

EFFORTS

Emphysema Foundation For Our Right To Survive



Emphysema Takes Your Breath Away

April 2005

WHY YOU DON'T WANT EMPHYSEMA

Nothing is Simple Anymore...

When someone in the family trips over your trailing 50 foot air hose in the family room, you know it, even though you are in the computer room, the kitchen, the bedroom, or the bathroom. If you have a lot of slack, you might not feel it. If there's little or no slack, you feel a sharp yank on your ears, like someone trying to pull them both off at once! Your other scare is that someone has not only tripped, but may have lost their balance and may have fallen!

NEW LIFESTYLE

What's it like to live with oxygen in a nose hose 24/7 for the first year? From what I've learned and have been told by others with COPD, that was the beginning of what could be years of living this way.

Your life takes on a whole new direction when you are told you have emphysema. At this point you find that you have quit smoking too late. It has been creeping up on you for years. You've been coughing your "smoker's cough" around the clock without giving it a second thought, or kept your head in the sand and tried to ignore that chronic bronchitis which led to the emphysema.

Brain Fog and Exhaustion

Although I'd been told I had emphysema (COPD) four years previously, I was shocked when my doctor only just now prescribed around-the-clock oxygen for me. That happened because I'd tried to rake some leaves in my back yard. I couldn't believe how quickly I ran out of steam and could not catch my breath! Plus, I was in what I called a "brain fog" a lot more these days, so my doctor discovered my body's oxygen level was operating on only 74%, where normally 90% + is acceptable. So, it was oxygen tank time for me.

My New Leash on Life

If you've ever wondered what it's like to be "on a leash", you'll wonder no longer as you try to adapt to your new lack of freedom. Wherever you go, there it is. You'll learn to dress without the "nose hose" on after you've found out what happens when you get dressed and find the hose now runs down the inside of your pants, making it difficult to navigate. For us women, you haven't lived until you've trapped the hose on the inside of your bra and not noticed until you tried to leave the room.

Some "leashes" take a curious delight in becoming entrapped when you close the door on your two door style refrigerator, thereby forcing you to open the door once again to duck to get the looping hose out. Mine does this 97% of the

time whenever I open the fridge door. Trust me, this is NOT a good way to stay on a diet!

Nose Hoses and Ear Lifts

Opening a hot oven becomes an exercise in juggling hot racks, hot food, and keeping your cool oxygen hose off the hot surface! This can be done by tucking the hose between your knees. When you get up from the table, or from any sitting position, be sure you are NOT standing on your hose. Your ears will feel like they're going into outer space if you don't get off it quickly! If your ears are close to your head "before nose hose", you may notice them beginning to flare outward if you step on the hose too much. A bold new style of makeover!

Snags

You will soon learn to hold your nose hose with one hand while gallivanting through the house. If you don't, you will experience many backward head jerks due to the hose getting caught around corners, in the corner of appliances (yes, the refrigerator comes to mind again), and under door jambs. The rocking chair is superb at reaching out and snagging it often, and woe is you if one hand has a plate with a sandwich on it, and the other hand has a glass of milk! You have no way of getting free of the snag unless you put something down and yank it out from under the rocker. Passing mates are really handy right about then too.

The Details of Daily Life...

Tangles

The tubing (which looks like aquarium air line) can become kinked and tangled after a day of going back and forth and can actually become kinked to the point of nearly shutting off your air. Where you were at 2 liters before, you are now down to below one. Now you'll need to find the kink and un-kink it. As you do, you'll see the level on your concentrator return to 2. You'll need to check your concentrator as you go by to be sure you are getting the air you need. The concentrator machine is a bit noisy, so you might want to keep it away from your living room and sleeping areas.

When sleeping, you never know if you are going to wake up with your nose hose still in your nose, or if it's to be found atop your head where you pushed it in the night while asleep, or it may be lost on the floor. Aghast, you wonder if you got enough oxygen during the night. You must also remember to take your medicine, including any inhaler prescriptions nightly.

The Pet Thing

If you have dogs or other pets at home, they will react to it in different ways. One of mine hates the hose and avoids it like the plague. It's taken him a year to even accept it. The other

seems to think it links us together like Siamese twins, and she sits or lays on it every chance she gets. She's responsible for some of my ear tugs, let me tell you! Cats, as you know, love to chase moving "strings". Keep her nails trimmed.

Oxygen Levels

Power failures are worse for you than your computer dying from power failure. If the power goes off, you need to plug into your bottle oxygen, which only lasts a short time, so it's a good idea to have at least 4 filled bottles around continuously.

Vacations are planned around your oxygen provider's nationwide or worldwide reach and availability of oxygen wherever you go and when you need it. Trips into town or to the grocery store have to be planned by how much oxygen is in the tank you are taking with you. If it's not enough, you will have to change the tank, removing the regulator and putting it on a full tank before going shopping.

Staring Matches

Once outside either with your large tank with the wheels, or with the portable unit, you cannot elude the stares of both children and adults. The worst are the smokers whose minds you can just about read by the way they look at you in horror. "I wonder if that could possibly happen to me? Nahhhh! I'm not old enough yet!" they think. Well, I used to think the very same way! When you have an oxygen tank, you no longer have an "invisible" disease. It is all too visible to the whole world. And it becomes scary. Almost all emphysema is cause by smoking, did you know that?

Preventable, but Non-reversible

Emphysema is not a reversible disease because of the manner in which the lung is damaged. You lose more and more elasticity within the lungs as time goes on, and it becomes harder to breathe. You can avoid getting emphysema by quitting smoking just as soon as possible. "Now" would be best. The other option is to never start smoking. Believe me, smoking is not worth going through this in any way, and I wish I had never started smoking as a teen. Guess I should have listened to my Dad, right?

Gratitude

The good thing about having this oxygen 24/7 is that my gratitude has grown because my life has been extended for a time by having oxygen to help my body operate as well as it can. Without it, who knows how short the time would be. I hope that my life will be extended long enough for a miracle to happen; medical or otherwise. Truly, I pray a smoking-related disease NEVER ever happens to you.

.....Christine Rowley, About, Inc.



UNDERSTANDING WHY YOUR DOCTOR MIGHT SAY NO

Did you ever go to a doctor's office with a request and leave without getting what you expected? Perhaps you read a newspaper article describing a treatment studied by a highly reputable academic medical center. It sounded so good, so safe, so appropriate for you - why would your doctor say "no" or suggest something else? Or, perhaps you saw an advertisement for a medication that treats a problem you have. If you aren't taking anything for it, or if you are and it's not working, why

not see your doctor (as advised at the end of the commercial) and get a prescription? The same can happen for a test or even a referral to a specialist.

How can it be that with so much science and study backing recommendations for health care that the message from news or advertisements varies so much from the one your doctor provides? This happens all the time and is a significant source of confusion, frustration, and even damaged relationships between patients and their doctors.

Reasons Your Doctor Says No

Here are some of the reasons why you may leave your doctor's office without the test, the referral or the prescription that you expected:

Your information is preliminary. The "latest" information you heard may be based on only a few patients, or based on animal studies or "in vitro" experiments (meaning, in the lab - not an actual experiment that involved living, functioning humans or other animals). Such research may be promising, exciting, and truly newsworthy, but nowhere near ready for widespread use. In fact, the treatment may not even be available other than in research centers.

Your information is "too new." Because information is generated and delivered faster than ever before, it is quite possible that you will see a study reported in the news before your doctor has had a chance to review it. He or she may not be enthusiastic about recommending it to you until there is time to review the information.

Your information is outdated. There may be even more recent scientific studies to support your doctor's commendations and, fortunately, your doctor is up-to-date about it; your other sources of information may not be.

There may be something unique to your situation. Your other illnesses or conditions may make the information you've read or heard less applicable to you, or your condition may be different from the condition mentioned in the ads or new research. For example, a study might be talking about a new treatment for ulcers, but you have heartburn; a great treatment for ulcers may not help your heartburn.

You may have a condition that requires no treatment. Even though ads may encourage you to take medication for it, you may not need it. For example, you may see ads for medications to treat anxiety; yet, some degree of anxiety is normal and requires no treatment. Similarly, ads for allergy medications may not be necessary for mild allergies to things you can simply avoid.

Expense matters. Whether it is cost to you, your insurer, or the "system" at large, if two treatments have identical risks and benefits, the less expensive one may be recommended rather than the one you were requesting. Because cheaper generic drugs are not heavily promoted in the media like expensive brand name drugs, you may get the impression that the brand-name medicines are better. That's usually not the case.

Your doctor's training and experience are worth considering. Most physicians tend to stick with those treatments that have proved safe and effective. After years of experience, your doctor knows what to expect when

prescribing these drugs. It's understandable that many doctors are reluctant to give up on these "tried and true" medicines in favor of recently approved drugs that have not been around long enough for rarer or unexpected side effects to come to light. Physicians who were slow to recommend rofecoxib (Vioxx) rather than older medicines (such as ibuprofen) are good examples of this. For many patients, sticking with the older medicine turned out to be a reasonable and, perhaps, an even safer choice.

Your doctor has samples. Many doctors' offices stock samples of drugs that are provided free of charge by the sales representatives of drugs manufacturers. The advantage to you is that you can try the medicine out before spending money on a prescription. The disadvantage is that samples are nearly always for expensive, brand-name medicines; trying them for free encourages their use (and that's, of course, why they are there in the first place). Your doctor may be more likely to recommend a medication for which he or she has samples than the medication you are requesting.

The "formulary" matters. A formulary is the list of medications a hospital pharmacy carries or that an insurance company will cover. It may determine the choice of medications your doctor recommends. Hospitals or insurers may decide to "carry" one medicine rather than another because they have negotiated a better price for it. In general, this is an issue when more than one medicine is deemed equally safe and equally effective and the only real difference is price. If you are admitted to a hospital, your treatment during your stay and the prescriptions you receive when you leave may be determined (at least in part) by the formulary.

The "big picture" matters. Decisions to order tests or suggest referrals to see a specialist are typically determined by a combination of your symptoms, your examination, the results of previous tests, and the knowledge, experience and concerns of your doctor. It can be a complicated process of integrating the information that makes up the big picture, but if your doctor is confident of the diagnosis and ideal treatment, he or she may feel that there is no reason for additional testing or consultation even when that's what you were expecting.

Learning To Say No

Although it is not always easy, doctors must learn to say no, and they are taught to do so in medical school and during later training. For example, many people expect and request antibiotics whenever they or their children have a sore throat or a fever, even though colds and most fevers are due to viruses. Viral infections do not respond to antibiotics.

It's understandable why that expectation is there; perhaps symptoms are not due to a cold, perhaps it's strep throat or another bacterial (rather than a viral) infection and it's best to "nip it in the bud." Or, there may be misunderstanding about the difference between viral infections and bacterial infections and how they are treated. But widespread use of antibiotics for conditions that do not require them will not help people get better any faster, may cause side effects and may eventually lead to increased resistance to those antibiotics when and if they are needed in the future.

Given all the direct-to-consumer marketing, it's easy to believe that every discomfort, ache, pain, or less-than-perfect bodily function should be evaluated, tested and/or treated. Clearly, every person with a headache does not require an MRI, neurological consultation or the latest migraine treatment. Ideally, such decisions should be shared between patients and their doctors.

Conclusion

There may be good reasons for what your doctor is saying, even when you aren't getting what you expected. If you don't understand why your health care professional is reluctant to prescribe the medication you expected or to recommend the test you thought you needed, ask for an explanation. Understanding the reasoning can be helpful not only as a way to be better informed about your condition, but also to avoid misunderstanding.

Studies show that many people are ready to switch doctors if they don't get what they want or expect, and that would be a shame if you have a good relationship with your doctor. Don't be afraid to ask your doctor to explain his or her recommendations, especially when they do not match your expectations; it may be the only way to really understand what your doctor is saying.

....Robert H. Shmerling, M.D.

STUDY: SPECIALIZED PROTEIN MAY PROTECT LUNGS FROM DISEASE

A special protein on the surface of cells once regarded as a troublemaker in the lungs actually plays an unexpected role as pulmonary protector—mitigating the damage caused by chronic lung illnesses such as chronic obstructive pulmonary disease, or COPD. So says a study published in January in the *Journal of Clinical Investigation*.

COPD describes a category of diseases that includes emphysema, chronic bronchitis, and in some cases, asthma. It's a leading cause of death, illness, and disability in the United States. Smoking is the leading cause of the disease, but other etiologies include exposure to air pollutants, respiratory infections, and certain genetic factors. People with COPD can develop pulmonary hypertension as a complication, according to doctors.

.....in the news

AIR POLLUTION THICKENS THE BLOOD

Air pollution, and especially particulate matter, thickens the blood and boosts inflammation, finds experimental research in *Occupational and Environmental Medicine*.

This may help to explain why air pollution is associated with an increased risk of heart attacks, stroke, and worsening respiratory problems.

The research team tested the inflammatory and blood clotting responses of human immune cell (macrophages) and umbilical cord and lung cells, six and 24 hours after exposure to particulate matter.

The results showed that clotting factors, which thicken the blood, were enhanced in almost all the cell types. The rate of

death in immune cells also significantly increased, and exposure to the pollutants boosted inflammatory activity.

The authors say their findings suggest that particulate matter has the ability to alter cell function so that it promotes thickening or coagulation of the blood. And they point to a potential synergy between the factors that boost inflammation and blood thickening.

Ultrafine particles of inhaled particulate matter can enter the bloodstream, raising the possibility that their "thickening" effects on macrophages might have an impact on the plaques found on artery walls. Macrophages are a major component of arterial plaques.

.....BMJ Specialty Journals



COMING UP FOR AIR

People with severe breathing problems are having a rougher time than anybody realized, says the most in-depth survey yet on the impact of chronic obstructive pulmonary disease (COPD).

People who have COPD can't catch their breath even when doing the most mundane of tasks: dressing, washing, talking and sleeping, the survey shows. And even though there's more hope than in the past for managing the disease, these devastating daily effects of COPD suggest that patients aren't getting the most out of available treatment. "Despite COPD being the fourth-leading cause of death in the United States, it is still underdiagnosed and underappreciated by the medical community," says Dr. Stephen Rennard, Larson professor of Medicine at the University of Nebraska Medical Center at a press conference today in Washington, D.C. "And this survey shows that COPD is even more under-recognized by the patient population.

The devastating impact that this kind of cough can have on people's lives is brought out by the survey, which also shows that patients tend to normalize their limitations. People with COPD have reduced expectations about what they think they can do in life and unrealistic expectations about medical treatment, which can lead to under-treatment." While the medical community knows lots about the nature of COPD, it knows surprisingly little about COPD symptoms, the disease's severity and its lifestyle impact, Rennard says. To get a handle on the burden of the illness, Rennard worked with a national public-opinion research firm, interviewing 573 patients over the age of 45 who were diagnosed with COPD, as well as interviewing 203 doctors about treatment. Among the survey's major findings:

- Nearly half the people with COPD get short of breath while washing and dressing, while 46 percent report shortness of breath doing light housework;
- One in three get short of breath while talking and 28 percent have a hard time breathing just sitting or lying down;
- Half of all COPD patients say the disease limits their ability to work, while 58 percent say they panic when they cannot get their breath;
- Close to two-thirds of COPD patients say they expect their condition to get worse.

COPD is an umbrella term used to describe the difficulty in breathing caused by major lung diseases such as emphysema and chronic bronchitis. Emphysema leads to irreversible lung damage by weakening the air sacs, while bronchitis is an inflammation of the lungs leading to a build-up of mucus, an ideal breeding ground for more bacteria. The result of all of these diseases: less oxygen and more carbon dioxide and lots of coughing, shortness of breath, chest tightness and increased mucus production. Long-term smoking is responsible for up to 90 percent of all cases of COPD.

COPD affects twice as many Americans as diabetes, and killed about 112,000 in 1998, according to the National Center for Health Statistics. The disease currently affects about 16 million people in the United States and an equal number may have the disease and not even know it.

While most people think COPD is a disease of the elderly, nearly half of the patients surveyed were under the age of 65, nearly a quarter were under 55. The vast majority -- 87 percent -- of people with COPD are white, and 60 percent of them are female. Underreporting may be responsible for the racial skew, say the researchers. The findings were published today in the report, *Confronting COPD in America*.

The survey shows that patients are hopeful about treatment, but the realities of the disease reduce their expectations about what they can do in life, Rennard says. "The data suggests that people with COPD are judging their health and quality of life against drastically lowered standards," he says. "They appear to be accepting the limitations imposed by the disease as normal."

To treat COPD you need early diagnosis, says James Pike, a pulmonologist in Indianapolis, Ind. "I think the sense from the survey is that diagnosis is potentially under recognized; that COPD can cause a lot of difficulties as it progresses and that people who smoke tend to underestimate the severity of the disease. Smokers assume that it's just smoker's cough, and the cough does not drive them to a physician to seek care. And yet it is exactly those symptoms, chronic cough or mild shortness of breath or excess of sputum, that in fact help diagnose the disease.

"Doctors need to be more aware, as well, Pike suggests. "I don't think the physician community is sufficiently alerted. The diagnosis of COPD is done with spirometry -- which measures lung volumes and how quickly a person can exhale a certain amount of air -- and not all physician office have spirometers." "People are not seeking care early enough because they smoke," Pike adds. "And doctors are not testing early enough for the disease among the smoking population."

.....HealthScout



IMPROVEMENT IN EXERCISE TOLERANCE WITH THE COMBINATION OF TIOTROPIUM AND PULMONARY REHABILITATION IN PATIENTS WITH COPD

Study objectives: Pulmonary rehabilitation (PR) improves exercise tolerance in COPD patients. Tiotropium is a once-daily, inhaled anticholinergic bronchodilator that

provides sustained 24-h improvements in airflow and lung hyperinflation reduction. We hypothesized that ventilatory mechanics improvements from tiotropium would permit enhanced ability to train muscles of ambulation and therefore augment exercise tolerance benefits of PR.

Participants: Mean age of the 93 participants was 67 years, 57% were men, and mean FEV1 was 0.88 L (34% predicted).

Conclusions: Tiotropium in combination with PR improved endurance of a constant work rate treadmill task and produced clinically meaningful improvements in dyspnea and health status compared to PR alone. Improvements with tiotropium were sustained for 3 months following PR completion

....chestjournal.org



LUNG DISEASE TREATMENT MAY PREVENT HEART ATTACKS

Inhaled corticosteroids, drugs used to treat asthma and chronic obstructive pulmonary disease (COPD), were found to be associated with a reduction in the risk of acute myocardial infarction, according to investigators at McGill University in Montreal led by Samy Suissa. Their findings, published in the April issue of the ERJ, show that low doses of these drugs used by patients with COPD may reduce the risk of acute myocardial infarction by 30%.

COPD, characterised by slowly progressive and mostly irreversible airflow limitation, is the fourth leading cause of death in the USA and Europe. COPD patients are more likely to develop cardiovascular disease.

Inhaled corticosteroids, drugs that target the inflammatory component of COPD, may also affect the inflammation present in the development of cardiovascular disease.

The McGill University team looked at a cohort of 5,648 COPD patients identified using the Canadian province of Saskatchewan's universal health insurance programme. During an 8-year follow-up, 371 of these patients incurred an acute myocardial infarction.

The authors found that the use of inhaled corticosteroids was generally associated with an 18% reduction in the risk of acute myocardial infarction and a significant 32% reduction with lower doses.

The authors conclude that inhaled corticosteroids may lower the inherently elevated risk of heart attacks in patients with COPD.

This potential unintended benefit of inhaled corticosteroids should be verified further using randomised controlled trials.

....European Respiratory Journal (ERJ)



IS A LONG-ACTING INHALED BRONCHODILATOR THE FIRST AGENT TO USE IN STABLE CHRONIC OBSTRUCTIVE PULMONARY DISEASE?

Abstract

Purpose of Review:

This article reviews findings from recently published randomized controlled clinical trials to address the question whether a long-acting inhaled bronchodilator should be the

initial choice for maintenance therapy in patients with stable, symptomatic chronic obstructive pulmonary disease (COPD).

Recent Findings:

Results of recent clinical trials suggest that a long-acting inhaled bronchodilator, either once-daily tiotropium or twice-daily salmeterol or formoterol, has advantages over a regularly-scheduled short-acting anticholinergic inhaled bronchodilator (ipratropium) as initial maintenance therapy in patients with at least moderate, stable, symptomatic COPD (forced expired volume in 1 second = 60-70% predicted; mean, ~37-45% predicted). For tiotropium, these advantages encompass several important outcomes, including lung function, rescue inhaler use, dyspnea, frequency of exacerbations, and hospitalization for COPD, in addition to greater convenience and therefore potentially better adherence to prescribed therapy, whereas side effects are similar except for a greater incidence of dry mouth.

Summary:

Current evidence supports the recommendation of the Global Initiative for Chronic Obstructive Lung Disease guidelines of at least one of the two classes of long-acting inhaled bronchodilators as initial maintenance therapy for symptomatic COPD. In patients who do not respond satisfactorily to tiotropium or a long-acting inhaled β -agonist as the initially prescribed single maintenance agent, the Global Initiative for Chronic Obstructive Lung Disease guidelines recommend the addition of the alternate class of long-acting inhaled bronchodilator as the next step. Further clinical trials are required to investigate whether this recommendation is preferable to that of adding an inhaled corticosteroid, which has been shown to have additive benefits to those of a long-acting β -agonist with respect to bronchodilation and, variably, dyspnea, rescue bronchodilator use, and quality of life. The choice of agents will depend ultimately on how well the patient responds to a trial of the drug in terms of both efficacy and side effects, and patient preference and cost.

.....medscape



AMERICAN THORACIC SOCIETY

ATS-Comments on Air Travel with Supplemental Oxygen

In March, the ATS submitted comments to the Department of Transportation (DOT) regarding difficulties faced by patients who require supplemental oxygen during commercial flights.

The ATS comments acknowledged DOT's ongoing efforts to establish revised regulations that will improve travel access for patients who require supplemental oxygen. While acknowledging efforts in this area, the ATS also pointed out regulatory requirements that create significant cost and convenience barriers for patients seeking to use supplemental oxygen during air travel. ATS expects that this spring the Federal Aviation Administration and DOT will issue regulatory policy that will significantly improve travel options for people who use supplemental oxygen.



PILLCAM ENABLES STUDY OF ESOPHAGUS BY SWALLOWING A PILL

Diagnosing inflammation, pre-cancerous changes or dilated veins in the esophagus is now as easy as taking a pill - a pill housing miniature video cameras.

UT Southwestern Medical Center is the first in Dallas to acquire the PillCam ESO technology. It allows doctors to quickly and easily assess the presence of esophageal diseases such as erosive esophagitis, Barrett's esophagus and esophageal varices.

Approved by the Food and Drug Administration late last year, the PillCam ESO is a smooth plastic capsule about the size of a large vitamin pill with video cameras on each end, equipped with a battery and internal light source.

After the patient lies down, the PillCam ESO is swallowed and glides through the esophagus, taking about 2,600 color pictures (14 per second). The patient gradually sits up to aid its progression down the esophagus, while the photographs are transmitted to a recording device and then viewed on a computer screen. The single-use capsule is passed naturally in less than 24 hours.

"The main use of the PillCam ESO right now is to find pre-cancerous changes in the esophaguses of patients who had had acid reflux for more than five years," said Dr. Charles Ulrich, associate professor of internal medicine. "It also can be used to find varices or dilated veins, and there are a number of other applications under investigation."

According to the American College of Gastroenterology, approximately 19 million people have gastroesophageal reflux disease (GERD), which is caused by stomach acid moving upward from the stomach into the esophagus. An estimated 700,000 Americans suffer from Barrett's esophagus, a pre-cancerous condition attributed to longstanding GERD. Erosive esophagitis occurs when areas of the esophageal lining are inflamed and worn away, and esophageal varices are a complication of cirrhosis of the liver.

Current traditional diagnosis and evaluation of these conditions usually involves sending a long, flexible tube, called an endoscope, through the patient's mouth and throat into the esophagus. The procedure requires sedation, up to an hour of recovery time, post-procedural transportation and a day off from work.

By contrast, the PillCam ESO study takes 20 minutes, requires no sedation and provides immediate recovery, said Dr. Ulrich, who heads UT Southwestern's endoscopy services. Clinical trials already have shown that its accuracy is comparable to a traditional endoscopy.

PillCam ESO is not recommended for people with swallowing disorders, pacemakers, or known or suspected gastrointestinal obstruction, said Dr. Ulrich. An endoscopy is still needed for tissue samples should the images suggest the presence of Barrett's esophagus or other serious problems.

The PillCam is similar to the PillCam SB, which was FDA-approved in 2001 to detect abnormalities in the small bowel. UT Southwestern researchers are performing studies using both devices.

.....medicalnewstoday.com

PROBIOTICS - DO BACTERIA SURVIVE IN PEOPLE'S DIGESTIVE SYSTEM?

Research to find out whether bacteria from probiotic products survive in people's digestive systems has been published today by the Food Standards Agency, UK.

The study was designed to find out if and where these bacteria break down as they pass through the digestive system. The study did not look at whether probiotic products have an effect on health.

Findings suggests that not all strains of bacteria used in probiotic products survive through the entire digestive system, although at least one strain in each of the products tested survived beyond the stomach. The research does not show if or where probiotics might have an effect.

Scientists at the University of Reading used laboratory models of the human gut to imitate the conditions of the stomach, upper intestine and lower intestine.

Probiotic bacteria found in 11 different probiotic products were tested. Products included dairy and fruit juice containing live bacteria and dry preparations in the form of tablets, capsules and powder. All bacteria used were grown and their numbers standardised before each experiment began.

The researchers used a model to simulate the effect adding probiotic bacteria would have on the total number of bacteria in a typical human digestive system. Overall, adding bacteria from probiotics did not change the total number of bacteria in the gut.

.....Food Standards Agency, UK



ASPIRIN BENEFITS REVERSED FOR MEN, WOMEN

A study showed aspirin helped women to prevent strokes, but not heart attacks -- different results than in men. Aspirin has been recommended for both sexes.

In a stunning example of gender differences in medicine, a major new study found that aspirin helps healthy women avoid strokes but makes no difference in their risk of heart attacks unless they're 65 or older -- the polar opposite of how the drug affects men.

Aspirin is recommended now for both men and women at high risk of heart disease. Many doctors have assumed it also prevented heart problems in healthy women because of research showing it helped healthy men.

The new study "raises issues about the dangers of generalization," said Dr. Paul Ridker of Harvard Medical School and Brigham and Women's Hospital in Boston, one of the researchers. "This is an issue we thought we already had an answer to."

The Women's Health Study was the first rigorous test of aspirin and vitamin E in women. It found that taking vitamin E did no good, adding to a large body of evidence that such supplements don't help and might even be harmful.

The study's results were presented Monday at the American College of Cardiology meeting in Orlando. They also were published online by the New England Journal of Medicine and will be in the March 31 print edition.

"This is a very important study with major public health implications," said Dr. Elizabeth Nabel, director of the National Heart, Lung and Blood Institute, which funded it with the National Cancer Institute.

Nearly 40,000 female health professionals 45 and older were randomly assigned to take either fake pills or 100 milligrams of aspirin -- slightly more than the 81-milligram "baby aspirin" pills commonly sold -- every other day.

After 10 years, aspirin users had a 17 percent lower risk of stroke and a 24 percent lower risk of strokes caused by blood clots -- the majority of strokes -- probably due to aspirin's well-known anti-clotting properties, researchers believe.

Women 65 and older got the most benefit: They were 30 percent less likely to have a stroke caused by a blood clot and 34 percent less likely to have a heart attack.

But the benefits came with a cost. Stomach or intestinal bleeding requiring a blood transfusion occurred in 127 women on aspirin and in 91 women taking placebos.

'NOT A MIRACLE DRUG'

"Aspirin is not a miracle drug for women, unfortunately," said Dr. Maureen Lowery, a professor of medicine at the University of Miami Miller School of Medicine and a cardiologist specializing in women. "We don't want to do what we know we should -- diet, exercise, stress reduction and so on."

She said women wondering whether they should take aspirin should go to their doctors to assess their own individual risks.

Doctors use the Framingham Scale, which assigns points for individual risk factors including age, total cholesterol, HDL or "healthy" cholesterol, smoking, blood pressure, diabetes, kidney disease and other factors.

Aspirin's protection was greatest for nonsmokers and former smokers, and didn't vary among women who did or did not use hormones after menopause.

In 2002, American women suffered 345,000 heart attacks and 373,000 strokes.

Men suffered 520,000 heart attacks and 327,000 strokes.

FILLING IN THE GAPS

The new study fills gaps in knowledge because virtually all research in the past on this issue was done in men, said Harvard epidemiologist Julie Buring, who presented the study's results.

"We finally have the evidence base needed for women to make rational decisions about the use of aspirin in preventing cardiovascular disease," she said.

Reasons for the gender differences are unclear. Strokes usually occur from blood clots that form in neck arteries; heart attacks, from coronary artery clots. Aspirin may affect one or the other more in men than in women. The dose of aspirin in this study also was lower than some previous men's studies.

"It also may be due to a difference in biology between men and women that we simply don't understand. It could be that men and women respond differently to aspirin," Nabel said.

.....Miami Herald



MORE ON ASPIRIN AND WOMEN

Statement from Elizabeth G. Nabel, M.D., Director of the National Heart, Lung, and Blood Institute of the National Institutes of Health on the Findings of the Women's Health Study

The Women's Health Study is the first large clinical trial to study the use of low-dose aspirin to prevent heart attack and stroke in women. The 10-year randomized, double-blind, placebo-controlled study was conducted among nearly 40,000 healthy women age 45 and older. Although studies have shown that low-dose aspirin reduces the risk of a first heart attack in men, there have been few such studies in women. The study was supported by the National Institutes of Health's National Heart, Lung, and Blood Institute and the National Cancer Institute.

The Women's Health Study found that aspirin did not prevent first heart attacks or death from cardiovascular causes in women. Low-dose aspirin (100 mg on alternate days) lowered the incidence of a first major cardiovascular event (nonfatal heart attack, non-fatal stroke, or death from cardiovascular causes) by 9 percent. This was not statistically significant. Stroke was 17 percent lower in the aspirin group, a statistically significant difference. The findings of the study will be presented at the American College of Cardiology's (ACC) annual meeting in Orlando, FL and also published online in *The New England Journal of Medicine* March 7, 2005 and in print in the March 31 issue.

The greatest benefit appeared to be in women 65 and older. In this sub-group, low-dose aspirin reduced the risk of major cardiovascular events by 26 percent. However, the benefits of low-dose aspirin therapy must be weighed against the risk of an increased chance of internal bleeding, a well-known side effect of aspirin use.

The bottom line is that many women, especially those 65 and older, may benefit from taking low-dose aspirin every other day to prevent stroke. But it is important for women to weigh the risk and benefits of taking aspirin and to consult with their doctor. Above all, women, like men, should adopt the well-proven approaches that reduce the risk of heart disease -- eating for heart health, getting regular physical activity, maintaining a healthy weight, not smoking, and controlling high cholesterol, high blood pressure, and diabetes.

The Women's Health Study also assessed the benefits of vitamin E supplementation (600 IU every other day). These findings, also presented at ACC, indicate there was no evidence of cardiovascular benefit or increased risk from taking a vitamin E supplement. Analyses of the effect of vitamin E and aspirin on cancer are under way.

.....NHLBI



AIR TRAVEL AND LUNG DISEASE: CURRENT GUIDELINES ARE INAPPROPRIATE

For the first time, patients suffering from chronic obstructive pulmonary disease (COPD), were studied during a

commercial flight lasting almost six hours. Their blood oxygen content underwent a considerable reduction, more marked than could have been predicted using the currently accepted guidelines. However, the oxygen reduction was generally well tolerated by those subjects who, prior to departure, had a blood oxygen content equal to or greater than the recommended pre-flight value.

A German team, whose study also appears in April's ERJ, conducted similar experiments on patients with cystic fibrosis. They conclude that these patients can also travel on flights of several hours' duration without excessive risk.

What, in today's world, could be more commonplace than a plane trip lasting a few hours, whether for business or pleasure? Yet, while such flights are unproblematic for most of us, they can be dangerous for people with certain conditions. This is particularly true of lung disease sufferers, especially those with either chronic bronchitis (known to doctors as chronic obstructive pulmonary disease or COPD) or cystic fibrosis. Under scrutiny, therefore, is the air pressure on board commercial aircraft, whose passengers are subjected to a virtual altitude of 1,500 to 2,500 metres depending on the length of flight. At such altitudes, the air contains some 30% less oxygen, a matter not to be taken lightly for patients whose blood oxygen level is already precarious because of their respiratory condition.

For several years, doctors have been working on this issue and trying to develop recommendations, both on the minimum oxygen level needed inside planes and on methods for identifying, in advance, patients who could encounter problems while flying. These methods include respiratory capacity measurement and assessment of whether the subject can walk fifty metres without getting excessively breathless. Measurement of arterial oxygen tension (PaO₂) was also recommended: above a certain value, it was deemed to indicate that the level would remain acceptable during the flight.

Real flight conditions

In fact, these various recommendations have created quite a lot of debate, especially since they partially contradict one another.

So four Norwegian doctors decided to undertake a study in the conditions of a real flight. Their results can be seen in April's issue of the ERJ, the scientific publication of the European Respiratory Society (ERS).

While most of the existing data came from experimental studies based either on inhalation of air with artificially reduced oxygen levels or on time spent in a depressurised caisson, the Oslo team took an innovative approach and conducted a study on board a real commercial flight.

The researchers decided to assess the effects of oxygen-reduced air on 18 COPD patients during a flight from Oslo to Las Palmas (five hours and forty minutes in duration) with the cabin pressure equivalent at cruising height to an average altitude of 1,829 metres (6,000 feet).

"The experimental nature of the earlier studies made it impossible to incorporate the various stresses that travellers encounter during their journey: the need to carry luggage, the

often lengthy trek to the departure gate, the cramped conditions in the plane, the dryness of the cabin air, turbulence and other factors", explains Aina Akerø, the article's main author.

"But our work has been able to include all of these elements, and we have also studied the influence of hypoxia duration by taking measurements twice during the flight", adds Ole Henning Skjøsberg, Akerø's colleague at the Department of Pulmonary Medicine of Ullevål University Hospital, Oslo.

Rigorous selection of subjects

The Norwegian researchers set themselves two goals: to measure various parameters during the flight and to compare the values measured on the ground before the journey with those obtained in the air.

First, they measured the various dissolved gases and the oxygen saturation in the subjects' arterial blood, noting possible clinical manifestations, such as when the subjects moved around the aircraft cabin.

These measurements were taken twice during the flight: approximately one hour after the plane reached cruising height, and three hours later, following a light meal without alcohol.

Akerø and her colleagues also looked at whether certain parameters connected with the respiratory volumes and blood gases measured prior to departure could be correlated with the data registered in-flight, and, if so, whether they allowed prediction of what would happen during the journey.

The 18 patients (five women and 13 men, aged 49 to 73) were recruited through a lung rehabilitation centre that organises rehabilitation programmes in warmer climates specially designed for people with chronic bronchitis or emphysema.

An important detail: the subjects selected had not suffered an exacerbation for at least two months, and all but one used bronchodilators. Additionally, to avoid any risk of misinterpretation, they had to be clear of any symptoms that could suggest cardiac or neurological compromise, any lung disease other than their COPD and anaemia.

Risk of fatigue after five hours

"We had, of course, made sure that the rehabilitation centre had pronounced all of our subjects fit to fly without additional oxygen", the authors explain, "and that they could all walk at least fifty metres without excessive breathlessness, which we verified with a treadmill test."

After an hour at cruising height, the investigators found a considerable drop in blood oxygen pressure (averaging 20%), while, quite logically, arterial oxygen saturation had decreased from 96±1% before departure to 90±4% in-flight. This held true while subjects remained seated; moving around the cabin caused arterial oxygen saturation to fall even more, to 87±4%.

The Norwegian team also measured arterial carbon dioxide pressure and found it to fall slightly after the first hour of flying, in parallel with a marked rise in heart rate.

"The reduction observed after four hours of flying

constitutes in our view evidence of a compensatory hyperventilation developed by subjects to maintain their arterial oxygen saturation", Skjongsberg comments. "This could indicate that such patients may be at risk of respiratory fatigue during longer flights."

Comparison of pre- and in-flight data revealed a number of correlations and confirmed that arterial oxygen pressure on the ground can allow prediction of in-flight values. However, the Norwegian team's measurements show that the current guidelines are inappropriate.

For example, the guidelines assume that arterial oxygen pressure will be adequate if, before departure, it exceeds a certain level (9.3 kiloPascals), yet four patients meeting that criterion had an in-flight oxygen saturation of below 84%. Five others who met the criterion complained of mild breathing difficulties during the flight - even though they remained seated - and eight more experienced symptoms when moving around the cabin.

The Oslo researchers emphasise, though, that the rarefaction was well tolerated by most of the patients, and only one presented severe breathlessness at rest, which was further exacerbated during movement around the cabin.

What about cystic fibrosis patients?

The same questions apply to patients with another very disabling lung disease, cystic fibrosis, who need or wish to travel by air. The news is good for those patients too, according to another study also published in April's ERJ.

A team from Munich University, led by Rainald Fischer, examined lung function, arterial blood gases and respiratory symptoms in 36 cystic fibrosis sufferers under simulated air travel conditions.

Following tests in Munich (approximately 500 metres above sea level), the patients were reviewed a fortnight later after spending seven hours in a laboratory in the Bavarian Alps, at an altitude of 2,650 metres.

As with the COPD patients, arterial oxygen pressure fell significantly at the higher altitude. A third of the subjects were found to have values below 6.6 kPa, which is the minimum value recommended by US and British guidelines for obstructive pulmonary disease sufferers using commercial flights.

Likewise, the German team also found that the fall was greater during physical exertion (on an exercise bicycle), but only one patient complained of feeling unwell during such exertion. So the German team can conclude that cystic fibrosis patients with a ground PaO₂ of more than 8 kPa are perfectly capable of tolerating, for several hours, an altitude equivalent to that found in the cabin of a commercial aircraft. Nevertheless, Fischer and colleagues suggest to include results of spirometry (e.g. FEV₁) in future guidelines, in order to emphasise the role of bronchial obstruction in a hypoxic environment.

Which means there is no automatic reason to forbid such patients the joys of far-flung adventures.

.....European Respiratory Journal (ERJ)



LAUGHTER'S LINK TO HEALTH MAY BE IN THE BLOOD

According to the Bible, "a merry heart doeth good like a medicine." Now, modern science may be validating that Old Testament proverb -- a good laugh may actually help fend off heart attacks and strokes.

"We believe laughing is good for your health," said Michael Miller of the University of Maryland School of Medicine in Baltimore, who led the research. "And we think we have evidence to show why that's the case."

A growing body of other evidence has suggested that negative emotions, particularly depression and stress, can be harmful, making people more prone to illness, more likely to experience suffering from their ailments and less likely to recover as quickly, or at all. One recent study even found sudden emotional shock can trigger life-threatening heart symptoms that many doctors mistake for a classic heart attack. Miller himself, along with his colleagues, had done a study that found people who have a negative reaction to social situations tend to be more prone to heart disease.

But far less has been done to examine whether positive emotions can reduce the risk and complications of illness.

"The focus is always on the negative aspects," he said. "We thought, 'Why not look at the opposite?'"

So they decided to examine the ability of blood vessels to expand -- known as vasodilation. Poor vasodilation can increase the risk of heart attacks and strokes by making the passageways prone to being blocked, cutting off vital blood flow.

The researchers asked 20 healthy men and women to watch clips of two movies -- either the violent opening battle scene in the 1998 film "Saving Private Ryan" or a humorous scene from a comedy, such as the 1996 "Kingpin."

The researchers tested the subjects' vasodilation, before and after the movie, by constricting and releasing an artery in their arms with a blood pressure cuff and then using ultrasound to measure how the blood vessels were functioning.

The researchers discovered striking differences depending on which movie the volunteers had watched. Blood flow was significantly reduced in 14 of the 20 volunteers who saw the stressful film. In contrast, blood flow markedly increased in 19 of the 20 volunteers after watching the funny movie, the researchers reported last week at a meeting of the American College of Cardiology in Orlando.

Overall, blood flow decreased by about 35 percent after experiencing stress but increased 22 percent after laughter -- an improvement equivalent to that produced by a 15- to 30-minute workout.

"It was a pretty dramatic difference," Miller said.

Previous research has indicated that stress hormones may be the primary culprit by which negative emotions harm health. When a person is under stress, the body pumps out hormones such as adrenalin and cortisol. That is designed to prime the body for a fight or a flight, but the hormones can have detrimental effects on the body, including suppressing

the immune system and constricting blood vessels.

Miller and his colleagues hypothesize that laughter may have a contrasting effect, causing the body to release other natural chemicals known as endorphins -- pleasure-producing agents best known for producing the "runner's high" -- that may counteract the effects of stress hormones and cause blood vessels to dilate.

The researchers acknowledge they are still a long way from proving their hypothesis or fully understanding the process, but they say the theory makes sense.

"Conceivably, when you laugh you send a signal to the brain to release these endorphins, and these may activate receptors to release other chemicals, perhaps including nitric oxide, which is known to enhance blood vessel dilation," Miller said.

Laughter may also use similar mechanisms to help boost the immune system and reduce the amount of inflammation in the body, which has been linked to an increased risk of a host of health problems, said Lee Berk, an associate professor of health promotion and education who studies laughter at Loma Linda University in California.

"Laughter is not dissimilar from exercise," Berk said. "It's not going to cure someone from stage three cancer, but in terms of prevention it does make sense. In a sense, we have our own apothecary on our shoulders. Positive emotions such as laughter affect your biology."

Other researchers said the findings add new insight into the interplay of emotions and health.

"This is just the latest example of the importance of the mind-body relationship," said Herbert Benson, who studies emotions and health at Harvard Medical School. "This shows that we have to look not only towards how to reduce stress but how we can elicit positive feelings, as well."

Heart specialists agreed.

"We've known that there's an association between state of mind and cardiovascular health," said Stuart Seides, associate director of cardiology at Washington Hospital Center. "This type of study gives us a peek into the mechanism."

Robert Provine, a University of Maryland psychologist who also studies laughter, was somewhat more cautious. It remains unclear whether the act of laughter was really at work in the movie-watching volunteers, since the researchers did not actually measure how much they laughed, he said.

"The results could be the result of just the act of watching the movie. Or maybe it's just the act of engaging in something interesting that doesn't cause stress," Provine said.

Miller acknowledged he has no way to know for sure that laughing per se produced the effect he measured.

"Is it laughing or just feeling good? We don't know at this time. But clearly laughter is an active process, and probably a good belly laugh will be better than just smiling. I think this active process helps release endorphins," he said.

Provine, despite his doubts about the study, is all for laughter.

"I strongly recommend laughter, based on the fact that a life of laughter is better than one without it," Provine said. "It feels

better when you do it."

Miller envisions a time when doctors might recommend that everyone get 15 to 20 minutes of laughter a day in the same way they recommend at least 30 minutes of daily exercise.

"Wouldn't it be ironic if it turns out that laughing 15 to 20 minutes a day would be added as part of overall good health habits, like running?" Miller asked.

He added that he would not recommend that people replace their daily trips to the gym with a Marx Brothers movie, but they could consider adding activities that make them laugh.

"There's no downside that I know of to laughing," Miller said. "Based on these results, I am happy to recommend laughing to my patients."

.....The Washington Post



DETRIMENTAL EFFECTS OF β -BLOCKERS IN COPD- A CONCERN FOR NONSELECTIVE β -BLOCKERS

Introduction: β -Blockers are known to worsen FEV1 and airway hyperresponsiveness (AHR) in patients with asthma. Both characteristics determine the outcome of COPD, a disease with frequent cardiac comorbidity requiring β -blocker treatment.

Objective: To determine the effects of β -blockers on AHR (provocative concentration of methacholine causing a 20% fall in FEV1 [PC20]), FEV1, and response to formoterol in patients with COPD.

Design: A double-blind, placebo-controlled, randomized, cross-over study.

Patients: Patients with mild-to-moderate irreversible COPD and AHR.

Intervention: Fifteen patients received propranolol (80 mg), metoprolol (100 mg), celiprolol (200 mg), or placebo for 4 days, followed by a washout period 3 days. On day 4 of treatment, FEV1 and PC20 were assessed. Immediately hereafter, formoterol (12 g) was administered and FEV1 was measured for up to 30 min.

Results: PC20 was significantly lower with propranolol and metoprolol treatment than with placebo or celiprolol. FEV1 deteriorated only after propranolol treatment compared with placebo. The fast bronchodilating effect of formoterol was hampered by propranolol but was unaffected by the other β -blockers.

Conclusions: Pulmonary effects did not occur by celiprolol. Only propranolol reduced FEV1 and the bronchodilating effect of formoterol. Both metoprolol and propranolol increased AHR. Thus, different classes of β -blockers have different pulmonary effects. The anticipated beneficial cardiovascular effects of a β -blocker must be weighted against the putative detrimental pulmonary effects, ie, effect on FEV1, AHR, and response to additional β 2-agonists

.....chestjournal.org

REGULAR EXERCISE HELPS PROTECT MUSCLES IN ELDERLY FROM SORENESS, INJURY

Researchers now have the physical evidence to show why it's important for older people to exercise. And it comes with the discovery that, in aging racehorses, regular aerobic workouts decreased the prevalence of muscle damage that can be caused by exertion.

Mammalian skeletal muscle tissue is the same regardless of which species of mammal it is in, said Steven Devor, the study's lead author and an assistant professor of exercise science education at Ohio State University.

He and his colleagues studied the effects of aerobic exercise - in this case, galloping on a treadmill - on small sections of skeletal muscle tissue taken from the limbs of retired racehorses. The findings support a "use-it-or-lose-it" philosophy: After 10 weeks of regular workouts, the horses' muscles showed fewer signs of damage caused by exertion, even after the horses worked out at their maximum capacity.

The results apply to humans and are especially important for older adults, Devor said.

"We have to work at keeping muscle mass as we age, otherwise that mass wastes away," he said. "This weakness leaves a muscle more prone to injury even when it's the least bit exerted. Also, joints are less likely to break if the musculature surrounding them is strong."

"According to these results, aerobic exercise training improves the ability of aging skeletal tissue to resist injury," Devor said.

He and his colleagues report their findings in a recent issue of the *Journal of Applied Physiology*.

Some minor muscle damage is normal after a new or a particularly difficult workout. The pain that often appears a day or two after such exertion is called delayed onset muscle soreness, or DOMS.

"The way to get rid of this kind of pain is to stay physically active," Devor said. "It's ironic, but muscles are most often injured during exercise. But muscles get stronger by repairing this damage."

The current study builds on experiments Devor previously conducted in rats - about 10 years ago, he helped identify the mechanism that causes DOMS.

He was part of a team that found that this damage happens when tiny skeletal muscle segments called sarcomeres - the smallest units of contractile muscle - pull apart as a muscle lengthens.

Contractions that lengthen muscles are particularly damaging to sarcomeres. And lengthening contractions are some of the most common type of contractions humans do - leg muscles contract and lengthen as we sit down or walk and run, and arm muscles contract and lengthen when we lower heavy objects.

The six quarter horses in the current study ranged in age from 23 to 30 years, which made the animals elderly by horse standards. A horse usually lives for about 28 to 32 years. The animals used a treadmill - a long conveyor belt built into the floor of a barn - three times a week for 10 weeks. Each workout

lasted about 20 minutes. The horses got little to no exercise during the three months leading up to the study - that way, the animals would have nearly the same fitness level once the study began.

The researchers increased the speed and resistance of the treadmill during each session, and the animals spent about 15 minutes of each workout exercising at a relatively high intensity. Training protocols were updated every two weeks, based on the animal's performance and its response to the given workload.

The researchers examined muscle tissue taken from each horse's forelimb (triceps brachii) and hindlimb (semimembranosus - a large muscle of the thigh, and also the largest muscle the researchers looked at.) Both muscles are used during walking and galloping. The researchers also removed a small piece of the masseter, a muscle that helps the jaw close during chewing. The masseter served as the control.

The researchers removed small portions of tissue from each muscle before and immediately after the first and last treadmill sessions, and also before and after a session during the eighth week of training.

The treadmill was set at the same speed and resistance during that eighth-week workout as it was during the very first workout, in spite of increases in speed and resistance in the weeks between the two sessions. The researchers wanted to see if nearly two months of exercising would better protect the muscles from damage. During the very last workout, the horses ran at their maximum capacity until they reached exhaustion.

Eight weeks of exercise had a considerable effect on the hindlimb muscle, as the degree of muscle damage had decreased three-fold by then. After the first workout, the researchers noted a five-fold increase in damaged sarcomeres compared to the muscle tissue they examined prior to the workout.

"It wasn't serious damage, but the horses probably felt a little sore afterward," Devor said. "A human would definitely notice some soreness if they hadn't been regularly exercising."

After the workout during week eight, researchers measured only a two-fold increase in the prevalence of sarcomere damage in the hindlimb muscle. They saw the same results two weeks later, after the very last treadmill session.

"The muscle had become more resistant to injury by week eight," Devor said. "And it was stronger, too, since the horses worked as hard as they could during the very last treadmill session."

The triceps, however, showed about the same amount of sarcomere damage - about two-and-a-half times more damage - before and after each of the workouts.

"The bigger muscle responded in a positive way to several weeks' worth of conditioning," Devor said. "It suggests that the protective effect of aerobic training may benefit larger muscles more than smaller ones."

"It also suggests that there was less post-exercise pain after the later workouts," he said, adding that the horses could

run up to 24 percent longer by the end of the study.

As expected, the masseter, or jaw muscle, was unaffected by the workouts.

"The bottom line is that since the horses had kept up with their training program, there were dramatic reductions in the amount of muscle tissue injuries the animals had by the end of the study," Devor said.

"This suggests that, in older adults, regular exercise may help prevent injuries associated with age-related impairments such as reduced muscle strength, impaired mobility and a tendency to fall."

Devor conducted the study with Ohio State colleagues Kenneth Hinchcliff, Mamoru Yamaguchi and Laurie Beard, all with the college of veterinary medicine, and Chad Markert, formerly with Ohio State's sport and exercise science program. The work was a portion of the doctoral dissertation of Jeong-su Kim, who is presently at the University of Alabama, Birmingham.

The study was supported by the Equine Research Fund from the College of Veterinary Medicine's Council for Research at Ohio State.

.....Ohio State University

SCIENTISTS GROW ADULT STEM CELLS FROM NOSE

With the help of the Catholic Church, Australian researchers have successfully grown adult stem cells harvested from the human nose, avoiding the ethical and legal problems associated with embryonic stem cells.

Australia bans creating human embryos to harvest stem cells but scientists may use embryos left over from IVF (in-vitro fertility) treatment. Stems cells harvested through other means, such as from the nose, is legal.

Head researcher Alan Mackay-Sim of Griffith University said the adult stem cells taken from inside the nose could potentially be used to grow nerve, heart, liver, kidney and muscle cells.

"We have got an adult stem cell which is accessible in everybody and we can grow lots of these cells and turn them into many other cell types," Mackay-Sim told Reuters.

"Apart from neural and brain cells, they look like they can turn into blood cells, heart muscle and to skeletal muscle," he said in an interview.

Scientists believe stem cell research could eventually lead to cures for a range of serious ailments, including Parkinson's disease and spinal cord injuries.

Not need embryonic cells?

The Catholic Church, which views the use of embryonic stem cells as a form of destruction of human life, helped fund the research through a A\$50,000 (\$39,500) grant, which was approved by Sydney's Catholic Archbishop George Pell.

"The significance of this is manifold. This represents a significant advance and I think this will bring a great blessing for people," Pell told Reuters on Thursday.

Australian Health Minister Tony Abbott said the new nose adult stem cells avert the ethical problems surrounding embryonic stem cell research.

"It seems at least on the basis of this research that we may well be able to obtain multi-potent stem cells from adults and that we don't need to use embryos to obtain these important cells," Abbott told reporters.

.....msnbc

STUDY: SPECIALIZED PROTEIN MAY PROTECT LUNGS FROM DISEASE

A special protein on the surface of cells once regarded as a troublemaker in the lungs actually plays an unexpected role as pulmonary protector—mitigating the damage caused by chronic lung illnesses such as chronic obstructive pulmonary disease, or COPD. So says a study published in January in the Journal of Clinical Investigation/.

COPD describes a category of diseases that includes emphysema, chronic bronchitis, and in some cases, asthma. It's a leading cause of death, illness, and disability in the United States. Smoking is the leading cause of the disease, but other etiologies include exposure to air pollutants, respiratory infections, and certain genetic factors. People with COPD can develop pulmonary hypertension as a complication, according to doctors.

.....in the news/archive

SMOKELESS TOBACCO

Some people believe that using chewing tobacco or snuff is safer than smoking. There's no burning cigarette at your mouth or cloud of smoke--just a "dip" of finely-ground tobacco (snuff) placed between the gum and cheek or a "chew." In 1986, the U.S. Surgeon General concluded that the use of smokeless tobacco is not a safe substitute for smoking cigarettes or cigars, as these products can cause various cancers and noncancerous oral conditions, and can lead to nicotine addiction. Some of these conditions are listed below.

- Cancer of the mouth and pharynx
- Leukoplakia (white sores in the mouth that can lead to cancer)
- Gum recession, or peeling back of gums
- Bone loss around the teeth
- Abrasion of teeth
- Bad breath

The most serious health effect of smokeless tobacco is an increased risk of cancer of the mouth and pharynx. Oral cancer occurs several times more frequently among snuff dippers compared with non-tobacco users. The risk of cancer of the cheek and gums may increase nearly 50-fold among long-term snuff users. Leukoplakia is a white sore or patch in the mouth that can become cancerous.

Studies have consistently found high rates of leukoplakia at the place in the mouth where users place the "chew." One study found that almost 3/4 of daily users of moist snuff, and chewing tobacco had non-cancerous or pre-cancerous lesions (sores) in the mouth. The longer you use smokeless tobacco, the more likely you are to have leukoplakia. Studies have shown that about 7% to 27% of regular smokeless tobacco

users have gum recession and bone loss around the teeth. The surface of the tooth root may be exposed where gums have drawn back. Tobacco can irritate or destroy the tissue. Smokeless tobacco may also play a role in cardiovascular disease and high blood pressure. Nicotine enters the users' bloodstream through the lining of the mouth and/or the gastrointestinal tract. Nicotine causes your heart to beat faster and your blood pressure to go up.

.....Edna, CO



WHEN THE BRAIN, NOT THE EARS, GOES HARD OF HEARING

Problems with the brain - not just the ears - cause a great deal of the age-related hearing loss in older people. Researchers are finding more and more subtle problems in the way our brain processes information as we age, so much so that an older person whose ears are in fine shape may have trouble hearing because of an aging brain.

In addition to earlier findings of a specific type of "timing" problem that limits our hearing as we age, the group is now finding increasing evidence of a "feedback" problem in the brain that diminishes our ability to hear. This week at the annual meeting of the Association for Research in Otolaryngology in New Orleans, researchers are discussing the results so far of the hunt for genes that play a role in the aging brain's plummeting ability to organize the information our ears record.

"Traditionally, scientists studying hearing problems started looking at the ear," says Robert D. Frisina, Ph.D., professor of Otolaryngology at the University of Rochester Medical Center and an adjunct professor at Rochester Institute of Technology. "But we are finding patients with normal ears who still have trouble understanding a conversation. There are many people who have good inner ears who just don't hear well. That's because their brains are aging."

The findings come from researchers at the International Center for Hearing and Speech Research (ICHSR), an NIH-funded group of scientists in Rochester, N.Y., that is recognized as a leader in research in age-related hearing loss. The center includes scientists from the National Technical Institute for the Deaf at Rochester Institute of Technology and neuroscientists from the University of Rochester.

Sophisticated tests that measure how well the brain processes information that the ear detects are helping scientists sort out the findings. Normally the brain does a masterful job of filtering, sorting, and making sense of the information that flows through our senses every day - the colors and shapes we see, the textures of the objects we feel, the sounds ranging from the cooing of children to the screech of tires on pavement that we hear morning to night. Our brain stem sorts the bluster of information in ways that make it easy for us to carry on our lives.

Oftentimes it's this ability of the brain, not hearing itself, that is diminished in older people who say they don't "hear" well. The loss is detected most markedly in tests that measure a person's ability to hear a sentence amid a background of babble,

much as one might hear at a party while trying to speak to an individual nearby. The recently discovered feedback problem is central to this problem, says Frisina. His team has found that in mice, the brain problems usually precede actual hearing difficulties, and that early problems with the brain's feedback system make the ears more vulnerable to damage - without the brain's filtering capacity, the ears are more likely to be exposed to damaging noise.

The brain's ability to provide proper feedback to the ear, by filtering out unwanted and unnecessary information, declines beginning in our 40s and 50s, Frisina says. Without that filter, a person is quickly overcome by a barrage of information that is difficult to sort. It's a little bit like a computer user who would be overwhelmed by input if the spam filter suddenly failed and all sorts of bogus messages started streaming into the "important documents" folder. When it comes to hearing, the increase in sensory information making its way to the brain actually hurts the person's ability to hear well.

"The number-one hearing complaint among the elderly is that they have trouble hearing speech because of background noise. Someone might hear fine in a quiet environment like their home, but when they go to a restaurant or a meeting or a party, it sounds like chaos to them," Frisina says. "That's partly because the feedback system is failing."

To get to the root of the feedback problem, Frisina's neuroscience team is investigating the possible role of a breakdown in calcium regulation in the brain stem, throwing askew the way nerve cells talk to each other and possibly resulting in a toxic buildup of calcium in some brain cells.

Recently the team used gene-chip activity to chart the activity of more than 22,000 genes in mice, comparing activity levels of genes in young mice and their older counterparts. While dozens of genes in humans and mice are known to contribute to congenital deafness, none has been linked to age-related hearing loss in humans. The latest studies offer several promising leads in genes that affect the functioning of brain chemicals like glutamate and GABA, important neurotransmitters that allow nerve cells in the ear and brain to talk to each other.

The difficulties can isolate people from friends and family, beginning when people first have difficulty with age-related hearing loss in their 50s and 60s. "This problem is especially tragic because just when people have time to spend with their children and grandchildren, they can't understand what is going on," says Frisina. "They're losing something they had. People respond to this isolation by either clamming up or aggressively dominating conversation." The estrangement can be severe and can even result in depression.

While there is no cure for age-related hearing loss, or presbycusis, some simple steps can lessen its effects. Speaking loudly is an instinctual reaction when talking to a hearing-impaired person, but that won't help when talking to someone with age-related hearing loss. "Speaking slightly slower than usual will help," says Frisina, "as if you were talking to someone who speaks a foreign language.

"Many older people are actually especially sensitive to loud sounds, so the worst thing you can do is raise your voice. What you need to do is look at the person and speak slowly and clearly. Speaking loudly is like turning up the volume on a cheap stereo - it's only going to distort your speech and add to the confusion."

Six years ago the same team of researchers reported finding a closely related brain "timing" problem where people are not as adept as they once were at detecting slight gaps in speech. While the average person can hear sound gaps of about 2 milliseconds apart, someone with a timing problem may be anywhere from 2 to 50 times worse detecting such gaps, which are crucial - though unconscious - for properly hearing consonants and vowels.

"To a person with a timing problem, conversation sounds like everything is spoken through a drainpipe," says James Ison, professor of brain and cognitive science. "One sound leads into the next, smearing words together." For instance, most people know that in the English alphabet, the letter that follows "K" is "L," not "Elamenopee." To a person with a timing problem, short pauses are imperceptible, blurring words together. The problem has the most effect on a listener's ability to hear the first consonant of a word - cat, hat, bat, fat, and rat may sound remarkably similar, for instance.

While most people gradually lose the ability to hear high frequencies as they age, the feedback and timing problems account for many of their complaints about hearing, Frisina says.

"These problems with the aging brain, which nearly everyone experiences, are on top of problems with our ears, which you may or may not have as you get older. For many people, even if they can still hear sounds as they get older, they still lose the ability to hear and understand speech, because of these brain problems," Frisina says.

Frisina and Ison are part of a center that brings together applied research on hearing at RIT with basic neuroscience and aging research from the University of Rochester. Frisina is the associate director of the center; the director is his father, D. Robert Frisina, founding director of NTID and an adjunct professor at the University. Other faculty members at the center include William O'Neill, associate professor of neurobiology and anatomy, and Joseph Walton, associate professor of otolaryngology, both at the University. The center is currently funded by a five-year, \$6.3 million grant from the National Institutes of Health.

.....University of Rochester Medical Center

RETIREMENT COMMUNITIES NEED TO DO MORE TO HELP RESIDENTS COPE WITH LONELINESS AND DEPRESSION - CASE STUDY

Researcher looks at personal and situational characteristics associated with loneliness and depression

As the USA's population ages, greater numbers of people are moving into assisted living and other retirement communities. While these facilities offer many advantages to

the elderly, a recent research article concludes that they should consider doing more to alleviate the loneliness and depression that their residents often experience.

In an article titled "Loneliness and Depression in Independent Living Retirement Communities: Risk and Resilience Factors," the authors write, "With the number of older adults steadily increasing, greater attention must be given to the factors that contribute to loneliness, social isolation and depression among those who live independently or as members of a long-term care or retirement community."

Kathryn B. Adams, instructor at Case Western Reserve University's Mandel School of Applied Social Sciences and a faculty research associate at the University Memory and Aging Center, was first author on the article, which appears in *Aging & Mental Health*.

The authors surveyed residents in the independent living sections of two retirement communities to determine what personal and situational characteristics are associated with loneliness and depression, what proportion of people who are lonely are also depressed and how loneliness and depression differ. They find that loneliness is a strong risk factor for depression among residents of the institutions, and that loneliness is associated with factors such as the size of a social network, grieving the loss of a loved one and having fewer visits from friends.

Depression is also associated with grieving, but in contrast, is more closely associated with lack of participation in activities and having more chronic health conditions.

Given these differences, the authors say, gerontologists need to recognize the differences between loneliness and depression and develop methods of helping their clients cope with each. For example, retirement communities might develop specific strategies to encourage residents to maintain relationships with outside friends and family, or to send reminder notes to those outside to encourage them to call or visit. They should also consider forming support groups for those most likely to experience loneliness, such as the recently bereaved, those who have recently moved to the facility or individuals who are shy, or lack social skills.

.....Case Western Reserve University

PROTEIN: MOVING CLOSER TO CENTER STAGE

Until recently, protein got little attention. Like a quiet child in a classroom of rowdies, it was often overshadowed by fat, carbohydrates, and vitamins. That's changing. Lately there's been an explosion of interest in protein, largely triggered by high-protein diets for weight loss.

Surprisingly little is known about protein and health. We know that adults need a minimum of 1 gram of protein for every kilogram of body weight per day to keep from slowly breaking down their own tissues. That's about 9 grams of protein for every 20 pounds. Beyond that, there's relatively little solid information on the ideal amount of protein in the diet, a healthy target for calories contributed by protein, or the best kinds of protein.

Around the world, millions of people don't get enough

protein. Protein malnutrition leads to the condition known as kwashiorkor. Lack of protein can cause growth failure, loss of muscle mass, decreased immunity, weakening of the heart and respiratory system, and death.

.....harvard.edu

TIPS TO AVOID FALLS AT HOME

When it comes to household safety, it pays to be proactive. In the United States, about 30,000 people die each year as a result of injuries at home. Falls are responsible for about one-third of home injury fatalities. Older adults are often more susceptible to falling because of a decline in mobility and balance.

The March issue of Mayo Clinic Women's HealthSource offers tips to minimize chances of falling at home.

- Light your way. Keep all areas, especially hallways and stairways, well lit. Use nightlights and have a flashlight handy in case of power outages.
- Keep pathways clear. Arrange furniture to allow for easy movement. Remove boxes, newspapers, cords, baskets and general clutter from high-traffic areas. Keep outdoor steps and walkways in good repair.
- Secure rugs and flooring. Secure loose rugs and carpets with tacks or a slip-resistant backing. Remove small throw rugs. Repair frayed carpet and loose floorboards.
- Safeguard stairways. Make sure all stairways have sturdy railings and that steps have a nonskid surface.
- Enhance bathroom safety. Install grab bars in your shower or tub and near your toilet. Use nonskid mats in the shower or tub.
- Keep necessities handy. Store clothing, dishes, food and other everyday items within easy reach.

.....Mayo Clinic Women's HealthSource

SALTED AWAY

While weight-conscious consumers often obsess about fat and carbohydrates, a lawsuit newly filed by the Center for Science in the Public Interest (CSPI) puts another popular ingredient in the spotlight: salt.

CSPI is suing the Food and Drug Administration to put more muscle into salt regulation. The lawsuit would change the status of salt from generally recognized as safe (GRAS) to an official food ingredient that would subject it to much stiffer regulation by the FDA. In issuing a report last week on the health dangers of salt, the consumer advocacy group noted that salt consumption has slowly risen over the past 30 years and, by its estimate, accounts for nearly 150,000 premature deaths annually in the United States. Most of those deaths are linked to complications of high blood pressure, or hypertension.

"Americans spend more than \$15 billion each year on drugs to treat hypertension, yet the government spends almost nothing to reduce salt consumption," said CSPI executive director Michael F. Jacobson, author of the report.

The latest national nutritional surveys suggest that Americans consume about a third more than the 2,300 milligrams per day limit advised by the federal government's

2005 Dietary Guidelines for adults up to age 45. (Those older than 45, as well as African Americans and people who have already been diagnosed with elevated blood pressure, are advised to consume no more than 1,500 milligrams of sodium daily. That's the amount found in about a cup and a half of many canned soups.)

And, no, removing the salt shaker from the dining table likely won't be enough. An expert committee that helped develop the revised guidelines reported in August that as much as 80 percent of sodium intake comes from processed and restaurant foods.

Even so, the food industry points to major improvements and the growing number of reduced-sodium and no-salt-added products. "Over the past 40 years, there has been a dramatic reduction in the use of sodium in processed foods," said Robert Earl, senior director of nutrition policy at the National Food Processors Association, an industry group. "Various new techniques in canning and freezing have reduced the amount of sodium needed" to extend shelf life of foods.

But those reduced-sodium products must appeal to consumers, which "is not a simple task," as Earl notes.

"There's a tradeoff here," concedes James O. Hill, director of the Clinical Nutrition Research Unit at the University of Colorado Health Sciences Center in Denver, noting that salt is important for taste. "I know where CSPI is coming from. . . . But salt is used for a reason, and it plays a role in allowing consumers to like products. So I'm a big fan of getting the food industry to gradually reduce sodium over time so that the consumer doesn't notice it."

In the meantime, here's what you can do to reduce your sodium intake:

Don't bother doing the milligram math. The answers are already in plain sight on nutrition food labels. Pay attention to percent daily value of sodium. "The rule of thumb is to choose foods that have less than 5 percent of the daily value for sodium" per serving, said Eva Obarzanek, a research nutritionist at the National Heart, Lung, and Blood Institute (NHLBI).

Eat more fruit and vegetables. Studies suggest that these potassium-rich foods can help counter the effects of high sodium intake.

DASH. No, not the 40-yard kind, but the Dietary Approaches to Stop Hypertension, an eating plan that has been proven to lower blood pressure as much as some medications. DASH is low in total fat, saturated fat and cholesterol, and rich in fruit, vegetables and low-fat dairy products. Get a free copy at www.nhlbi.nih.gov/health/public/heart/hbp/dash/ or from the NHLBI Health Information Center, P.O. Box 30105, Bethesda, MD 20824-0105, or by calling 301-592-8573.

Cut back on sodium gradually. Since the taste for salt develops over time, "it's not a good idea to go cold turkey," said Alice Lichtenstein, professor of nutrition at Tufts University and chairwoman of the American Heart Association's Nutrition Committee. "Introduce a few lower-sodium products, substitute herbs for salt and just begin ratcheting down. That's what really works."

Choose reduced-sodium or no-salt-added foods. Harvard University's Meir Stampfer, a professor of nutrition and epidemiology, snacks on unsalted peanuts and skips sodium-loaded pretzels and chips. Lichtenstein uses low-sodium chicken broth to whip up homemade soups in minutes for her family. Or just swap "natural" peanut butter with no added salt for more-processed brands, which have 6 percent of the daily value per two tablespoons.

Beware of hidden sodium. Besides restaurant fare and canned food, leading sources of sodium include many of the items that the new guidelines suggest should be consumed in greater quantities: whole-grain bread, crackers and ready-to-eat cereals, and dairy foods, especially cheese.

Other high sodium sources: frozen food with sauces; macaroni and cheese with flavor or seasoning packets; salad dressings; condiments, snack foods, luncheon meats, hot dogs and processed tomato products, from juice and ketchup to salsa and sauce. Smart low-sodium choices include: oatmeal, plain shredded wheat, whole-wheat matzoh, brown rice as well as nonfat milk and yogurt. Use vinegar and oil instead of prepared salad dressings. Rinse canned beans and other vegetables to reduce sodium. Choose herbs and spices for flavoring instead of . . . well, you know. •

.....The Washington Post

WHAT'S THE SKINNY ON THE NEW DIET GUIDELINES?

Some say food restrictions, exercise goals aren't realistic

Some people say that the latest Dietary Guidelines for Americans from the U.S. Department of Agriculture ask too much. Yet these guidelines explain what we want to know: How we can avoid nutritional deficiencies, promote our health and decrease the risk of chronic diseases like cancer and heart disease.

Since the majority of our population is overweight and lifestyle-related diseases take a larger toll in the U.S. than in many other Western nations, we need to make significant changes in our eating and exercise habits to meet the new guidelines. But do we have to make ourselves miserable, as some claim?

Some people who have tried adjusting their diets to the new guidelines complain of hunger. But hunger usually results from only partially following the guidelines.

If you cut back on meat portions and nutrition-poor desserts and snacks and forget to eat more hunger-satisfying fruits, vegetables, whole grains and beans, hunger is a possible consequence. When people fully implement the whole new style of eating, their hunger tends to be completely satisfied.

Trying to eat more vegetables and fruits, however, is a formidable barrier for many people.

Don't wait for dinner

After more than ten years of hearing the "five-a-day" message, the average consumption of produce is no closer to that target. At the same time, research has revealed important benefits to virtually every aspect of health from the substances in these plant foods. The new guidelines set a target to aim for:

7 to 10 servings a day for the average adult.

People who wait until dinner to eat any fruits and vegetables will almost surely fail to meet this target. An easy way to succeed is to adopt habits that make vegetables and fruits part of every meal and snack.

For the average American, that will mean eating two more pieces of fruit and one more cup of vegetables each day. By choosing fruit instead of chips or cookies for a snack or dessert, including fruit at breakfast, and adding a vegetable at lunch, the typical person can fulfill the new recommendations.

Trying to eat three or more servings of whole grains each day may seem like another major hurdle for some people, especially since the average American now gets only one. But the goal is to replace refined grains with whole-grain products and decrease the consumption of refined grains by two or three servings.

Don't try to eat whole grains on top of what you already eat. Good replacements are choosing whole-grain cereals, using whole-grain breads for sandwiches, ordering brown rice or whole wheat pasta, or purchasing whole-grain crackers. For a snack instead of cookies, try whole-grain cereal or popcorn. Instead of a doughnut for breakfast, grab a whole-wheat English muffin.

Complete change of habits

Some people mistakenly think that the guidelines require complex calculations. You can eat healthfully without any calculations and still meet the guidelines.

Simply follow the New American Plate eating style advocated by the American Institute for Cancer Research. Start by limiting animal protein to one-third of your plate or less at each meal. Fill the rest of your plate with plant foods: vegetables, fruits, whole grains and beans. Your plate should have at least a cup to a cup-and-a-half of vegetables and fruits. If you always opt for low-fat meat and dairy choices and low-sugar drinks and snacks, you won't have to calculate how to make up for less-nutritious choices.

And if you eat portions just large enough to satisfy your hunger, you won't have to count calories.

The new guidelines ask a lot of us: Eating for good health and disease prevention may be best accomplished with a complete change of habits. But we should be happy to embrace this change. The typical food choices of an American, the overwhelming portions and sedentary lifestyles are keeping us from living the healthy lives we could have.

.....Nutrition Notes

NUTRITION THERAPY FROM THE EXPERTS FOR MORE PEOPLE AT NO ADDITIONAL COST, USA *American Dietetic Association Supports Medicare Legislation Introduced by Sen Craig -*

The American Dietetic Association said Wednesday, March 16, that it strongly supports legislation introduced in Congress by U.S. Sen. Larry Craig (R-Idaho) to offer more Americans access to potentially life-saving nutrition care provided by registered dietitians, at no additional cost to

The legislation would give the Centers for Medicare and Medicaid Services the authority to cover medical nutrition therapy for any disease or condition when scientific evidence shows it would be cost-effective in outpatient settings. Currently, Medicare reimbursement is available to beneficiaries with diabetes and kidney disease, and Congress must approve any expansion of Medicare benefits.

“By allowing CMS to review the science behind recommendations, Congress would no longer have to act each and every time MNT is proven necessary and reasonable,” said registered dietitian and ADA President Susan H. Laramée.

The legislation would not require expansion of Medicare benefits, but would allow CMS to review the scientific evidence and apply its new authority if it determines coverage is necessary and reasonable. “That standard would help ensure this is a budget-neutral approach and that Medicare spending will not rise, even with broader availability of MNT services,” Laramée said.

Medicare beneficiaries with such conditions as obesity, hypertension, cancer and HIV/AIDS can benefit from medical nutrition therapy provided by RDs, Laramée said. “Evidence shows the value of nutrition interventions by themselves, or in concert with other treatments and therapies provided by the health-care team in each of these disorders, conditions or diseases.”

MNT could also be used as a preventive strategy, addressing diabetes, hypertension and dyslipidemia in their early stages, Laramée said.

Co-sponsors with Craig of the Medicare Medical Nutrition Therapy Act of 2005 are Sens. Jeff Bingaman (D-N.M.), Richard Burr (R-N.C.), Susan Collins (R-Maine), Richard Durbin (D-Ill.) and Olympia Snowe (R-Maine). U.S. Rep. Fred Upton (R-Mich.) is expected to introduce a House version soon. ADA and its members urge Senators and members of Congress to join in co-sponsoring the bill.

.....The American Dietetic Association

HOW TO HANDLE ALL THE UNREIMBURSED COSTS ASSOCIATED WITH A TRANSPLANT? MANY GET HELP FROM THE NATIONAL TRANSPLANT ASSISTANCE FUND....

What is the National Transplant Assistance Fund?

National Transplant Assistance Fund (NTAF) is a not-for-profit resource serving all organ and tissue transplant patients, their families and the professional community who treats them. (NTAF also provides services for patients with catastrophic injury). They provide fund-raising expertise for patients raising money for uninsured medically related expenses and educational information regarding organ/tissue donation.

Established in 1983 by medical professionals, National Transplant Assistance Fund is a private, non-profit 501(c)3 charitable organization. NTAF assists patients in establishing restricted fund accounts allowing contributions to these transplant funds to be tax-deductible to the extent of the law.

Acting as a trustee for locally raised funds, NTAF assures fiscal accountability and appropriate distribution of those funds for medically associated expenses. NTAF retains only four cents of every dollar raised to help defray general office costs and to implement patient services and educational programs.

.....<http://www.transplantfund.org/>

INTRANASAL DELIVERY

With the advances in biotech and rDNA, the drug delivery of new molecules have become a challenging task for pharma companies, say Vivek Ranjan Sinha, Jayant Rajaram Bhinge and Aman Trehan* in the concluding part of the article

Aerosol systems such as metered dose inhaler, dry powder inhalers and liquid jet or ultrasonic nebulizers are used for delivery of bronchodilators and corticosteroids for asthma or COPD (chronic obstructive pulmonary disease). But recently there has been a substantial interest in using the alveolar surface as a portal to the systemic circulation for macromolecules such as proteins and peptides.

Intranasal delivery provides safety, efficacy and greater bioavailability. Various nasal sprays, nasal solutions, nasal inhalers, aerosol preparation are in market such as calcitonin (Miacalcin nasal spray, Novartis), butorphanol (Stadol NS nasal spray, Bristol Myers Squibb Co USA), dihydroergotamine (Migranal nasal spray, Novartis Inc), cromolyn sodium (Nasalcrom nasal solution, Fisons Pharmaceuticals), budesonide (rhinocort nasal inhaler, Astra), etc. Various other innovative technologies are coming up to deliver proteins, peptides and other drugs.

DirectHaler nasal

DirectHaler Nasal is an innovative, new and worldwide-patented dry powder nasal delivery device. The device applies advanced principles to activate the anatomy of the patient for increased nasal delivery efficiency and patient acceptability. DirectHaler Nasal is intuitively easy-to-use, which will minimise the instruction task — and ease any checking of the patient delivery technique.

.....expresspharmapulse.com

PREVENTION OF BRONCHOSPASM - FDA APPROVES SEPRACOR'S XOPENEX HFA(TM)

METERED-DOSE INHALER

Sepracor Inc today announced that the U.S. Food and Drug Administration (FDA) has approved its New Drug Application for XOPENEX HFA(TM) (levalbuterol tartrate) Inhalation Aerosol, a hydrofluoroalkane (HFA) metered- dose inhaler (MDI) for the treatment or prevention of bronchospasm in adults, adolescents and children 4 years of age and older with reversible obstructive airway disease. Reversible obstructive airway disease includes respiratory disorders such as asthma and chronic obstructive pulmonary disease (COPD).

Sepracor's XOPENEX MDI utilizes state-of-the-art HFA technology and does not contain a chlorofluorocarbon (CFC) propellant. MDIs are portable, hand-held devices consisting of

a pressurized canister containing medication and a mouthpiece through which the medicine is inhaled. Each canister provides 200 actuations (or inhalations). Sepracor and 3M Drug Delivery Systems Division are collaborating under an agreement that includes scale-up, manufacturing and supply of the XOPENEX HFA. The collaboration combines Sepracor's short-acting beta-agonist, XOPENEX, and 3M's expertise in manufacturing MDIs, the device most commonly used by patients for the treatment of asthma and COPD.

Sepracor currently markets XOPENEX Inhalation Solution through the company's 1,250-person sales force. XOPENEX Inhalation Solution is a short-acting bronchodilator indicated for the treatment or prevention of bronchospasm in patients 6 years of age and older with reversible obstructive airway disease. XOPENEX Inhalation Solution is available for use in a nebulizer at 0.31 mg and 0.63 mg dosage strengths for treatment of children 6 to 11 years old, and in 0.63 mg and 1.25 mg dosage strengths for patients 12 years of age and older. XOPENEX Inhalation Solution revenues for the twelve months ended December 31, 2004 were approximately \$319.8 million.

Approximately 90 percent of the short-acting beta-agonist inhalers sold in 2004 contained CFC propellants, according to IMS Health information. Under provisions in the Montreal Protocol on Substances that Deplete the Ozone Layer, an international agreement that requires the phase-out of substances that deplete the ozone layer, MDIs containing CFC propellants would be subject to eventual removal from the marketplace. In June 2004, the FDA issued a proposed rule for the removal of the essential use exemption for albuterol, which currently permits the use of CFC-containing albuterol inhalers despite environmental concerns. Removal of this essential use exemption would prevent albuterol products containing CFC propellants, including MDIs, from being marketed in the U.S.

Currently, the U.S. short-acting bronchodilator MDI market potential at branded prices, assuming parity pricing to branded PROVENTIL(R) HFA, is approximately \$1.8 billion.

Asthma is a chronic lung disorder characterized by reversible airway obstruction and the pathologic finding of airway inflammation. According to the 2002 National Health Interview Survey conducted by the Centers for Disease Control and Prevention, nearly 31 million Americans have been diagnosed with asthma in their lifetime. It is the most common childhood illness and affects nearly 9 million children in the U.S. under the age of 18. Short-acting beta-agonists are the most-prescribed asthma therapy among primary care physicians and pediatricians in the U.S., according to IMS Health information.

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