



A bi-monthly publication by the Department of Pulmonary Rehabilitation

SAVE THE DATE

Seton Pulmonary Rehabilitation 21st Holiday Party at the Basque Cultural Center is Thursday December 15th! Details will be mailed out soon. For questions or information, please call Chris Garvey at 650-991-6776 or email chrisgarvey@dochs.org.



Preventing Exacerbations of COPD

Severe, acute exacerbations of chronic obstructive pulmonary disease (acute, severe worsening of respiratory symptoms requiring a change in treatment) have potentially very serious consequences for persons with COPD, including worsening survival. The negative impact is potentially far greater than a heart attack.

Exacerbations of COPD are also associated with a rapid decline in function and quality of life.

Medications are available that may reduce these events, including inhaled steroids and long-acting bronchodilators such as tiotropium (Spiriva) salmeterol (Serevent, found in Advair) and formoterol (Foradil, found in Symbicort). The following study may open the door to an important strategy for limiting exacerbations.

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Azithromycin for Prevention of Exacerbations of COPD

was recently published in the *New England Journal of Medicine* by R. Albert, R. Casaburi, S. Lazarus, J. Porsasz, P. Woodruff and others. The study evaluated 1,142 persons with COPD at 17 centers who either received the antibiotic azithromycin 250mg daily or placebo for a year.

The participants were considered at risk for an exacerbation. The study found that those receiving the antibiotic had a significant decrease in acute exacerbations, nearly doubled the length of time to the first acute exacerbation, and experienced an improved quality of life. There was a small decrease in hearing in the treatment group compared to those taking placebo. Macrolide antibiotics like azithromycin not only have antibacterial properties but also impact immune function and have anti-inflammatory effects. The long-term effect of the treatment on bacterial resistance is unknown.

Impact of Inhaled Steroids on Pneumonia in COPD

A study by Dennis Chen and colleagues evaluated 15,768 persons with COPD hospitalized for pneumonia and receiving pulmonary medications before hospitalization. Data was analyzed from the national Veterans Affairs database. Over one half used inhaled steroids, such as fluticasone (Flovent, found in Advair), budesonide (Pulmicort, found in Symbicort), mometasone (Asmanex), beclomethasone (Q-Var), etc. There was a decrease in mortality, and need for mechanical ventilation was found in those using inhaled steroids.



Risk Factors for Early, Severe COPD

Cigarette smoking is the major risk factor for development of COPD. A recent study in the *Journal of Respiratory and Critical Care Medicine* by Foreman and colleagues evaluated possible risk factors associated with severe, early onset COPD from the Genetic Epidemiology of COPD (COPDGene) study. The study addresses both genetic and environmental risk factors for COPD. Severe, early onset COPD was defined as a forced expiratory volume in one second or FEV1 of under 50 percent (a measure of severe COPD) in those under 50 years old. This was compared to severe COPD in those over 64 years old with similar lung function. Those with severe, early onset COPD were more commonly female, had a maternal history of COPD, maternal smoking, African-American race and lower amount of smoking. Previous research has shown that maternal smoking during pregnancy is a risk factor for COPD that particularly impacts daughters.



Making Eating Right Easier



Eating right and keeping weight in a healthy range is important for persons with breathing problems. When fatigue or low energy gets in the way of eating right, strategies are available to make getting nutrients easier. Choose foods that are easy to prepare. One way to save time and energy is to mix, cook, serve and store foods in the same container. Make extra servings and freeze them for future use. Gas-producing foods or large meals can cause breathlessness. Avoid eating foods that cause gas or bloating such as beans and cabbage. Eat smaller portions more frequently to reduce shortness of breath during and after eating. Focus on protein from chicken or fish, fresh fruits and vegetables, and whole grains. If you need to gain weight, try blending one cup of whole milk, a cup of your favorite ice cream and a package of Carnation Instant Breakfast in a blender. One serving provides more than 500 calories.

Are All Sweets and Fats Created Equal?

High fructose corn syrup (HFCS) consumption has been found in a 2010 animal study to increase weight gain in greater amounts than equal calories from sucrose. In addition to excess weight gain, the weight gain from HFCS was primarily in the form of abdominal fat (from N. Avena and colleagues in *Pharmacology, Biochemistry and Behavior* 2010). Macronutrients such as those in a Mediterranean diet are associated with improved weight status. A Mediterranean diet is rich in fruits, vegetables, whole grains, fish, and nuts. Olive oil is the main source of fat in the Mediterranean diet.



Got chocolate? From the *New York Times* science section 8/30/11

An analysis of more than 100,000 persons found that chocolate consumption was associated with lower risk of heart disorders including stroke, heart disease, and high blood pressure. The report was published in the *British Medical Journal* published 8/29/11 by Oscar Franco and colleagues. The lead author warned that chocolate should be eaten in moderation and if consumed in large quantities, the benefits would disappear.

Got Stress?

Here are some quick things you can do to reduce tension.

- **Laugh:** Watch a funny show, listen to a comedy tape or get together with friends who like to have fun. Laughing improves circulation and reduces stress levels. Even thinking about funny things can lower your stress hormone levels.
- **Reducing clutter** lowers stress in many ways. Open space and order can be very calming. It also makes it easier to find things. Start by tackling one small area at a time.
- **Sing:** Try singing along with the radio at home or in the car. Don't worry about how you sound – just let it go. Singing can make you happier and may help breathing control.
- **Exercise** is one of the most important ways to ease stress. It helps increase natural chemicals called endorphins that make you feel good. It can also distract you from feeling anxious.
- **Inhale** natural herb fragrances such as lavender or rosemary from plants to lower stress hormone levels.
- Use **slow controlled breathing** such as pursed lip breathing to improve oxygen levels and calm you.

Pulmonary Hypertension

Pulmonary Hypertension (PH) occurs when blood pressure in the arteries that transport blood from the heart to the lungs is excessively high. Many are familiar with hypertension (technically arterial or systemic hypertension) which involves high pressures in the left ventricle of the heart. The left ventricle pumps blood throughout the body, and is part of a relatively high-pressure system that provides blood flow to every part of the body. The right ventricle of the heart normally works at a much lower pressure, sending blood to the lungs to absorb oxygen that is inhaled during breathing. This oxygen-rich blood then flows back to the heart to be sent to the entire body for nourishment.

When your blood pressure is checked, the reading is ideally 120/80 mm Hg or less. This reflects the force needed to send circulating blood through the body and represents

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pressures in the left side of the heart. Normal right ventricular pressure is approximately 25/15 mm Hg or 20 percent of the left heart pressures. Unlike getting your blood pressure checked, no simple tests are available to check right heart pressure. General information may be available from an echocardiogram or less commonly, a chest X-ray or chest CAT scan. An accurate diagnosis of pulmonary hypertension requires a right heart catheterization where right pressures are measured directly in a cardiac cath laboratory setting. Signs and symptoms of PH include breathlessness, dizziness, fatigue, chest pain, cough and ankle swelling. These symptoms resemble many other disorders of the lungs and/or heart and therefore require physician evaluation. One factor that can increase the risk of PH is chronically low blood oxygen levels. Persons with low oxygen levels can benefit from using oxygen to manage this deficit. Medications may be used to manage PH by improving heart function. Over the past several years, newer medications have become available to control and manage PH to improve function, breathlessness and survival in moderate to severe disease. Information on PH is available from the Pulmonary Hypertension Association at phassociation.org.



UCSF Study Recruiting Persons with COPD

The STATCOPE Clinical Trial will evaluate if cholesterol-lowering drugs (statins) have a role in the treatment of persons with chronic obstructive pulmonary disease (COPD, Emphysema, Chronic Bronchitis). Not all those who participate will receive medication. Eligible participants must have COPD, be over 40 years old, and have a smoking history. Participants will be compensated for their time in clinic and their parking will be validated. If you are interested, please contact Katelyn Patterson (415) 476-5418, katelyn.patterson@ucsf.edu or Rie Sakurai (415) 476-3259, rie.sakurai@ucsf.edu or see www.copdcrn.org for more information.

Devices to Help Remove Mucus from the Lungs

Excess or retained mucus can increase the risk of lung infections and reduce oxygen transport. For persons that have retained mucus or severely thick secretions, several strategies are important to manage and control this problem. Exercise, use of inhaled bronchodilators and regular medical follow-up are essential. Persons with cystic fibrosis, bronchiectasis and other disorders associated with retained mucus often use devices to further mobilize mucus. Most devices work on one or two principles: vibration transmitted from the device to the lungs to move mucus out of the lungs, and positive expiratory pressure (PEP) to help deliver air flow past the mucus to move it from the lungs. Your doctor or pulmonary rehabilitation staff may recommend a particular device for you and your pulmonary rehabilitation staff, or a respiratory therapist can demonstrate proper device use. Photos of the devices are available at tinyurl.com/29ykbcf. Follow manufacturer instructions for use and regular cleaning. Additional instructions for most devices are available at archive.thoracic.org/sections/career-development/practitioners-page/practice-tips/articles/tip22.html. If you continue to have thick or retained mucus or other significant respiratory symptoms, discuss this with your physician.



Lung Flute

lungflute.com

The device uses low-frequency acoustic wave technology for secretion clearance and bronchial hygiene. The user exhales through a mouthpiece over a reed inside the horn of the Lung Flute. The resulting acoustic wave travels down into the lower airways and lung tissue to increase secretion clearance. Approximate cost is \$45.



Acapella Valve

smiths-medical.com/catalog/bronchial-hygiene/acapella/acapella.html

The device uses both vibration and PEP to improve mucus clearance. Like most devices, the user exhales slowly in a controlled manner through the device mouth piece. The price ranges from \$55 to \$100.



Flutter Valve

aptalispharma.com/pdf/flutter.pdf

The device consists of a mouthpiece connected to a cylinder in which a stainless steel ball rests in a cone-shaped valve. The user exhales through the cylinder and causes the ball to move up and down during the exhalation. This creates vibration in the airways and PEP to enhance upward movement of mucus. The approximate cost is \$63.



The Quake

thayermedical.com/consumers_quake.htm

The device is operated by rotating the device handle to produce oscillations or vibrations that travel to the lungs to enhance secretion clearance. It is available from 800-250-3330 and retails from approximately \$54.

Cough in Pulmonary Fibrosis

adapted from the California Thoracic Society Inspirations article by Susan Jacobs. Chronic cough occurs in more than 80 percent of persons with idiopathic pulmonary fibrosis or IPF. The cause is unknown and treatment may be challenging. Persons with IPF and chronic cough have fatigue, breathlessness, sleep problems, depression, social stigmatization and other negative consequences.

Strategies to manage cough begin with treating possible causes, including gastroesophageal reflux disorder or GERD, upper airway cough syndrome and asthma. A few small studies have evaluated treatment of cough in IPF, including use of oral steroids (prednisone), opiates, nebulized lidocaine and even thalidomide. Patients have reported use of benzonatate, dextromethorphan, and codeine-based cough syrup, although there is no research to evaluate their use in IPF. Patients also report using throat lozenges that contain a local anesthetic, as well as ice water, warm water with honey, herbal teas such as "Slippery Elm" and "Black Elderberry" and herbal cough syrups. Other techniques that have been tried are pursed lips breathing, managing low oxygen levels during severe coughing and hypnosis. Discuss chronic cough evaluation and management with your physician.



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Physical Activity and Survival in COPD

A study by Benjamin Waschki and colleagues from the August 2011 edition of *CHEST* evaluated 170 persons with stable COPD. The researchers measured exercise capacity with a six-minute walk test as well as various clinical tests including echocardiogram, evaluation of peripheral artery disease, depressive symptoms, shortness of breath and other markers. The average follow-up for the participants was 48 months. Physical activity was the strongest predictor of survival. One of the study limitations is that the group studied was small. Reduced levels of physical activity have previously been found to be associated with decline in lung function, reduced health status, more hospital admissions and higher mortality.

Exercise and Osteoporosis in Postmenopausal Women

from a review published in a recent *Cochrane Database Review* by T.E. Howe and colleagues. Osteoporosis is associated with increased bone fractures due to reduction in bone density. Treatment typically involves medication such as Fosomax or alendronate. Inactivity may lead to reduced bone mass, whereas weight-bearing exercise increases bone mass. Forty-three well-designed research trials of 4,320 participants were included in the analysis. The researchers found that exercise offers a small, yet significant effect on bone density and has the potential to be a safe and effective way to avert bone loss in postmenopausal women.

Factors Associated with Self-rated Health and Quality of Life in COPD

by M. Arne and colleagues published October 2011 edition of the *International Journal of COPD* analyzed questionnaires on 1,475 subjects in Sweden. The most important factor associated with good self-rated health and quality of life was level of physical activity. Better self-rated health status and quality of life in subjects with self-reported COPD was associated with higher levels of physical activity, social support, and absence of economic problems.

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LUNGEVITY is published bi-monthly by the Department of Pulmonary Rehabilitation, sponsored by Seton Medical Center. Please note: The advice in this newsletter does not replace your physician's recommendations.

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