

# EFFORTS

*Emphysema Foundation For Our Right To Survive*



Emphysema Takes Your Breath Away

October 2006

## **NEW STUDY DEMONSTRATES RAPID SPEED OF ONSET WITH BUDESONIDE/FORMOTEROL IN COPD**

New data from a study investigating the onset of action with respect to airway dilatation in budesonide/formoterol (Symbicort®), salmeterol/fluticasone (SeretideT), salbutamol and placebo were announced today at the European Respiratory Society 2006 Annual Congress (ERS)1. The data show that budesonide/formoterol has an onset of action that is similar to that of salbutamol and faster than that of salmeterol/fluticasone in patients with COPD.

"Speed of onset is as important in COPD as it is in asthma, especially in the morning when patients often require a rapid onset of bronchodilatory effect. Rapid symptom relief from a maintenance treatment will most likely also provide improved compliance. Therefore the data presented today is very interesting and adds to our understanding of the role of budesonide/formoterol in treatment of COPD," said Professor Martyn R. Partridge, Faculty of Medicine, Imperial College London.

In the double-blind, double-dummy, placebo-controlled crossover study, 88 patients were randomised to four treatments to receive either single doses of budesonide/formoterol, salmeterol/fluticasone, salbutamol or placebo in order to compare the onset of action in patients with COPD. Treatments were administered via pressurised metered dose inhalers (pMDI)\*. The primary endpoint was an improvement in airway dilatation measured by a change in FEV1 at 5 minutes after inhalation.

The study showed that budesonide/formoterol improved FEV1 to a greater extent than placebo and that the onset of effect with budesonide/formoterol was similar to that seen with reliever therapy salbutamol and faster than salmeterol/fluticasone. Maximal effect on Inspiratory Capacity, regarded as predictor of exercise tolerance, was greater with budesonide/formoterol as compared to salmeterol/fluticasone. Improvement in lung function parameters for all three active treatments was superior to placebo after 180 minutes, but the two combination treatments were better than the SABA alone at maintaining the improvement in FEV1.

"Speed of onset is as important in COPD as it is in asthma, especially in the morning when patients often require a rapid onset of bronchodilatory effect. The findings from the study confirm that rapid onset of action can also be exerted by maintenance therapies in COPD," concluded Martyn R. Partridge.

\* Budesonide/formoterol is licensed for use in COPD patients with an FEV1 < 50% uncontrolled on long-acting

bronchodilators, however this study was performed with a pMDI, a pharmaceutical form which is not yet approved for use in the European Union.



## **BUDESONIDE-FORMOTEROL MORE COST EFFECTIVE THAN SALMETEROL/FLUTICASONE IN SEVERE COPD**

New health economic data presented today at the European Respiratory Society 2006 Annual Congress (ERS) add to a growing body of evidence demonstrating a further benefit of budesonide/formoterol in COPD. An analysis of switching patients from LABA-therapy to ICS/LABA combination therapy showed that when compared with the respective LABA, budesonide/formoterol (Symbicort®) is more cost-effective than salmeterol/fluticasone (Seretide™) in the treatment of severe COPD.

"As COPD is mainly managed in primary care where budgets are constantly under scrutiny, it is important to assess the cost-effectiveness of available treatments. The data presented at ERS are very interesting and give us a clearer picture of the role that budesonide/formoterol can play in the treatment of COPD," said Professor Peter Calverley, Aintree Chest Centre, University of Liverpool, UK.

By using a Markov model of the economic impact of COPD, a computer simulation was performed with 4,000 patients over 1 year to compare the reduction in exacerbations frequency and difference in drug costs for formoterol versus budesonide/formoterol and salmeterol versus salmeterol/fluticasone. The relative cost-effectiveness of budesonide/formoterol and salmeterol/fluticasone was then examined showing that switching patients from formoterol to budesonide/formoterol rather than from salmeterol to salmeterol/fluticasone, results in a saving of SEK 1,276 (Euro 138) per patient in healthcare costs per year. When epidemiological data were applied, total annual savings for the Swedish healthcare system were estimated at SEK 70,180,000 (Euro 7,565,394).

Source: medicalnewstoday.com



**STUDY SHOWS THAT SPIRIVA® PLUS FORADIL® IS MORE EFFECTIVE IN IMPROVING LUNG FUNCTION THAN SEREVENT® PLUS FLOVENT®**  
**- Results of Head-to-Head Study Reinforce the Value of Bronchodilator Treatment in Emphysema and Chronic Bronchitis -**

Study results show that treatment with Spiriva® HandiHaler® (tiotropium bromide inhalation powder) plus Foradil® (formoterol MDI)\* provided greater improvements in key lung-function measures than treatment with Serevent®\*\* (salmeterol MDI) plus Flovent®\*\* (fluticasone propionate MDI) in patients with chronic obstructive pulmonary disease (COPD). These findings were announced at the 15th Annual Congress of the European Respiratory Society. The study is the first prospective trial to evaluate two long-acting bronchodilators taken together versus a bronchodilator plus an inhaled corticosteroid in COPD patients. In treating COPD patients, current guidelines from the Global Initiative for Chronic Obstructive Lung Disease (GOLD) recommend long-acting bronchodilator combinations prior to those with a bronchodilator and an inhaled corticosteroid. This study reinforces guideline recommendations to maximize bronchodilation before adding an inhaled corticosteroid.

SPIRIVA, Foradil and Serevent belong to two classes of long-acting inhaled bronchodilators - anticholinergics (SPIRIVA) and beta-agonists (Foradil and Serevent) - both of which are indicated for the long-term maintenance treatment of COPD. Flovent is an inhaled corticosteroid. All three drug classes are used in different combinations to help enhance lung function, enabling COPD patients to breathe better. SPIRIVA is a once-daily, long-acting bronchodilator with no steroid components. It is indicated for the long-term maintenance treatment of bronchospasm associated with COPD, which includes chronic bronchitis and emphysema. "These results point to the potential of the SPIRIVA and Foradil combination to effectively manage patients with moderate-to-severe COPD," said Dr. Donald Tashkin, Professor of Medicine, David Geffen School of Medicine at UCLA. "Maximizing lung function is the key to helping COPD patients breathe easier; consequently, research is ongoing to evaluate treatment combinations that can optimize effectiveness. Inhaled bronchodilators are a cornerstone of COPD treatment, and these study findings reinforce the value of using them in combination to effectively manage patients with this condition."

Results from this six-week, double-blind, comparative trial of 592 patients showed that patients treated with SPIRIVA in combination with Foradil experienced greater improvements in key lung-function measures than those treated with Serevent and Flovent. More specifically, over the course of the six-week study period, the average Forced Expiratory Volume (FEV1 -- forced expiratory volume in one second) over 12 hours was greater among patients treated with Spiriva and Foradil than those who received Serevent and Flovent (1.641L vs. 1.563L,  $p=0.0006$ ).<sup>6</sup> Further, the peak FEV1 response was 1.775L in the Spiriva and Foradil arm<sup>7</sup> vs. 1.672L in the Serevent and Flovent arm ( $p<0.0001$ ). Also, patients receiving SPIRIVA and Foradil showed greater Forced Vital Capacity (FVC) response and peak FVC measurements over the 12-hour period (an increase of 173mL) and throughout the study period (an increase of 79mL) respectively. In both arms, pre-dose FEV1

improved after eight weeks of treatment, but the difference between the two groups was not statistically significant.

"Improvements in forced expiratory volume and forced vital capacity are significant because they illustrate the therapeutic value of the combination of SPIRIVA and Foradil in helping patients get air in and out of their lungs so they may breathe easier," noted Dr. Tashkin. In this trial, both regimens were well tolerated. The most commonly reported adverse events included COPD exacerbation, pharyngitis and cough.

This study, sponsored by Boehringer Ingelheim and Pfizer, Inc evaluated patients with moderate COPD as outlined by the GOLD criteria. Patients enrolled in this trial were randomized to receive either Spiriva 18 g once daily plus Foradil 12 g twice daily ( $n=297$ ) or Serevent 50 g twice daily plus Flovent 500 g twice daily ( $n=295$ ). To achieve blinding, patients in this study inhaled four different devices in the morning and three in the evening. The co-primary endpoints were average FEV1 over a 12-hour period and peak FEV1 measured at the end of six weeks of treatment. Source: BI Press Release

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## NEW INHALANT DEVICE FROM BI

Boehringer-Ingelheim has developed a novel device to deliver respiratory medicines, a step that it hopes will represent a significant advancement upon traditional inhaler technologies. The Respimat is a new device that delivers medication in a soft and slow-moving mist with a high fine particle fraction, allowing the active compound to penetrate deep into the lungs. The mist formulation also decreases deposition in the mouth and throat compared to traditional MDI devices, resulting in fewer oropharyngeal side effects.

The Respimat is currently in development for BI's most important respiratory product Spiriva (tiotropium bromide). The Respimat technology is currently used in BI's Berodual (ipratropium bromide/fenoterol hydrobromide) which was launched in January 2004 on the German market. A 12 week study evaluating the satisfaction of patients using the Berodual Respimat concluded that most patients (74%) rated the treatment with the Respimat as better or much better than their previous Berodual inhaler.

This real-life validation of the new technology provides a good platform from which to reformulate BI's OPD blockbuster Spiriva in the Respimat inhaler. Phase III trials for Spiriva in this device were successfully completed and BI is currently preparing the filing documents, according to the company's 2005 Annual Report.

Spiriva's only disadvantage is its current inhaler device - the Handihaler - which is said to be too complicated, especially for elderly patients. Several companies have once-daily LAMAs in their pipeline, but none is expected to be launched before 2011. Although that year will mark the end to Spiriva's monopoly, BI appears to have chosen an excellent defence strategy. A reformulation in the novel Respimat will differentiate Spiriva from its competitors and will be key to extend its success.

Source: [www.pharmaceutical-business-review.com](http://www.pharmaceutical-business-review.com)



## ENVIRONMENTAL TOXINS MAY CAUSE BODY'S DEFENSES TO WORSEN LUNG DISEASE

The University of Cincinnati (UC) has received \$2.4 million to study whether environmental toxicants can stimulate the body's natural defense system to cause additional damage in people with chronic lung diseases. Michael Borchers, PhD, believes long-term exposure to certain environmental toxicants may activate a specific receptor--known as NKG2D--in lung cells that causes the immune system to attack stressed (damaged) lung tissue. "When tissue is exposed to a pathogen (disease-causing agent), the immune system immediately wants to destroy the damaged cells so healthy tissue can take over," explains Borchers, assistant research professor of environment health at UC and principal investigator for the study. "But when the lungs experience chronic, low-level damage, we believe at some point that damage exceeds the body's natural ability to repair tissue," he adds. "And through the destruction of lung tissue, it may actually start contributing to chronic lung disease instead of protecting against it."

UC scientists say when this happens repeatedly--such as through environmental tobacco or workplace exposures--it may cause the immune system to attack the damaged tissue in the same way it would if the tissue were infected with bacteria or a virus. "The same signaling pathway necessary to protect the body from disease may actually have the opposite effect, causing harm in the lung when exacerbated by persistent exposure to environmental contaminants," Borchers explains. By blocking the NKG2D receptor, Borchers believes he can stop the immune system response and minimize damage to delicate tissue in the lung.

Lymphocytes, the white blood cells responsible for targeting and fighting off infection in the body, continually survey the epithelial cells lining the lungs to identify and destroy diseased cells. If the lymphocyte recognizes the tissue, Borchers explains, it simply continues its survey for problems. But if the cell receives a signal that the tissue is infected, it will automatically destroy it to protect the body from disease. "The immune system thinks it's eradicating disease from the body when it destroys cells that have been damaged by environmental toxins, but in chronic lung disease that destruction may be doing more harm than good," he says.

Chronic pulmonary diseases cause irreversible damage and inflammation in the lungs that lead to scarring and narrowing of the airways. The most common of these diseases are obstructive pulmonary disease, chronic bronchitis and emphysema. When a large amount of tissue is destroyed, Borchers says, it can cause irreparable damage to the elasticity of the lung and lead to additional health problems. Using an animal model, Borchers will expose surface cells in the lung to two environmental toxins--the bacteria *Pseudomonas aeruginosa*, a major cause of in-hospital infections, and acrolein, an air pollutant found in tobacco smoke, smog and diesel exhaust--to determine how cells respond to infection and toxicant-induced cell damage. "By looking at how the cells react to these stimuli, we hope to gain insight into what

triggers and mediates the immune system response," Borchers says.

This will help scientists determine which lymphocytes are important for regulating damage in the lungs, so they can develop ways to "tweak" the immune system and prevent the lymphocytes from causing additional damage to already-injured tissue.

Borchers says understanding these pathways could play an important role in future drug treatments for patients with chronic obstructive pulmonary disease and the basic scientific findings may also have applications in asthma and cystic fibrosis as well as other chronic lung diseases.

The overall goal of the study is to expand existing scientific knowledge of how epithelial cells in the lungs communicate with the immune system in response to environmental and occupational pollutants. "The challenge with pulmonary diseases is that there are no cures," says Borchers. "We can manage the symptoms of the disease, but we can't cure it because destruction of the airways is irreversible. "We need a better understanding of the causes and pathways that lead to pulmonary disease if we are to improve the outcome for patients with chronic disease," he adds.

Source: [medicalnewstoday.com](http://medicalnewstoday.com)



## EFFECTIVE TEST TO DETERMINE TREATMENT FOR CHRONIC COUGH FOUND BY MAYO CLINIC

Mayo Clinic researchers have found that an asthma diagnostic test, the exhaled nitric oxide test, is an inexpensive, quick and easy way to determine whether inhaled corticosteroids will relieve a patient's chronic cough. Details will be presented in an abstract at the European Respiratory Society Meeting in Munich, Germany, Sept. 6. "We're thinking this could be a significant development in the field of chronic cough," says Peter Hahn, M.D., Mayo Clinic pulmonologist and lead study investigator. "It could drastically change what we do for patients with chronic cough and also the guidelines for diagnosis and treatment of chronic cough. This very accurate -- but rather underused -- test could be used up front for all patients complaining of chronic cough, saving significant time and expense in other testing. It helps us get to the treatment and bring relief to the patient in the least invasive, fastest way possible."

An estimated 23 million Americans see their physicians each year for cough; it is the third most common reason a patient seeks a physician visit, according to the Mayo Clinic researchers. Chronic cough is variably defined as three to eight weeks of prolonged cough. Most patients see a physician because the cough disrupts their daily lives, says Dr. Hahn. The three major diagnoses that can cause chronic cough are: upper airway cough syndrome (also known as postnasal drip syndrome), asthma, and gastroesophageal reflux. Another diagnosis that affects fewer chronic coughers is non-asthmatic eosinophilic bronchitis.

The exhaled nitric oxide test measures inflammation in the lungs' bronchial tubes. The patient breathes into an analyzer four or five times over the course of 10 minutes. Abnormal scores indicate that the patient has asthma or possibly non-asthmatic eosinophilic bronchitis. Both can be effectively treated with

inhaled corticosteroids. In these patients, inflammation irritates the airway and prompts coughing. Corticosteroids help reduce the inflammation, alleviating the cough. This test is much easier for patients and predicts response to corticosteroid treatment better than a commonly used test, the methacholine challenge, according to Dr. Hahn.

This study was conducted via chart review of consecutive patients evaluated at Mayo Clinic for chronic cough using both exhaled nitric oxide and methacholine challenge testing between December 2004 and November 2005. During the study interval, 114 patients underwent methacholine challenge testing and measurement of exhaled nitric oxide as part of a chronic cough evaluation. Sixty-four of these were either started on inhaled corticosteroids or had their current dose increased to treat chronic cough. Forty-one patients had elevated exhaled nitric oxide levels. Of these, 36 (88 percent) had significant improvement in their chronic cough. Twenty-three patients with exhaled nitric oxide in the normal range also were started on inhaled corticosteroids, and only two had cough improvement. In contrast, 25 of 39 (64 percent) patients with a positive methacholine challenge test responded to inhaled corticosteroids, but up to 52 percent with a negative methacholine challenge test still had significant improvement of their chronic cough with inhaled corticosteroid therapy. Patients had documented follow-up ranging from four weeks to 12 months.

Study results suggest that measurement of exhaled nitric oxide accurately predicts patients' response to inhaled corticosteroids for chronic cough, according to the Mayo Clinic researchers. "Patients with a positive, or abnormal, exhaled nitric oxide test had a strong likelihood of response to inhaled corticosteroids, whereas a negative, or normal, exhaled nitric oxide test virtually excluded response to the medication," says Dr. Hahn. "The accuracy of the exhaled nitric oxide test in predicting response to inhaled corticosteroids for chronic cough appears to be better than with methacholine challenge testing. This may potentially have a significant impact on how patients with chronic cough are evaluated and treated."

The next step needed in testing for chronic cough is a prospective study comparing the utility of the methacholine challenge versus the exhaled nitric oxide test, says Dr. Hahn.

Source: [medicalnewstoday.com](http://medicalnewstoday.com)



## **GPs SHOW IMPROVED CONFIDENCE IN MANAGING COPD PATIENTS, UK**

Over 75% of GPs are more confident in managing COPD now than they were two years ago, potentially due to NICE guidelines and the QOF. However, disappointingly 40% only feel they can stabilise rather than improve the health of their patient, according to a survey of 400 GPs throughout the UK. The research commissioned by GlaxoSmithKline and conducted by GfK HealthCare, also showed that over two-fifths (44%) of GPs would be most motivated to take an increased interest in the management of COPD if they could reduce exacerbations. Nearly a third (32%) said an evidence

base for improving patient survival would be the key motivator for them to get more involved in the management of the disease. Surprisingly, only 9% of GPs surveyed flagged an increased allocation of points for COPD in the QOF as the most motivating reason to take a greater interest in the disease. These findings come on the eve of Europe's largest respiratory gathering - the annual meeting of the European Respiratory Society in Munich.

"It's great that GPs are growing in confidence and the recent announcement of the NSF for COPD will undoubtedly help create further interest in the disease", commented David Price, Professor of Primary Care Respiratory Medicine, University of Aberdeen. "The next step is for primary care to raise its treatment expectations as there is growing evidence to show that we can really improve the quality of our patients' lives."

The rate of mortality due to respiratory disease in the UK is almost double the EU average with COPD currently ranked the country's fourth biggest killer disease, claiming approximately 24,500 lives annually. In 2003, there were over 106,000 emergency hospital admissions for COPD which cost the NHS approximately £253m. Professor Price continued: "With the roll-out of practice-based commissioning, primary care is set to play an increased part in the management of COPD and it is vital for GPs to recognise and embrace this challenge. Hopefully studies such as TORCH, the first trial to look at improving survival in COPD, will help motivate GPs to take a greater interest in the management of this killer disease."

The survey of 400 GPs around the UK was conducted by GfK HealthCare and found that:

- 79% felt more confident in managing COPD than they were two years ago.
- 75% agreed that NICE guidelines have helped provide clear guidance on managing patients.
- 72% flagged the inclusion of COPD in the Quality Outcomes Framework as having increased their focus on the disease.
- 55% generally felt they could improve or significantly improve their COPD patients' health, but 40% felt they could only stabilise health status.
- 44% highlighted the opportunity to reduce the number of exacerbations as their key motivator to take a greater interest in management of the disease.
- 32% cited an evidence base for improving survival as the most motivating factor to increase their interest in the management of COPD.

In March 2006, the Health Secretary, Patricia Hewitt published new figures from the NHS Institute for Innovation and Improvement to illustrate how the NHS could improve services, reduce unnecessary emergency admissions and improve value for money. COPD was listed as the number one 'ambulatory care sensitive' condition.

In his 2004 annual report, *On the State of the Public Health* (published 19 July 2005), The Chief Medical Officer emphasised the burden of COPD and called for a National Service Framework for COPD.

GfK HealthCare in London is a division of GfK NOP Ltd that brings together the Healthcare division of the former Martin Hamblin and the former NOP World Health Europe.

Source: medicalnewstoday.com



## **INDACATEROL SHOWS SAFETY AND CONTINUED BENEFITS IN ONCE-DAILY REGIMEN FOR COPD**

An investigative beta<sub>2</sub>-agonist appears to be well tolerated and to provide continued efficacy when used on a once-daily basis in patients with chronic obstructive pulmonary disease (COPD), according to a 28-day study presented here at the 16th annual meeting of the European Respiratory Society (ERS).

"This is the first once-daily beta<sub>2</sub>-agonist that has been developed," said principal investigator William H. Yang, MD, executive director, Allergy & Asthma Research Centre, Ottawa, Canada. "It's early in its development, but it shows the potential to simplify treatment for both asthma and chronic obstructive pulmonary disease [COPD]," Dr. Yang said in an interview.

Systemic absorption of inhaled beta<sub>2</sub>-agonists is known to cause a variety of adverse effects, such as tachycardia, electrocardiogram abnormalities, hypokalemia and hyperglycemia, headache and skeletal muscle tremor. To assess the potential for such absorption of indacaterol, Dr. Yang and colleagues in Canada and the United Kingdom designed a 28-day study that assessed the safety and tolerability of inhaled indacaterol at 400 mcg and 800 mcg once daily.

The researchers randomized 144 patients with persistent asthma into a double-blind, placebo-controlled, parallel-group study. The investigators conducted safety assessments before and after dosing on days 1, 14 and 28, with particular attention paid to the known key adverse effects associated with inhaled beta<sub>2</sub>-agonists.

Eligibility criteria were age 12 to 65 years, forced expiratory volume in 1 second (FEV<sub>1</sub>) at least 60% of predicted value, use of inhaled beclomethasone or equivalent inhaled corticosteroid at a dose of at least 1,600 mcg. Of the 144 patients enrolled, 135 (94%) completed the study.

Almost all adverse events (98%) during the study were mild to moderate in severity, and consisted primarily of cough. Five patients had serious adverse events, 4 of which led to withdrawal from the study. These consisted of bronchospasm. One patient had a severe adverse event, an ectopic pregnancy, which was not considered to be treatment-related. Two further patients withdrew due to adverse events that were not serious, which consisted of moderate cough. No serious adverse events or withdrawals were related to class effects typically seen with beta<sub>2</sub>-agonist drugs. The investigators observed no dose-response relationship between indacaterol and the incidence of adverse events, which occurred at a rate of 41% in the 400 mcg group, 37% in the 800 mcg group, and 39% in the placebo group. Few adverse events considered beta<sub>2</sub>-agonist class effects occurred.

The investigators observed no clinically meaningful differences between the indacaterol and placebo groups in mean serum potassium, glucose, QTc interval, pulse rate or blood pressure. They did, however, detect significant increases in FEV<sub>1</sub> after dosing on all days for patients in the treatment groups compared to those on placebo (P < .05).

The differences between the indacaterol and placebo groups 30 minutes after dosing ranged from 210 to 250mL. The predose FEV<sub>1</sub> on days 14 and 28 for both indacaterol doses approximately 24 hours after the previous dose were significantly greater compared with placebo, with differences ranging from 150 to 230 mL (P < .05).

These findings show that indacaterol's bronchodilator effects persist for 24 hours, Dr. Yang said.

The researchers concluded that indacaterol has a good overall safety profile and is well tolerated at both doses, with evidence of indicating 24-hour bronchodilator efficacy.

Source: P\SL Consulting Group Inc.



## **HOPE OFFERED TO PATIENTS WITH LUNG AND JOINT DISEASE BY KEY STUDY**

People who suffer from inflammatory conditions such as chronic diseases of the lung, joints and other organs could benefit from a new discovery by scientists at the University of Edinburgh. A new study in Nature Medicine journal shows that certain drugs, already being tested as cancer treatments, can dramatically reduce tissue inflammation.

The researchers have found that certain non-biological drugs, known as CDK inhibitors, can knock out the inflammatory cells which cause the tissue damage and scarring that leads to organ failure and joint pain. These drugs trigger a process of cell 'suicide' called apoptosis in which the inflammatory cells, called neutrophils, destroy themselves before being removed by scavenger cells, called macrophages.

The Edinburgh scientists have spent years devising ways of inducing apoptosis in specific inflammatory cells while, in parallel, driving macrophages to clear the resultant apoptotic cells more rapidly. Now they have shown that CDK inhibitors, like Roscovitine - which is already being tested in human cancer - are capable of inducing neutrophil apoptosis 'in the test-tube'. Significantly, laboratory tests now suggest that they also reduce inflammation in models of rheumatoid arthritis and a devastating, currently untreatable, lung disease called fibrosing alveolitis.

Professor Chris Haslett, Head of the Queen's Medical Research Institute at the University of Edinburgh, expects the study to lead to trials of these drugs in human inflammatory diseases. Professors Adriano Rossi and Haslett, who have led this new study with other colleagues from the QMRI, said: "This study offers new hope for patients with severe inflammatory diseases. Specific treatment for such conditions is poor, and the use of steroids is fraught with potential difficulties. We have adopted a different strategy by using non-biological treatments, but this study needs urgently to be translated into trials and we

are now seeking major funding to research further how these drugs work." Source: medicalnewstoday.com



## ENERGY MANAGEMENT - TIPS FROM NATIONAL JEWISH HOSPITAL

While we don't advocate dirty houses, a quote we found says: "A clean house is the sign of a misspent life." Maybe that will help ease any guilty feelings you may have about not keeping up things as you used to do!

Is it frustrating when you can't do things that are important to you, or that you want to do? It's good for you to be as active as possible, and you can stay active if you use good pacing techniques. Also, when you learn to maintain a comfortable breathing pattern while you work, you'll be able to do more. This might mean stopping often and taking some deep, diaphragmatic breaths in order to minimize breathlessness.

When you work more efficiently, you reduce the strain on your heart and cardiovascular system; minimize fatigue, shortness of breath, and back pain; prevent injury, and make your energy go a long way. Here are some techniques you can apply to any everyday task including self-care, household chores, hobbies, and work.

What are some techniques to help me work more efficiently?

**Pace yourself:** A moderate pace gets us further. Take your time with tasks. Give yourself adequate time to complete a task to avoid rushing. Take frequent, short rest breaks before you feel really tired.

**Make tasks easier:** Most of us waste an amazing amount of energy every day. Finding easier ways to do things is not lazy - it's smart. You are your own manager.

**Space your activities:** Break some big jobs into smaller steps. Put restful activities between more strenuous ones. Think of energy as money in the bank: If you continually overspend, you will always be running in the red. If you under-spend, you will not be making the best use of your resources.

**Maintain a comfortable breathing pattern while you work:** You may need to stop during a strenuous activity and take some deep diaphragmatic breaths in order to decrease shortness of breath. Slow, deep breathing is 'relaxing and helps slow and smooth out body motions. Taking short, jerky breaths or holding the breath is a common practice when using the arms or when in a hurry. Slow, deep breathing uses more of your lungs and gets more oxygen into your blood. In addition, use adequate ventilation. Heavy cooking odors, perfumes, or steam may make breathing more difficult. Relax! Nervous tension and anxiety use energy, cause muscle tension, headache, and backache, and put more stress on your heart. Minimize anxiety by planning ahead, leaving enough time to complete tasks and rest afterwards. Only plan to do each day what you can realistically accomplish. Do several different types of activities in one day (not just housework!). Schedule time for primping, listening to music, hobbies,

visiting, and getting outside. Learn to limit visits when you get tired easily. **Learn to say, "NO!"**

**Use planned rest periods:** When you know a task will take a long time or is usually fatiguing, plan and take breaks. If this is difficult for you to do, create a "break center" with a comfortable chair and some reading or handwork so you don't feel you are wasting your time.

**Easy flow of work :** Working on an assembly line basis accomplishes more in less time and with less effort.

**For Example:**

During meal preparation, take all of the necessary items from the refrigerator by cart to the sink area, do all of the preparation there, move on to the stove, and when the cooking is completed, proceed to the table.

During dish washing, the dishes to be washed are placed at the right, the hot, soapy water middle right, the hot rinsing water middle left, and the rack for draining on the far left. Eliminate drying.

**Eliminate unnecessary tasks:** Eliminate extra trips by planning ahead and assembling supplies. Use throw-aways such as paper plates when you want to save washing time. Let dishes dry in the rack. Get rid of dust-collecting clutter. Lightly sponge down the tub or shower each time you bathe. Keep a sponge by wash basins and lightly wipe after each use. Straighten out the covers before you get out of bed to make bed making easier. Invent your own shortcuts!

**Avoid strenuous arm motion:** Rapid, jerky arm motions cause shortness of breath and fatigue and puts an extra strain on your heart. Breathing is difficult during this kind of activity, and most people take short, shallow breaths or tend to hold their breath when they are using their arms. Working with the arms overhead also causes extra strain. Keep arm motions smooth and flowing. Also minimize holding by hands. Work on a non-slip counter surface or use an "octopus" suction cup holder to keep bowls or other utensils from moving around. Use an electric mixer with a stand instead of mixing by hand. When slicing round vegetables, cut a small piece off the bottom so they will not roll.

**Sit to work:** For tasks taking a long time, use a stool, or chair to minimize fatigue. Standing for longer periods of time is usually tiring.

**For Example:**

If possible, the ironing board should be adjustable so that ironing can be done at proper sitting or standing heights. The adjustable ironing board can also be used for other tasks.

Sit during vegetable or other food preparation that will take much time. Some things can be cut up at one sitting and frozen for future use.

Avoid lifting and use wheels to transport: It is desirable to have utility cart on wheels to use in most household activities. For Example:

It is possible to place all cleaning supplies on the cart and proceed from room to room, thus eliminating backtracking.

It is also possible to place laundry on the cart and distribute from room to room in one trip.

**Adjust working heights:** Eliminate excessive or unnecessary bending, stooping, and reaching from household activities because they are fatiguing. Improper working height causes back

strain and fatigue. Poor posture also restricts breathing. Best working height for a tabletop is 2" below your elbow. Raising the height of the bed makes bed making easier. Table, bed, or chair legs can be extended with wooden blocks. Extenders that bolt on can be found in some catalogs.

#### **For Example:**

A dustpan with a long handle eliminates bending.

One should be able to rest both hands on the bottom of the dishpan while standing in an erect position.

Organize storage and work areas: Excessive bending or reaching causes back strain and increases fatigue. Keep items that are used often within easy reach. Store items in the area where they are used most. See "Storage Height" handout.

Keep cool: Working in a room that is warm is less efficient for the body than working in a cool place, because extra energy must be expended by the heart and lungs to cool the body. So, do more stressful activities such as gardening, in the cool part of the day. Avoid excessively hot baths or Jacuzzi, as they may cause fatigue, dizziness, or shortness of breath.

#### **Miscellaneous:**

- Use modern labor saving devices.
- Use both hands when possible to carry things in order to distribute weight.
- Do not nest bowls; store singly so both hands may be used to take them out and put them back.
- Keep often used mixing utensils in a container on the counter top to eliminate opening a drawer and hunting for what you want.
- Using paper plates when necessary/appropriate eliminates dishwashing and lightens the weight.
- Explore lighter weight plastic ware.

Source: NJH



## **HIGH BLOOD PRESSURE, DIABETES CUT HEART'S RESERVE**

The reserve capacity of the heart is impaired in people with diabetes and with high blood pressure, even when they don't have actual coronary artery disease, and this could ultimately lead to heart failure, according to a new report. "Strict control of both hypertension and diabetes is essential to avoid the development of clinical syndromes," Dr. Miguel Quintana from the Karolinska Institute, Stockholm, Sweden told Reuters Health. Quintana and colleagues used an ultrasound technique to study the heart while it was being forced to beat strongly by infusion of a stimulating drug in 128 patients without coronary artery disease.

Several features differed significantly between healthy subjects and patients with high blood pressure with or without diabetes, the team reports in the American Journal of Hypertension. Basically, the researchers found that the heart's main pumping chamber, the left ventricle, had less in reserve among subjects with hypertension and in those with diabetes, and the coexistence of both conditions appeared to have an additive detrimental effect.

In a related editorial, Dr. Paul Poirier from Hopital Laval, Sainte-Foy, Quebec, Canada says the study provides more evidence that diabetes itself can cause heart failure. "The challenge from a clinical point of view is to screen these patients to prevent long-term cardiac complications in this high risk Population." Source: American Journal of Hypertension



## **A MEATY, SALTY, STARCHY DIET MAY IMPACT CHRONIC LUNG DISEASE**

A new study finds that eating mostly meat, refined starches, and sodium may increase the likelihood of developing chronic respiratory symptoms, including chronic obstructive pulmonary disease (COPD). Researchers found that individuals whose diets are rich in meat, refined starches and sodium are 1.43 times more likely to report new onset of persistent coughs with phlegm than those who consume a diet high in fruit and soy.

"Understanding all the contributing factors, including the role that diet plays in the incidence and development of chronic respiratory symptoms will lead to better prevention and treatment of respiratory diseases," said David A. Schwartz, M.D., the director of the National Institute of Environmental Health Sciences (NIEHS), the component of the National Institutes of Health, that supported the study. "We know that cigarette smoking can be a specific cause of COPD, but now we're learning that avoiding certain foods may help reduce chronic respiratory symptoms, both in smokers and non-smokers."

The results appearing online in American Journal of Respiratory and Critical Care Medicine analyzed data to assess the usual dietary intake of 52,325 participants. Although the study was conducted within a Singaporean population, the dietary patterns are reflective of U.S. eating patterns. The study population consisted of men and women of Chinese ethnicity ranging in ages from 45 to 74 at enrollment. "These are exceptional data on dietary habits," said NIEHS researcher Stephanie London, M.D., lead investigator on the study. "We are fortunate to have access to high quality dietary data from such a large number of participants to address the potential links with respiratory health."

Dr. Mimi Yu, of the University of Minnesota, founder of the Singapore Chinese Cohort, developed and validated a 165-item quantitative food frequency questionnaire in this population. The participants were presented with a list of 147 food items and 18 beverages and asked about the frequency of consumption of each item over a one-year period. For this paper, researchers used these data to analyze dietary patterns of the population, rather than simply looking at individual foods or nutrients as is usually done. "We were able to identify two distinct food patterns in our population," said Dr. London. "what we refer to as the 'meat-dim sum pattern' and the 'vegetable-fruit-soy pattern'."

The meat-dim sum pattern contained 31 food items, predominantly pork, chicken, fish, noodle dishes, and preserved foods, as well as 11 snack items. The vegetable-fruit-soy pattern contained 32 foods, including 23 vegetables, 4 fruit items and

five soyfood items. The meat dim sum pattern was positively associated with new onset cough with phlegm after adjusting for age, gender, smoking, education and other factors. No individual food item could account for the 1.4 fold increase in risk of cough with phlegm from this dietary pattern. "It is difficult to tease out what is accounting for the increases in respiratory symptoms related to the meat-dim-sum diet, and thus using the patterns is useful" said Dr. London.

The researchers explain that there are similarities between the newly identified Chinese patterns and U.S. dietary patterns. Two primary U.S. patterns have been consistently described in the research literature. The "Western" pattern, characterized by red and processed meats, sweets and desserts, French fries, refined grains, has many similarities to the Chinese meat-dim sum diet; and the "prudent" pattern, characterized by fruits, vegetables, legumes, fish, poultry and whole grains, resembles the vegetable-fruit-soy diet.

"As researchers, we rarely look at the impact of dietary patterns on health. We typically look at vitamins and specific foods, but not how overall dietary patterns affect non-malignant respiratory diseases or symptoms," said Dr. London. "These data show us the important contribution that diet can have on the development of diseases, such as COPD. Choosing foods with less saturated fat, lower in refined starches and sodium content is probably a good idea."

Researchers at the National University of Singapore, the University of Minnesota, the University of California at Davis, and Fox-Chase Cancer Center collaborated with NIEHS on this study. Source: (NIH)



## ALPHA-1 INFORMATION

### *Information from the 2006 Alpha-1 Foundation Version 1.4 (1/06) pamphlet.*

Alpha 1 Antitrypsin Deficiency (Alpha-1) is a hereditary condition that is passed from parents to their children through genes. This condition may result in a serious lung disease in adults and/or liver disease in infants, children and adults.

Alpha-1 occurs when there is a severe lack of a protein in the blood called alpha-1 antitrypsin (AAT) that is mainly produced by the liver. The main function of AAT is to protect the lungs from inflammation caused by infection, and inhaled irritants such as tobacco smoke. The low level of AAT in the blood occurs because the AAT is abnormal and can not be released from the liver at the normal rate. This leads to a buildup of AAT in the liver that can cause liver disease."

Everyone with emphysema, COPD, chronic bronchitis or asthma that is incompletely reversible after aggressive treatment should be tested for Alpha-1. So should those with bronchiectasis, newborns and others with liver disease, people with a family history of liver disease, blood relatives of a person diagnosed with Alpha-1, and anyone with panniculitis, a skin disease.

Testing for Alpha -1 is fairly simple, quick, and highly accurate. It is done through a blood test or a mouth swab. People at risk for Alpha 1 should be tested because:

- there are treatments and preventive measures that may slow the progression of lung disease
- since it is hereditary, it can be passed on to your children. Confidential testing is available through the Alpha-1 Coded Testing (ACT) study through which anyone can have a free, confidential test and get their results. Call (877) 886-2383.



## HEARTY LENTIL SOUP WITH SPINACH

Lentils du Puy, sometimes called French green lentils, are our first choice for this recipe, but brown, black, or regular green lentils are fine, too. Note that cooking times will vary depending on the type of lentils used. Lentils lose flavor with age, and because most packaged lentils do not have expiration dates, try to buy them from a store that specializes in natural foods and grains. Before use, rinse and then carefully sort through the lentils to remove small stones and pebbles. The soup can be made in advance. After adding the vinegar in step 2, cool the soup to room temperature and refrigerate it in an airtight container for up to 2 days. To serve, heat it over medium-low until hot, then stir in the parsley.

Makes about 2 quarts, serving 4 to 6

- 3 slices bacon (about 3 ounces), cut into 1/4-inch pieces
- 1 large onion , chopped fine (about 1½ cups)
- 2 medium carrots , peeled and chopped medium (about 1 cup)
- 3 medium cloves garlic , minced or pressed through garlic press (about 1 tablespoon)
- 1 can (14½ ounces) diced tomatoes , drained
- 1 bay leaf
- 1 teaspoon minced fresh thyme leaves
- 1 cup lentils (7 ounces), rinsed and picked over
- 1 teaspoon table salt
- ground black pepper
- ½ cup dry white wine
- 4½ cups low-sodium chicken broth
- 1½ cups water
- 1½ teaspoons balsamic vinegar
- 5 ounces baby spinach

1. Fry bacon in large stockpot or Dutch oven over medium-high heat, stirring occasionally, until fat is rendered and bacon is crisp, 3 to 4 minutes. Add onion and carrots; cook, stirring occasionally, until vegetables begin to soften, about 2 minutes. Add garlic and cook until fragrant, about 30 seconds. Stir in tomatoes, bay leaf, and thyme; cook until fragrant, about 30 seconds. Stir in lentils, salt, and pepper to taste; cover, reduce heat to medium-low, and cook until vegetables are softened and lentils have darkened, 8 to 10 minutes. Uncover, increase heat to high, add wine, and bring to simmer. Add chicken broth and water; bring to boil, cover partially, and reduce heat to low.



Simmer until lentils are tender but still hold their shape, 30 to 35 minutes; discard bay leaf.

2. Puree 3 cups soup in blender until smooth, then return to pot; stir in vinegar and heat soup over medium-low until hot, about 5 minutes. Stir in spinach and continue to heat soup, stirring frequently, until spinach is wilted, about 3 minutes; serve.

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## FRAGRANT SPICE-RUBBED ROAST PORK LOIN

*Makes 4 servings*

### Ingredients

One 1 1/4-pound boneless pork loin  
6 cloves  
2 garlic cloves, quartered  
1 tablespoon plus 1 teaspoon ground cinnamon  
2 teaspoons ground cumin  
2 teaspoons ground coriander  
1 1/2 tablespoons extra-virgin olive oil  
Kosher salt  
Freshly milled black pepper

1. Roll up the pork loin and tie it together with butcher's twine (most butchers will do this for you, but you may have to call in advance and specify the size you want).
2. Preheat the oven to 350°F for 10 minutes. Meanwhile, push the cloves into the meat, spacing them at least 1 inch apart.
3. Next, cut 8 thin slits into the meat, using a paring knife, and place a piece of garlic into each one.
4. Stir the cinnamon, cumin and coriander together with the olive oil, season with salt and pepper to taste, and use your fingers to rub this mixture onto the entire surface of the loin.
5. Place the pork loin on top of a roasting rack over a baking sheet in the oven and cook until it reaches an internal temperature of 145°F (use an instant-read thermometer to check for doneness).
6. Allow the meat to rest for 15 minutes to redistribute the juices. Remove the butcher's twine with scissors and cut the pork loin into approximately 1/4-inch slices.

### Nutritional content per serving

Calories 218; fat 10g; saturated fat 2.4g; percent of calories from fat 41%; cholesterol 82mg; sodium 349mg; fiber 1g; protein 29g; carbohydrates 2g; sugars 1g

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## APPLE SNACK CAKE

1-1/4 cups boiling water  
1 cup Quaker® Oats (quick or old fashioned, uncooked)  
1-3/4 cups all-purpose flour

3/4 cup granulated sugar  
3/4 cup firmly packed brown sugar  
1/2 cup Wheat Germ, any flavor  
2 teaspoons baking soda  
1 teaspoon ground cinnamon  
1/2 teaspoon ground nutmeg  
1/2 teaspoon salt (optional)  
1/2 cup chopped nuts (optional)  
2 cups peeled, chopped apples  
1/3 cup vegetable oil  
1 egg plus 2 egg whites  
1 teaspoon vanilla

### Preparation Steps

Heat oven to 350°F. Spray 13 x 9-inch baking pan with cooking spray.

In large bowl, combine water and oats; set aside. In medium bowl, combine flour, sugars, wheat germ, baking soda, cinnamon, nutmeg and salt; mix well. Stir in nuts. Add apples, oil, egg, egg whites and vanilla to oat mixture; mix well. Add dry ingredients; mix just until moistened. (Do not overmix.) Pour into pan.

Bake 40 to 45 minutes or until wooden pick inserted in center comes out clean. Cool completely on wire rack.

YIELDS 20 SERVINGS





**“That pill they advertise all the time on TV.  
I’m not sure what it is, but I want it!”**

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