

# SAIL Home Oxygen Program

# Tester's Newsletter



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Spring 2011

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This newsletter is produced by the Lung Association of Saskatchewan through a contract with Saskatchewan Health.

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## Spotlight on Lung Disease

### Pulmonary Hypertension

Pulmonary hypertension (PH) is a relatively rare lung condition defined as an increase in blood pressure in the pulmonary arteries, veins or capillaries. Normal pulmonary arterial pressure is 25/10 mmHg and normal mean pulmonary pressure is 12-16 mmHg. If the pulmonary arterial pressure is greater than 40/20 or the mean pressure is greater than 25, pulmonary hypertension is present. Pressures in the pulmonary vessels are measured during cardiac catheterization.

### Symptoms

The hallmark symptom of PH is shortness of breath on exertion. Other symptoms include dizziness, fainting, non-productive cough, angina and peripheral edema. Idiopathic pulmonary hypertension often strikes young, otherwise healthy people, especially women.

(cont'd on page 2)

## Home Oxygen Workshop Telehealth Conference

**Tuesday, March 22, 2011**  
**1 pm - 4 pm**

**Interested?** Sign on with your local Telehealth coordinator

**Sign up deadline is March 18, 2011**

# Pulmonary Hypertension

*continued from page 1*

## Classifications of PH

There are many conditions and diseases that can cause pulmonary hypertension. In 2003 the World Health Organization developed a classification system for PH. Treatment choices are based on disease classification.

### WHO Group I: Pulmonary Arterial Hypertension (PAH)

Causes: idiopathic (IPAH), familial (FPAH), and associated with other diseases (APAH) such as scleroderma, or HIV. Several drug therapies have been developed in the past decade for PAH.

### WHO Group II: Pulmonary Hypertension due to left heart disease

Causes: atrial or ventricle disease, or mitral stenosis.

### WHO Group III: Pulmonary hypertension associated with lung disease or hypoxemia

Causes: COPD, interstitial lung disease, high altitude, obesity-hypoventilation syndrome. Oxygen therapy is the main treatment for this type of PH.

### WHO Group IV: Pulmonary hypertension due to embolic disease

Causes: pulmonary embolism, embolism of other matter such as tumour cells, or parasites (common in 3<sup>rd</sup> world countries). Treatment usually includes anti-coagulants.

### WHO Group V: Miscellaneous

## Treatment

At one time there was very little that could be done for people with pulmonary hypertension except to prescribe oxygen therapy. The life expectancy was 2 -3 years. In the past 10 years several new drugs have been approved to treat PAH. These drugs are aimed at vasodilating the pulmonary vessels and preventing fibrosis in the vessels. The life expectancy for PAH patients has doubled with the introduction of these medications. The effectiveness of drug therapy is usually monitored with a six minute walk test to evaluate exercise tolerance and watch for exertional hypoxia.

<b>SAIL Stats - February 1, 2011</b>	<b>Lung Association Stats - 2010</b>
Continuous.....1914	Nocturnal tests completed.....380
Exertional .....429	Waiting list .....61
Nocturnal .....229	Waiting time.....2.5 months
Infants .....19	% positive for sleep apnea.....50%
Total.....2591	

## Radon: Is it Lurking in Your Home?

Radon is a colourless, odourless, radioactive gas. It occurs naturally in the environment as a result of the breakdown of uranium found in soil and rocks. In the outdoor air, radon is diluted and is not a health risk. Radon can seep from the ground into buildings through the foundation, basement windows and the plumbing system. If radon seeps into an enclosed space such as a house or apartment building it can build up to levels that are a health risk.

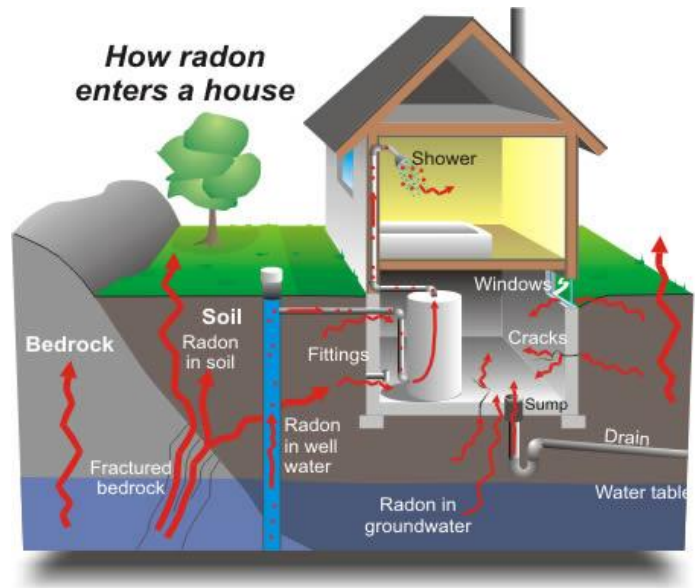
Radon is the second leading cause of lung cancer, behind only smoking. Radon exposure accounts for 10% of all lung cancers. People who smoke and who are also exposed to radon have an even greater risk of developing lung cancer. Lung cancer kills more Canadians than breast, colorectal and prostate cancers combined.

The Lung Association of Saskatchewan is urging Canadians to test their dwellings for radon. Testing devices are inexpensive. It is recommended that testing be done for a three month period, preferably during the winter months. Current Health Canada guidelines recommend lifetime levels of radon exposure be less than 200Bq/m<sup>3</sup>.

Testing should be carried out in the lowest level that is normally occupied for more than four hours per day. In a house this may be a finished basement or the main level if the basement is only used occasionally. It is recommended that apartment buildings be tested below the third level, although radon has been known to travel through elevator shafts and air ducts to higher floors.

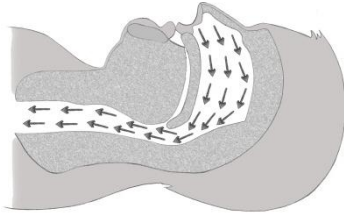
Reducing radon levels in a property can be simple. Actions such as filling foundation cracks, sealing foundation walls, installing proper floor and sump pump covers and increasing ventilation may be all that is required. In cases of high levels, the ground beneath the foundation may need to be depressurized. Professional help may be needed for that work. The cost of repair can run from \$50 to \$3000, depending on the level of radon found in the building. If you are building a new home, we urge you to talk to your home builder regarding upfront planning to address radon.

The Lung Association is now thrilled to announce that for \$50, you can purchase a radon kit from us, and the purchase price also includes the analysis. We are working in collaboration with the Saskatchewan Research Council who will analyse the radon kits here in our home province! More information about radon and radon testing can be found by calling the Lung Association of Saskatchewan at 1-888-566-LUNG, or by visiting our web site at [www.sk.lung.ca](http://www.sk.lung.ca).



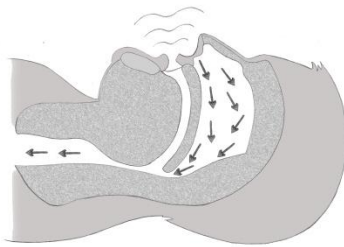
## Sleep Apnea

The word apnea means no breathing. Sleep apnea refers to pauses in breathing that occur during sleep. These pauses last for 10 to 30 seconds, possibly longer, until the body reacts with a bigger breathing effort to overcome the problem. This cycle happens over and over throughout the night, interfering with the normal sleep pattern.



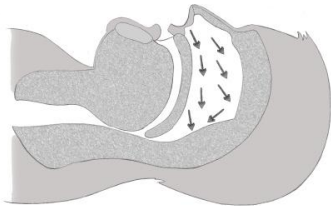
### Quiet Breathing

- air moves in and out easily



### Snoring: Hypopneas may begin

- partly collapsed airway
- air moves less easily



### Silence: Apnea

- completely collapsed airway
- no air movement

### There are four different types of sleep apnea

1. Obstructive sleep apnea (most common)
2. Central sleep apnea
3. Complex sleep apnea
4. Sleep-hypoventilation

### The two main symptoms of sleep apnea are:

1. Excessive daytime sleepiness that cannot be explained
2. Snoring with pauses in breathing

### Other symptoms include:

- fatigue
- high blood pressure
- irritability
- gasping or choking during sleep
- lack of concentration
- morning headaches
- memory loss
- impotence
- depression

### Testing for sleep apnea:

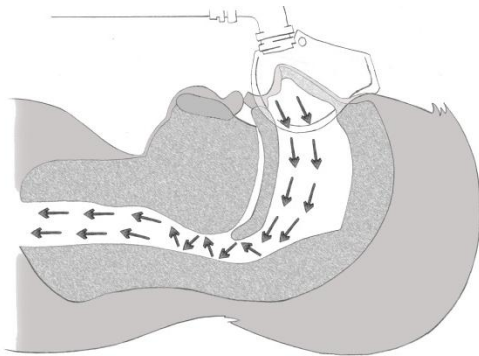
Sleep apnea events are identified during night-time testing either in a sleep lab or with home monitoring equipment. Results are then categorized according to the number of events per hour:

- Mild sleep apnea: 5 to 15 events per hour
- Moderate sleep apnea: 15 to 30 events per hour
- Severe sleep apnea: over 30 events per hour

Screening for sleep apnea can be accomplished with overnight pulse oximetry. The waiting time for any sleep apnea testing is very long.

### Treatment of sleep apnea:

CPAP: continuous positive airway pressure, is the mainstay of treatment for obstructive sleep apnea. The CPAP machine blows air into the airway, usually through a mask worn on the nose. This air acts as a splint to keep the airway from collapsing.



Flow of air from CPAP machine splints the airway.

This prevents collapse.

More sophisticated machines that can deliver bilevel pressures (BiPAP), and/or back up ventilation can be used for other forms of sleep apnea.

### Information for Home Oxygen Testers:

In addition to the conventional treatment using nasal CPAP for sleep apnea, supplementary oxygen may need to be added at night. This oxygen is connected directly into the circuit at the machine. Nasal cannula is not worn along with the CPAP mask. Daytime hypoxia must also be treated with supplemental oxygen. Treatment of elevated carbon dioxide levels may require the use of bilevel positive airway pressure (BiPAP) or nocturnal non-invasive ventilation (NIV). Testing for SAIL coverage of oxygen used with CPAP will include one night of testing with CPAP only and one night of testing with CPAP and oxygen.

Need to recertify? Please go on-line to [www.sk.lung.ca](http://www.sk.lung.ca)

Look under health professionals, then choose oxygen testers.

It only takes a few minutes.

# 2011 Respiriology State of the Art Conference

An update for family physicians and nurse practitioners

**Saturday, May 28, 2011**

Sheraton Cavalier Hotel, Saskatoon

Presentations: 8:00 to 14:00

Spirometry Interpretation Workshop 14:00 to 17:00



## **Topics:**

Sleep apnea, COPD, asthma, pulmonary hypertension, air quality, pollution and radon.

To register please contact

The Lung Association of Saskatchewan: 343-9511 or [info@sk.lung.ca](mailto:info@sk.lung.ca)

## **Did you know?**

- ✓ Lung attacks, a life threatening flare-up of COPD are at their highest annual levels during the Christmas period.
- ✓ Asthma attacks spike in September when children return to school.
- ✓ It is estimated that COPD will be the third leading cause of death globally by 2020.
- ✓ The World Health Organization (WHO) estimates that 600,000 people die every year from second hand smoke.
- ✓ WHO has found that only 7.4% of the world population live in areas with smoke-free laws.
- ✓ Obesity is a major risk factor for developing asthma.
- ✓ Obese people with asthma tend not to respond as well to treatment.
- ✓ In 2010, five people from Saskatchewan received lung transplants in Edmonton.
- ✓ Lungs filter about 500 litres of air per hour.
- ✓ Only about 30% of people diagnosed with COPD have ever had spirometry testing.
- ✓ Cystic fibrosis is the most common, life-shortening, genetic disease in caucasians.

## Daxas (Roflumilast)

### A new treatment for Chronic Obstructive Pulmonary Disease

Chronic Obstructive Pulmonary Disease (COPD) is a lung disease caused mainly by smoking. Smoking causes persistent inflammation of the small and large airways and the lung parenchyma and vasculature. This inflammation lasts long after the toxic agent (smoke) has been withdrawn. This inflammation is different in many ways from the inflammation found in asthma.

Researchers have made great strides in identifying specific anti-inflammatory agents, phosphodiesterase (PDE) inhibitors that affect airway smooth muscle, inflammatory cells and pulmonary nerves. Eleven PDE inhibitors have been identified so far. Until recently, only non-selective PDE inhibitors such as theophylline have been available to treat COPD. Theophylline caused side effects and drug interactions, making it an unpopular drug therapy. A PDE-4 inhibitor, roflumilast (Daxas) had been shown in clinical trials to improve lung function, decrease lung attacks and improve quality of life in COPD patients.



In December 2010 Daxas was approved for use in Canada for moderate to severe COPD. It is a once a day pill that can be taken with or without food. Daxas appears to be well tolerated. Side effects reported have included diarrhoea, weight loss, nausea, abdominal pain and headache. It has not been found to interact with warfarin, inhaled bronchodilators or erythromycin.

In the near future you may find that your clients with COPD will be adding a pill to their daily arsenal of inhalers in the fight against this disease.

Reference:

McIvor RA. Roflumilast: systemic therapy for chronic obstructive pulmonary disease. Expert Rev Respir Med. 2008 Oct. 2(5):539-49.

### **Pulse Oximeters**

If you need repairs or maintenance on your N-20P oximeter, please call:  
Schaan Healthcare Products, Saskatoon  
664-1188 or 1-800-667-3786

#### **Printer paper:**

Current price for a box of 12 rolls is \$59.80 plus tax  
Part # is 901624

## Phone Numbers

### **Saskatchewan Aids to Independent Living (SAIL)**

3475 Albert Street  
Regina, SK S4S 6X6  
Phone: 787-7121 Fax: 787-8679

## **Oxygen Supply Companies**

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### **Airgas Puritan Medical**

Prince Albert: 922-9040 or 1-800-677-0220  
Regina: 522-0220 or 1-888-469-9436  
Saskatoon: 933-0202 or 1-800-677-0220

### **Medigas A Praxair Company**

Regina: 721-2380 or 1-866-446-6302  
Saskatoon: 242-3325 or 1-866-446-6302  
Swift Current: 773-8064 or 1-866-446-6302

### **Prairie Oxygen Ltd.**

Regina: 545-8883 or 1-877-738-8702  
Saskatoon: 384-5255 or 1-877-738-8702

### **Provincial Home Oxygen Inc.**

Regina: 790-8491 or 1-877-352-5025  
Saskatoon: 651-1243 or 1-877-352-5025

### **VitalAire Healthcare**

Lloydminster: 1-780-875-9777  
Regina: 721-0071 or 1-800-567-0071  
Saskatoon: 931-3334 or 1-800-461-0096

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