as opposed to the current requirement to write a report for every service provided. And they'll no longer have to attach a signed copy of the GP's referral form to Medicare claims.

The move to include EPs on the scheme has been lauded as a "world first" by the Australian Association of Exercise and Sports Scientists (AAESS), the professional group that had been lobbying the Government on the issue for more than two years to include EPs in the rebate scheme.

But despite Government acknowledgement of the role exercise physiologists can play in preventing and controlling chronic health problems, there's a tendency for people to lump them together with personal trainers or physiotherapists - if they think of EPs at all, says Chris Tzar, president of the AAESS's NSW branch.

"The federal Government has just approved Medicare rebates for exercise physiology services, yet the public have never even heard of us," says Tzar, who is also manager of the Lifestyle Clinic run by the University of NSW's Faculty of Medicine.

Until he was diagnosed with type 2 diabetes in April, Sydney-based management consultant Steve Jones could be counted in that category. When his GP suggested that a structured exercise program could minimise or even eliminate the need for medication, Jones enlisted an EP. He went from almost no structured exercise to five to six days of exercise a week - alternating between a specialised resistance training program and an hour of walking on the off-days. He's even taken up water aerobics. "My HbA_{1c} (an indicator of blood sugar levels) dropped from 7.3 to 6.4 in five months without any medication," Jones says. He's built up more muscle and

lost seven kilos as well, and expects his blood sugar levels to keep dropping. By February, Jones says his HbA1c should be below 6 - within the normal range.

"I needed to get more attuned to exercise and I knew I couldn't do it on my own. A personal trainer would have worked me too hard and it wouldn't have been sustainable in the long term," Jones says. Unlike personal trainers who work in a largely unregulated industry with variable training, exercise physiologists have a four-year university degree and must be accredited by the AAESS. Personal trainers work with healthy people who want to improve their fitness, whereas EPs work to improve the health of people with underlying medical conditions. While physiotherapists diagnose and deal with musculoskeletal disorders and acute injuries through therapy such as massage, exercise physiologists use active therapy to help prevent and control chronic health problems such as diabetes, heart disease, stroke, depression, obesity, hypertension, chronic fatigue syndrome, osteoporosis and arthritis.

Exercise physiologists say the key is that the patient "owns" their exercise plan and shares in the responsibility and management of their health. "It's lifestyle intervention that people can incorporate into a routine so it just becomes a standard thing that they do," Tzar says. "The Government has been forced to look at lifestyle as a major contributing factor to chronic disease and now we're looking at how people can take more responsibility; how we can help patients help themselves, rather than just helping the patient."

EPs work collaboratively with their clients to create tailored programs that are safe, efficient and achievable: the EP looks at the patient's clinical data and medication list and takes into account any side effects that could hamper them in their fitness routine. For instance, some antidepressants can cause difficulty balancing, which could increase the risk of falls.

Sessions generally start with "health behaviour change counselling", which looks at everything from motivation, intervention, to decision-balance strategies and to goal setting, Tzar says. And before a program is developed, the EP assesses the client's physical activity levels.

Because most people with chronic health problems aren't comfortable in gyms or can't afford the time to get there, EPs usually create programs that can be done at home. Fall prevention programs for people with balance problems or osteoporosis use chairs or other furniture for the patient to balance against. Heart rate monitors and pedometers are used to monitor cardiovascular exercise, such as walking. And weights are often replaced by portable rubber exercise bands or tubing that provide resistance when looped around the body and stretched. Depending where the band or tube is positioned, any muscle group can be strengthened; it can be used for anything from bicep curls to leg extensions.

The idea is to create a program targeted directly for the individual. "There's an optimal exercise prescription for each different condition - for example, hypertension responds better to low to moderate cardiovascular exercise, whereas diabetes

responds better to higher intensity resistance training," Tzar says.

"It's hard enough to get people with chronic disease to start exercising - so what we're trying to do is help them do things as efficiently as possible so they're getting results, because one of the major issues with exercise is compliance." It seems to be working.

A Medical Journal of Australia study found adults over 60 who had been given individualised advice reported increased participation in exercise after 12 months compared to those who weren't given advice.

And in another study documented in the Journal of Complementary Medicine, elderly patients in Brisbane general practices who saw EPs achieved a 30 per cent better rate of maintenance in physical activities compared to those under the care of the GPs alone.

Last year the first of three trials in newly diagnosed diabetics at the University of Wollongong showed that exercise could be used to control blood sugar levels, improve cardiovascular parameters, increase strength and condition and improve mood.

"Some participants were able to reduce the medical doses of insulin they took, and some have gone off it completely. There were statistically significant reductions in systolic and diastolic blood pressure and HbA1c," says Owen Curtis, director of the university's exercise science program. Over the 11-week trials improvements were also found in girth measurements, overall fitness and wellbeing.

.....Source:Au. Assn of Exercise and Sports Scientists



HEART FAILURE PATIENTS HAVE IMPAIRED COOLING RESPONSE, UT SOUTHWESTERN RESEARCHERS FIND

Reduced blood flow to the skin's surface may be a key cause of heat-related illnesses in patients with congestive heart failure, UT Southwestern Medical Center researchers have found.

The first study to investigate how heat affects people with heart failure shows that one of two ways the body can cool itself is not as effective in those with congestive heart failure relative to healthy individuals. The results, published in today's issue of the journal *Circulation*, emphasize the need for people with heart failure to take special care when the weather is hot, said Dr. Benjamin Levine, professor of internal medicine at UT Southwestern Medical Center and one of the study's two senior authors.

"We wondered whether either sweating or skin/blood responses would be impaired in heart failure patients," said Dr. Craig Crandall, associate professor of internal medicine at UT Southwestern and the other senior author of the study. "We found that for the same level of internal temperature, the heart failure patient does not dilate blood vessels of the skin as much."

He and his colleagues discovered no difference in sweating responses among study participants with heart failure or

healthy subjects. However, the skin/blood flow response in those with heart failure was significantly impaired, by as much as 50 percent when compared to the control group.

"The purpose of this study was to find out why patients with heart disease and heart failure are at great risk for having complications when the weather gets hot," said Dr. Levine, director of the Institute for Exercise and Environmental Medicine, a collaboration between UT Southwestern and Presbyterian Hospital of Dallas. "We saw this in particular in the heat wave that hit Chicago in 1995. Of the reported deaths, a large number had a prior heart condition. We wondered why."

The study included 28 participants between the ages of 47 and 55 -- half with congestive heart failure and half with healthy hearts. For testing, all were put into tube-lines suits and the temperature of the water perfusing the suits was elevated, resulting in increases in skin and internal temperatures. Researchers then studied skin-blood flow and sweating, the two main mechanisms for the body to maintain temperature control.

Increased blood flow to skin works as a kind of radiator for the body. When your heart pumps more blood to the skin's surface, it is drawing out the heat. A healthy person may have to pump three times as much blood as normal if the outside temperature is hot.

Study participants' heat-stress responses were obtained during resting conditions only, not body heat generated through exercise. Blood pressure, heart rate, forearm skin blood flow and sweat rate were collected while 93.2-degree Fahrenheit water perfused through the suit. After six minutes, whole-body heating began by elevating the skin temperature to 100.4 F, a temperature high enough to cause sweating and elevated blood flow to the skin.

"If a person doesn't have enough pump function to get the blood flowing, they're going to have difficulty controlling their body temperature," Dr. Levine said. "Heart failure itself is the inability to pump enough blood to meet the demands of the body -- it usually happens in patients who have had a heart attack or other diseases that have compromised the heart muscle."

Dr. Crandall added that physicians have long known anecdotally that people with heart failure are more susceptible to heat-related illnesses. The mechanism for this, however, was not known.

"Since so many variables could impact the level of heat stress such as wind and humidity, we don't have a set an environmental temperature threshold to give to patients with heart failure," Dr. Crandall said. "What we can say is that they should be more aware of the heat and, if they begin to feel overheated, they should get into an air-conditioned environment."

.....Source: UT Southwestern Medical Center



WE'RE ALL LIKELY TO GET FAT

So you've kept a fairly trim physique into middle age. Don't get smug. A new study suggests that you too may

develop a paunch or worse in coming years.

Since 1948, researchers have been studying heart health and related factors in a large group of people—and their descendants—living in Framingham, Mass. The current study analyzed 3 decades of data that had been collected on some 4,000 men and women beginning in 1971. When the study began, all participants had been between the ages of 30 and 60. Researchers computed body-mass index (BMI)—essentially how slim or heavy an individual was—for each person, as surveyed every 4 years. In the Oct. 4 *Annals of Internal Medicine*, Ramachandran S. Vasan and his colleagues with the Framingham Heart Study offer up some disturbing data.

Between 17 and 34 percent of the women, depending on their age, and about half of the men were already overweight when the study commenced. Over the next 30 years, most of the other participants gained considerable heft, as well. By the end, more than 75 percent of women and 90 percent of men were at least overweight. Roughly half were heavy enough to qualify as obese.

For perspective, a 5-foot, 2-inch woman would have to weigh at least 136 pounds to qualify as overweight, and a 5-foot, 10-inch man would have to top the scales at a minimum of 174 pounds. These two people would be classified as obese if she weighed at least 164 pounds and he weighed 209 pounds or more. Those are the figures that put both members of this couple at a BMI of 30. You can find your BMI, according to your height and weight, at http://www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl.htm. Study participants who were in their early 30s or 40s when the research began faced the greatest risk of gaining weight: 90 percent of them ended up at least overweight.

The rates of being overweight and obese among people in this study are higher than those reported in earlier research, Vasan notes. However, he's not surprised. "Previous studies have been cross-sectional," he says, "which means they took a snapshot of the community at one point in time to tell us what proportion of people was overweight or obese." Here, the researchers summed the data from a host of snapshots to uncover the probability that a participant might eventually become at least overweight. The really troubling finding, this cardiologist says, is that "if you reach middle age and have a normal BMI, you still don't escape the possibility that you may become overweight or obese." The study was not designed to probe what factors most contributed to chronic weight gain—such as overeating or exercising too little. "That's a very important question for future research," Vasan says.

As it is, the health implications of the new findings are enormous, he notes, because hosts of studies have shown that being overweight increases an individual's risk not only of heart disease, but also of diabetes, cancer, stroke, osteoarthritis, gallbladder disease, and breathing problems such as asthma and sleep apnea.

Data on one federal Web site offer clues to why middle age and elderly people may be putting on extra pounds. It shows the inflationary creep in food portions over the past 2 decades. For instance, 3-inch bagels have given way to 6-inch

ones typically containing 350 calories each. Fast-food cheeseburgers used to provide 333 calories each, but a typical offering today has 590 calories. And a plate of spaghetti and meatballs at most restaurants now delivers more than twice the 500 calories typical of portions served in the mid-1980s. This portion distortion is insidious: Every extra 10 calories consumed per day—and not burned up in exercise or work—will add another pound of flesh or fat by the end of a year.

Over the past decade, people have been dining out with increasing frequency. Last year, U.S. restaurants served up more than 70 billion meals and snacks. With people eating out more than ever, the supersizing of restaurant-meal portions risks contributing substantially to the supersizing of our waistlines—and our health risks.

.....Source: Science News Online

SLEEP COULD HELP WEIGHT LOSS: STUDY

If you want to lose fat, getting the right amount of sleep each night may be just as crucial to shedding excess pounds as diet and regular exercise. Research presented at a Canadian conference on obesity this week in Vancouver shows a strong link between lack of sleep and increased fat, as well as an increased risk of several life-threatening diseases. The findings, suggested researchers, will lead to sleep being added to treatment regimes for obesity, diabetes and other ailments. The research reveals that body-chemical changes caused by lack of sleep lead to weight gain, and that disruption of normal sleep patterns can destroy the body's ability to regulate appetite.

In modern societies people are sleeping nearly two hours less each night than they did 40 years ago, said Esra Tasali of the University of Chicago. To find out if there is a link between soaring obesity rates in the industrialised world and a lack of sleep, researchers in Chicago studied metabolic changes in healthy young adults.

The adults were divided into three groups, one group had their daily sleep restricted to four hours, the second group was allowed a normal eight hours while the third group was granted an extended sleep period of 12 hours. The sleep-deprived adults quickly experienced cravings for high-calorie sweets, while their metabolisms resembled that of people with diabetes. There was an increased glucose tolerance after six days of just four hours in bed, Mr Tasali told researchers at the annual meeting of NAASO, The Obesity Society.

Separate research presented here found that a lack of sleep can also contribute to several life-threatening diseases. James Gangwisch and Steven Heymsfield of New York analysed a US government National Health and Nutrition Examination Survey seeking links between lack of sleep and hypertension, diabetes and heart attack. The study, they concluded, showed that sleep deprivation was associated with significantly increased risks to such conditions.

Other researchers, who studied sleep patterns and obesity rates among 323 men and 417 women in the Canadian

province of Quebec, showed that people who get the least sleep have the most body fat. The study, which examined body fat as well as the levels of the hormone leptin, found that people who slept seven to eight hours were the most healthy, compared to those who received less or too much sleep. The findings suggest that the optimum amount of sleep is 7.7 hours each night, said Jean-Philippe Chaput who worked on the Quebec study. He said while much more research is needed before medical treatment plans can be adopted, ensuring that people get adequate sleep will soon become a standard part of the treatment for obesity. It is possible that in a couple of years, sleep will be added to diet and physical activity in tackling weight loss, Mr Chaput said.

.....Source: The Australian

INFLAMMATION-FIGHTING FAT

Arthritis-ameliorating cheese, anyone? Asthma-moderating yogurt? How about a scoop of lupus-fighting ice cream? Although such foods don't yet exist, they might one day. Data from a new study finds that an unusual fatty acid, a type of dairy fat, can modulate the injurious, runaway inflammation that underlies these and many other diseases.

The agent is a variant of the essential nutrient linoleic acid. It's one of a pair of agents, known as conjugated linoleic acids (CLAs), that occur as trace constituents of animal fats. Both possess novel — although different — pharmacologic attributes. However, their concentrations in milk and other dairy goods are too low to make a recognizable difference.

At elevated doses, such as those delivered by over-the-counter food supplements available in health-food stores, each CLA appears to have potential for fighting disease in people and other animals.

For instance, a few years back, Mark E. Cook and his colleagues at the University of Wisconsin–Madison found that administering a mix of the two linoleic acid variants could prevent a common wasting syndrome in farm and laboratory animals that traced to uncontrolled inflammation. Moreover, the CLA supplementation dampened the injurious inflammation — an inappropriate immune attack — without impairing the animals' ability to produce antibodies or launch a healthy immune response to infection.

The unusual fats ratcheted down the body's production of an enzyme—COX-2—that serves as an inflammation trigger. COX-2 has been indicted as a player in many chronic diseases, from cancer and autoimmune disease to arthritis. Indeed, several drugs that target COX-2 were developed to treat the pain associated with inflamed joints.

In their new study, Cook, Guangming Li, and their colleagues traced the COX-2 effect, in mice, to just one of the two CLAs. Moreover, the new study indicates that this particular CLA fights inflammation in several ways at once. The new evidence proves, says Cook, that the dietary ingredient "is pretty amazing."

A good trans fat

Linoleic acid is a molecule with a backbone of 18 carbon atoms, most of them linked by single bonds. At two sites, those

carbons are linked by more-rigid double bonds. If chemical reactions shift those double bonds so that they are separated by only one single bond, the molecule is described as having conjugated double bonds. And that's what CLAs are—a linoleic molecule whose double bonds are now conjugated.

Fats will bend at the site of a double bond. Ordinarily, linoleic's two double bonds are both in what chemists refer to as a cis configuration. This means that the carbon backbone takes on somewhat of a U-shape around each bond. In CLAs, however, one of the double bonds instead sports a trans configuration, meaning that the bond induces a slight zigzag in the backbone.

The existence of that trans bond means that CLAs are a type of trans fat. The trans bond in their structure imparts an unusual physical property: It keeps the trans fats hard at room temperature. It's a feature in other trans fats the food industry has capitalized on — transforming vegetable oils into surrogates for butter, lard, and other products rich in saturated fats. Unfortunately, most trans fats also pose the same artery-clogging risks that saturated fats do.

CLAs, however, don't seem to harm people's arteries. To date, the one known as cis-9, trans-11 (c9,t11) has gotten the most attention for its potential to not only prevent certain cancers and atherosclerosis, but also to limit the accumulation of body fat.

Cook's team is now focusing on a different CLA—trans-10, cis-12 (t10,c12). It's this fat that the researchers have found is most responsible for ratcheting down inappropriate inflammation. Although c9,t11 also showed some weak anti-inflammatory action in the team's test-tube studies, it failed to curb inflammation in animals.

The fact that both of these CLAs have demonstrated health benefits in a host of studies over the past 2 decades has won them an exemption from recent government rules requiring that food labels list concentrations of heart-threatening trans fats.

Cox suppression and more

In their new studies, Cook and his colleagues probed how the t10,c12 CLA worked. They found that it modulated the activity of a molecule, NF-kappa-B, that controls parts of the immune response. Ordinarily, NF-kappa-B rests quietly in the liquid part of certain immune system cells. When the immune system is stimulated by any of a range of agents, however, NF-kappa-B races to the cells' nuclei and there activates genes that turn on the production of all sorts of inflammatory agents, among them COX-2.

The more of the CLA administered to animals or immune cells, the more resistant those animals and cells were to producing COX-2 and other inflammatory agents.

Not only did the CLA's impact on NF-kappa-B activity reduce the production of the COX-2 enzyme, but it also dampened the activity of any COX-2 that was made. "This is baffling," Cook told Science News Online, and suggests that CLA has at least two independent roles in tempering COX-2's overstimulation of inflammation.

Studies by other researchers have shown that a cow's diet

can greatly influence her milk's CLA concentrations.

Grass-fed cows tend to produce far more of the c9,t11 form, Cook notes, than do grain-fed animals. In contrast, grain feeding spurs more production of t10,c12 CLA. He now plans to work with animal scientists to investigate how much they can boost the t10,c12 in cow's milk. The goal would be dairy products — from cheese to yogurt — naturally endowed with extra inflammation-fighting attributes. For instance, they might limit inflammatory pain without the side effects of aspirin or other drugs.

It's also possible, Cook notes, to simply fortify foods with extra t10,c12 CLA or pop dietary supplements, already on the market, that include both of the beneficial CLAs.

The Wisconsin team calculates that it might even be possible to get pharmacologically active doses of t10,c12 CLA naturally from a dairy-rich diet today. Doing so assumes, he says, that the CLA's immunological responses will be as potent in people as they have been in lab animals. It would also require eating lots of milk-based foods. How much? Cook's team estimates that based on current CLA concentrations typical of milk, people would have to derive roughly half of their daily fat allotment — perhaps 100 grams — from dairy products. And they can't be skim-milk products, he notes, since the t10,c12 CLA is a fat.

.....Source: Science News, 168: 18



Wild Oats

High in protein and rich in iron and B vitamins, oats are a renowned source of a type of soluble fiber (beta glucan) that helps to lower cholesterol. Oats act almost like nature's broom, literally whisking excess cholesterol out of the system. I could eat oats in a variety of ways throughout the fall and winter seasons, regardless of its many health properties.

In addition to breakfast cereals, there are ways to incorporate oats into your every day meal plan. Add oats as a binder when preparing meat loaves and patties, add 1/4 cup of oats into a favorite pancake batter.

Make your own granola. Melt 1/4 cup low calorie margarine and add 1/4 cup honey. Add in 3 cups rolled oats, 1/2 cup sunflower seeds, 1/2 cup wheat germ, 1 1/2 tsp. cinnamon. Mix well. Spread the granola on a baking sheet and bake at 350 degrees for 15 to 20 minutes, stirring often. Remove the granola from the oven and stir in 1/4 cup raisins if desired. Serving size is 1/3 cup. Use the granola to layer with plain low fat yogurt in a parfait glass for dessert or for a snack.

Use oats as a breading. Mix together 1/2 cup oats, slightly ground with cornflake crumbs and season with garlic powder, basil, salt and pepper. Use to coat chicken breasts, thighs or legs.

For a change from hot oatmeal, why not try a fluffy pancake on occasion. Enjoy these with a smear of unsweetened applesauce instead of syrup.

.....Source: American Diabetes Association





Don't pass gas.

Take it outside. Smoking around others releases a toxic fog of gases like carbon monoxide and hydrogen cyanide. Gases that can be especially harmful to kids and babies whose bodies are still developing. Read on and learn why taking it outside is the right thing to do.

In the U.S. about 50,000 people die each year from second hand smoke related disease

Source: Glantz SA, Parmley WW. Passive Smoking and Heart Disease. JAMA 1995; 273(13) 1047-1053.

In the U.S. 30,000 to 60,000 people die each year from second hand smoke related heart disease

Source: Glantz SA, Parmley WW. Passive Smoking and Heart Disease. JAMA 1995; 273(13) 1047-1053.

In the U.S. 3,000 people die each year from second hand smoke related lung cancer

Source: CDC. Annual Smoking-CDC. Annual Smoking-Attributable Mortality, Years of Potential Life Lost and Economic Costs—United States, 1997-2001. MMWR 2005; 54(25): 625-628.

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