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Addressing the needs of the Canadian COPD patient

Living with COPD

A look at flexible bronchoscopy

Flexible bronchoscopy is a visual exam of the breathing passages of the lungs (called "airways"). It is also called airway endoscopy. This test is done when it is important for your doctor to see inside the airways of your lungs, or to get samples of mucus or tissue from the lungs.

Bronchoscopy involves placing a thin tube-like instrument called a bronchoscope through the nose or mouth and down into the airways of the lungs. The tube acts as a camera and is able to carry pictures back to a video screen.

Common reasons for a bronchoscopy

Infections

When a person is suspected of having a serious infection, bronchoscopy may be performed to get better samples from a particular area of the lung. These samples can be looked at in a lab to try to determine the exact cause of the infection. A person who has recurrent infection may have a bronchoscopy to try to figure out a cause. For example, tissue samples can be looked at for cilia function (the brush-like lining of airways that move mucus). Airway fluid can be checked to see if there are any signs of aspiration due to swallowing problems that allow food or liquids to get into the airways.

Lung spot—An abnormal finding ("spot") in the lung viewed on an X-ray film or CT scan may be caused by an infection, cancer, or inflammation. Bronchoscopy is done in some cases to take samples from the area. These samples are then looked at in a lab to help find the specific cause of the lung spot.

Airway blockage and atelectasis—Atelectasis is caused when the airway to a lung or part of a lung is blocked and air

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Chronic Obstructive Pulmonary Disease

Comorbidities a concern

From what we know about COPD, it seldom exists in a vacuum. According to the Global Initiative for Obstructive Lung Disease, the impact that the disease has on the life of a COPD patient depends upon the severity of COPD symptoms, and the existence of other illnesses, also known as co-morbid conditions. Current data reports that, in those 65 years of age and older, up to 25 per cent have at least two co-morbid conditions, and 17 per cent report three. Signs and symptoms of comorbidities are important to recognize and report to your doctor.

The World Health Organization estimates that COPD will be the third most common worldwide cause of death and disability by 2030, from its current fifth ranking. Despite worldwide medical research, health care efforts, and health care costs, COPD statistics reveal a continuing upward trend in mortality, in contrast with other major causes of death like cancer and cardiovascular disease. A factor that complicates therapeutic approaches to the management of COPD is that COPD is rarely the only chronic illness a patient has to contend with. Age and smoking are the major risk factors for COPD and a number of other illnesses, often resulting in the fact that many COPD patients have multiple coexisting diseases. The presence of other diseases is so strongly associated with the management of COPD that the need for thorough attention to them is emphasized even

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Ask COPD Canada

Q What is augmentation therapy and who would potentially benefit from the therapy?

A The specific therapy for the treatment of Alpha-1-related lung disease is augmentation therapy—also called replacement therapy. The basic goal of augmentation therapy is to increase the level of alpha-1 protein circulating in the blood and lungs of patients who are deficient in the alpha-1 antitrypsin protein. Alpha-1 Antitrypsin Deficiency (AATD) is a hereditary condition that can severely affect a patient's lung function. The condition is marked by a low level or absence of alpha-1-proteinase inhibitor (A1-PI), a natural protein that inhibits neutrophil elastase, an enzyme released by our body's white blood cells as they respond to inflammation or infection. The ultimate goal of augmentation therapy is to slow or stop the progression of lung destruction by replacing the deficient protein.

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Ask COPD CANADA

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The therapy cannot restore lost lung function—nor is it considered a cure

Severe deficiency of A1-PI is associated with a strong tendency for the development of emphysema, a form of chronic obstructive pulmonary disease (COPD). According to a recent registry, emphysema affects 54 per cent of diagnosed Alpha-1-deficient patients. On average, it takes over seven years from the time a patient's lung symptoms first appear until a proper diagnosis is made. And nearly half (43 percent) of patients see at least three physicians before being diagnosed. Approximately 90 per cent of individuals with AATD are not diagnosed or are thought to have other conditions, such as asthma or smoking-related COPD.

Findings from CSL Behring's RAPID study, the largest placebo-controlled trial ever conducted in patients with AATD, demonstrate that the use of Alpha1-Proteinase Inhibitor therapy may slow the progressive loss of lung tissue experienced by these critically ill patients. RAPID is an acronym for Randomized, Placebo-controlled Trial of Augmentation Therapy in Alpha-1 Proteinase Inhibitor Deficiency. Patients with AATD treated with Alpha1-Proteinase Inhibitor therapy exhibited a lower annual rate of lung density decline compared to placebo, when measured using chest computed tomography, at full inspiration.

"RAPID is regarded as a landmark study validating almost two decades of focus on the lung-density endpoint as the most sensitive way to track lung tissue decline and the seven-year collaboration of an international team of investigators," said Kenneth R. Chapman, MD, Director of the Asthma & Airway Centre at the University Health Network in Toronto, and lead author of the paper. "Our findings provide additional evidence that treatment with an Alpha1-Proteinase Inhibitor may slow the accelerated loss of lung tissue that is a characteristic of this potentially debilitating disease."

"We are excited that the results of this important study in Alpha-1 have been published in the highly-respected journal *The Lancet,*" said John Walsh, co-founder, President and CEO of the Alpha-1 Foundation. "We commend CSL Behring for their outstanding commitment to the Alpha-1 community and advancing the understanding and treatment of the disease. These results further support the use of augmentation therapy in the treatment of Alpha-1, and we hope they bolster efforts of Alpha-1 communities around the world to win access to therapy."

According to study protocol, the effect of CSL Behring's Alpha1-Proteinase Inhibitor therapy on the progression of emphysema, the primary endpoint of the study, was measured by computed tomography scan over 24 months and was assessed by the annual rate of lung density loss at total lung capacity (TLC) and functional residual capacity (FRC) combined. The annual rate of lung density loss at TLC and FRC combined were not statically different in the treatment group compared to placebo group. However, results showed a 34 per cent reduction in the annual rate lung density decline compared with placebo when measured at TLC (or full inspiration). Serious adverse events were not statistically different between groups with one death in the A1-PI group and three deaths in the placebo group.

RAPID was a multicenter, double-blind, randomized, parallel group, placebo-controlled study comparing the efficacy and safety of CSL Behring's Alpha1-Proteinase Inhibitor therapy with placebo in patients with emphysema due to AATD. The participants, 180 non-smokers aged 18 to 65 years, were randomly assigned to receive A1-PI intravenously 60 mg/kg weekly or placebo.

CSL Behring is a leader in the plasma protein therapeutics industry.CSL Behring therapies are used around the world to treat coagulation disorders including hemophilia and von Willebrand disease, primary immune deficiencies, hereditary angioedema and inherited respiratory disease, and neurological disorders. CSL Behring operates one of the world's largest plasma collection networks, CSL Plasma. For more information visit
> *http://www.cslbehring.com/news-room/news-releases.htm*

We invite your questions. Please mail questions to Ask COPD CANADA c/o COPD Canada, 555 Burnhamthorpe Rd., Suite 306, Toronto, Ont. M9C 2Y3. Or you can e-mail questions to: AskCOPDCanada@gmail.com

Bronchoscopy continued from Page 1

cannot get through. The air sacs do not expand which can be seen on chest X-ray. This blockage is usually caused by something such as a peanut, a tumor, or thick mucus in the airway passage. Bronchoscopy allows the doctor to see the blockage and try to sample and/or remove the substance. This helps to open up the airway and lung, especially when lesser invasive treatments (like chest airway clearance) have failed.

Bleeding—When a person has coughed up blood, bronchoscopy may help find the cause of the bleeding. For example, if a tumor is causing the bleeding, the doctor will locate the tumor and take samples of tissue (biopsies) through the bronchoscope. The samples are then looked at in the lab to identify the type of tumor.

Noisy breathing and abnormal airways—A person can have noisy or abnormal breathing sounds that may be caused by a problem with the throat or airways of the lung. There may be shortness of breath, noisy breathing, or labored breathing during sleep. Children may be born with abnormal airways such as a tracheal (windpipe) connection with the esophagus (feeding tube) called a TE fistula. Bronchoscopy allows the doctor to look directly at the throat, vocal cord area, windpipe, and major airways to identify any problems. Causes of this type of breathing may include vocal cord paralysis or weakness, floppiness in the airways (bronchomalacia) or voice box (laryngomalacia), or a blood vessel pressing on the outside of the airway (vascular compression).

Lung transplant—People who have had a lung transplant will have bronchoscopy to check on how well the lungs are doing. Samples will be taken of tissue and airway mucus to check for infection or signs of rejection in the new lungs.

Alternatives to bronchoscopy

Other tests and procedures, such as X-rays, CT scans and suctioning techniques can give the doctor some information about the lungs, but

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Pulse: News about COPD

Lung function declines in COPD after steroid withdrawal

Leiden, The Netherlands / Patients with moderate to severe chronic obstructive pulmonary disease (COPD) experienced significant decreases in lung function for up to five years after discontinuing long-term inhaled corticosteroid (ICS) treatment, a Dutch study found. These patients also experienced steady worsening in airway hyper-responsiveness (AHR) and quality of life, according to investigators led by Lisette Kunz, MD, of Leiden University, The Netherlands, reporting in the journal *CHEST*. Previous ICS withdrawal studies have reported similar results, but those only followed patients for six to 12 months, Dr. Kunz and colleagues noted. ICS withdrawal in COPD patients has not been well studied overall, they said, and clinicians should follow the current guidelines for prescribing ICS in COPD patients while new studies will focus on long-term benefits of ICS.

http://tinyurl.com/psgaper

Ten-year trends in direct costs of COPD

Vancouver, BC / The objectives of this population-based study were to determine the excess costs of COPD and to look at the trend in costs from 2001 to 2010 in British Columbia. The data suggests that the direct economic burden of COPD is high and has increased significantly between 2001 and 2010. The increase is over and above the increase in the healthcare costs of the general population. The direct medical costs (in 2010 Canadian dollars) were calculated based on billing records pertaining to hospital admissions, outpatient services use, medication dispensations, and community care services. They determined the excess medical costs of COPD by calculating the difference in overall medical costs between the COPD and the comparison cohorts.

http://tinyurl.com/pnod7e7

P.E.I. institutes restrictions on e-cigarettes and vaping

Charlottetown, P.E.I. / New restrictions on e-cigarettes and vaping products went into effect in P.E.I. on Sept. 1. Beginning on that date, e-cigarettes have been banned in the same places where regular cigarettes are not allowed. A person using an e-cigarette will have to be 5 meters away from an entryway. On Oct. 1, the provincial government began restricting advertising and visibility of vaping products. Stores are required to place them behind a barrier like tobacco products. The decision on whether government will move forward on a proposed ban of flavoured tobacco products has not been made, said Joe Bradley, environmental health manager. "What the changes to the legislation have allowed is the province could regulate the sale of flavoured tobacco products," he said.

http://tinyurl.com/qxu35kt

Pulse: News about COPD

COPD patients with psychological conditions have higher rates of early hospital re-admission

Galveston, Tex. / Researchers from The University of Texas Medical Branch at Galveston found that people with a psychological condition such as depression, anxiety, psychosis, or alcohol/drug abuse are more likely to be readmitted early into a hospital for complications of chronic obstructive pulmonary disease. The study was recently published in the journal, *CHEST*. "These psychological disorders are more likely to predict early readmission than other significant factors," said Gurinder Singh, a fellow in the UTMB department of internal medicine. Reasons for early readmission are complex, and may be related to underlying severity of COPD, coexisting illnesses, outpatient follow-up and the presence of psychological disorders. Psychological conditions are common in patients with COPD. Up to 55 per cent of patients with COPD suffer from anxiety or depression.

http://www.utmb.edu/newsroom/article10596.aspx

Bronchoscopy continued from Page 2 bronchoscopy allows the doctor to look at the inside of the lungs, obtain very specific samples and remove mucus if necessary. This is why your doctor may schedule a bronchoscopy even after you have had X-rays or other tests.

Preparing for a bronchoscopy

In a critically ill patient who has a breathing tube, feedings are stopped hours before the procedure to assure that the stomach is empty. The patient is given a small amount of medicine (a sedative) that causes sleepiness.

If you are having a bronchoscopy as an outpatient or as a non-critically ill inpatient, you will be told not to eat after midnight the night before (or about eight hours before) the procedure. You will also receive instructions about taking your regular medicines, not smoking and removing any dentures before the procedure.

Right before the procedure, you may be given a medicine to numb your nose and throat area to make it more comfortable and help prevent coughing and gagging during the procedure. After that, you may be given a sedative by IV (in a vein). The sedative will help you to relax, and may make you sleepy. The sedative may also help you to forget any unpleasant sensations felt during the test.

What happens during a bronchoscopy?

Your doctor should explain what will happen during the bronchoscopy. If you are awake, he or she can talk you through it step-by-step. You will probably be lying down with the head of the bed tilted up slightly. The bronchoscope is placed through your nose, then advanced slowly down the back of the throat, through the vocal cords and into the airways. If a person has a breathing tube in place, the bronchoscope is passed through this tube. Your doctor will be able to see the inside of the airways as the bronchoscope moves down. You may feel like you cannot "catch your breath," but there is usually enough room around the tube to breathe and get enough oxygen. The doctor can also give you breaks during the procedure as needed. The length of the bronchoscopy varies depending on what needs to be done and why you need it. The procedure usually lasts from 15 minutes to an hour.

Risks of bronchoscopy

Bronchoscopy is a safe procedure. Serious risks from bronchoscopy, such as an air leak or serious bleeding, are uncommon (less than 5%). The risks associated with the procedure are as follows:

Discomfort and coughing—While the bronchoscope is passed through your nose and back of your throat into the lungs, it may cause some discomfort. It may also tickle your airways, causing a cough. You will be given medicine to help with this prior to the procedure.

Reduced oxygen—Your oxygen level will be continuously monitored during the procedure using a pulse oximeter, with a sensor clip placed on your finger. The level of oxygen in the blood may fall during the procedure for several reasons. The bronchoscope may block the flow of air into the airway, or small amounts of liquid used during the test may be left behind, causing the oxygen level to drop. This decrease is usually mild, and the level usually returns to normal without treatment. If the oxygen level remains low, the doctor will give extra oxygen or stop the test to allow for recovery.

Lung leak—Rarely, an airway may be injured by the bronchoscope, particularly if the lung is already very inflamed or diseased. The procedure could cause an air leak (pneumothorax) in which air comes out of the lung and gathers in the space around it, which can limit how well the lung expands. This complication is not common, and is more likely if a biopsy is taken during bronchoscopy. If there is a large or ongoing air leak, it may need to be drained with a chest tube. (For more information see the ATS patient information piece "Chest Tube Thoracostomy"—*www.thoracic.org/patients*).

Bleeding—Bleeding can occur after the doctor performs a biopsy. Bleeding can also occur if the airway is already inflamed or damaged by disease. Usually bleeding is minor and stops without treatment. Sometimes a medication can be given through the bronchoscope to stop bleeding. Rarely, bleeding can lead to severe breathing problems or death.

Infection—While equipment used is cleaned before and after use, there is a small risk that a germ could be introduced into the airways that could cause infection. If a new infection develops, it would be treated.

What happens after the procedure?

Patients vary in how long it takes to wake-up following sedation. If you are in the intensive care unit on a ventilator (respirator; breathing machine), you may already be sedated and will continue to receive medicines to keep you comfortable on the ventilator. If you are an outpatient or a non-critically ill inpatient, you will need to stay in a recovery area until the sedative has worn off. You will also need to wait until the numbing medicine wears off before drinking any liquids. If you are an outpatient, it is recommended that you bring someone along to drive you home. It is unlikely that you will experience any problems after the test other than a mild sore throat, hoarseness, cough, or muscle aches. If you feel chest pain or increased shortness of breath or cough up more than a few tablespoons of blood once you leave the hospital, contact your doctor immediately. Your doctor can tell you how your airways look right away. Lab results take more time and can vary widely depending on the specific test that is being done.

This information about bronchoscopy has been provided as a public service of the American Thoracic Society. The content is for educational purposes only. It should not be used as a substitute for the medical advice of one's health care provider. For more information—www.thoracic.org

Before making medical decisions

Your physician should be consulted on all medical decisions. New procedures or drugs should not be started or stopped without such consultation. While we believe that our accumulated experience has value, and a unique perspective, you must accept it for what it is...the work of COPD patients. We vigorously encourage individuals with COPD to take an active part in the management of their disease. You can do this through education and by sharing information and thoughts with your primary care physician and respirologist. Medical decisions are based on complex medical principles and should be left to the medical practitioner who has been trained to diagnose and advise.

Comorbidities continued from Page 1 in the COPD definition by GOLD (Global Initiative for Chronic Obstructive Lung Disease) guidelines: http://www.goldcopd.org/guidelines-global-strategy-for-diagnosis-management.html.

COPD is characterized by airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases. Exacerbations and comorbidities contribute to the overall severity in individual patients. Comorbidities are most often responsible for impairing quality of life for early-stage patients, for increasing mortality in end-stage patients, for increasing the burden of COPD management on health care costs, and creating therapeutic dilemmas for health care providers.

COPD comorbidities is a rather broad and diverse term, including diseases that independently coexist with COPD with no other causation, diseases that share common risk factors and pathogenetic pathways with COPD, diseases that are complicated by the interaction with the lung, and systemic manifestations of COPD, and vice versa. This diversity has given rise in recent years to a conceptual discussion about the appropriateness of the term "comorbidities", in an attempt to establish an agreement over its meaning. No universal definition has yet been accepted. Terminology issues, though, should not shift the focus from the fact that COPD patients with multiple diseases often have poorer outcomes and are in need of a more complex, tailored therapeutic intervention approach in order to optimize and achieve better outcomes.

There is an increasing abundance of evidence that associates COPD with other age-driven diseases and diseases that share common risk factors (smoking) or other related pathways. This view is supported by the widely accepted hypothesis that COPD sustains systematic inflammation. In a recent report by Divo, et al . ·Comorbidities and risk of mortality in patients with chronic obstructive pulmonary disease. *Am J Respiratory and Critical Care Medicine* 2012; 186(2):155–161), they concluded that lung, pancreatic, esophageal, and breast cancers (the last only for female patients), pulmonary fibrosis, atrial fibrillation/flutter, congestive heart failure, coronary artery disease, gastric/duodenal ulcers, liver cirrhosis, diabetes with neuropathy, and anxiety are the most significant and frequent comorbidities.

Clinical trials investigating COPD treatment routinely exclude patients with multiple comorbidities or advanced age; the latter enormously affects the external validity and generalizability of the effectiveness of the treatments tested in the large clinical trials. In a review published by Dove Press[1] the authors focus on the major comorbidities that affect COPD patients, present an overview of the problems they face, the reasons and risk factors for the most commonly encountered comorbidities, the burden on health care costs, and provide a rationale for approaching the therapeutic options for the COPD patient afflicted by comorbidity.

Links between COPD and comorbidities

COPD comorbidities include clinical conditions that share common risk factors and pathogenetic pathways with COPD, i.e., diseases that are consequences of COPD and diseases that just coexist with COPD due to their high prevalence in the general population but affect outcomes such as hospitalization rates and mortality. As the knowledge of COPD and of the pathogenesis of COPD comorbidities is gradually elucidated by basic science data, the more the complexity of the interactions involved becomes apparent. As COPD becomes more and more understood as a systematic inflammatory disease, the focus is shifting from the lungs. Smoking and biomass exposure, along with genetic predisposition, are the major risk factors for developing COPD. Age is also a common risk factor for developing COPD, but should not be overestimated. For example, COPD is often considered to be a disease of the later years, but estimates suggest that 50% of those with COPD are now younger than 65 years of age (Barnes PJ: Chronic obstructive pulmonary disease: effects beyond the lungs. *PLoS* Med 2010; 7(3):e1000220.)

Lung cancer and COPD may share certain risk factors, like age, smoking, or genetic predisposition, but bronchial and systemic inflammation due to COPD may also contribute to carcinogenesis. The same is evident in several cardiovascular diseases, which also share common risk factors and seem to have a bidirectional inflammatory link with COPD that impairs outcomes for both diseases.

Systemic inflammation is the key for linking COPD and most of its dependent comorbidities. Some researchers go as far as to propose that COPD is just a manifestation of a systemic inflammatory syndrome. COPD medications may also contribute to the development or worsening of certain comorbidities. Bronchodilators are suspected of causing tachyarrhythmias and tremors, but recent randomized clinical trials of long-acting β-agonists suggest that these effects probably do not increase cardiovascular mortality. Inhaled anticholinergics can affect intraocular pressure and bladder function and might have cardiovascular effects. Inhaled corticosteroids may increase the risk for cataracts, skin bruising, osteoporosis, and pneumonia. Systemic corticosteroids, often overprescribed in COPD patients, could contribute to diabetes, hypertension, osteoporosis, muscle dysfunction, and adrenal insufficiency.

COPD remains a major health issue with a significant economic impact. The prevalence of COPD is rising in developing and developed countries, resulting in increased direct and indirect costs of COPD to health care systems worldwide.

1. For more information:: *International Journal of COPD* 2015:10 *www.dovepress.com*

COPD people
Brenda Cunningham

Brenda Cunningham was raised on a small farm in Kerns Township located northwest of New Liskeard, Ont. now known as Temiskaming Shores. She has one sister Ollie who still lives on a section of the farm. Brenda lived in Brantford, Ont. for a short while, but has called Sudbury home since in 1982. She has two married sons, Walter who is 46 and lives in New York and Gerry who is 34 and resides in Sudbury. Her career was raising her boys and she loved every minute of it. Brenda's father was diagnosed with emphysema and passed away when he was 58. While undergoing tests in Toronto they discovered that he had Alpha-1 Antitrypsin Deficiency. Brenda was diagnosed with Alpha-1 in 1973. She heard or read that the average life expectancy for someone with Alpha-1 was 57. Brenda feels this information was the basis for many decisions and how she has lived her life. She is now 67 and feels that every day she has is a bonus. In her early 30s she was diagnosed with emphysema and began using supplemental oxygen in 1994. She remains active doing volunteer work focusing on the local Lung Disease Support group which she was instrumental in forming. Brenda smoked from the time she was 15, into her 30s. Not a lot, but enough, given her Alpha-1 condition.

How did you know there was something wrong with your health?

I could not participate in activities that required endurance without taking breaks because I got short of breath. When I caught a cold it was a doozy. I remember hearing so many times "well if you would lose a few pounds you could probably do more." I was chubby but I was not obese in any way. Honestly, being diagnosed with A1AD I just knew "it" would happen. I just had no idea what "it" would be like.

Do you recall any warning signs of lung disease?

I used to help out on the farm. Cleaning the gutters in the barn was done with a shovel and wheelbarrow. You filled it up, wheeled out and dumped it. One frosty morning I could not get the wheelbarrow to the top of the ramp, it felt like my chest was on fire. I guess that was probably my very first "Oh my God it's happening" moment.

How did you quit smoking?

I tried several times to quit without success. After lighting up a cigarette I inhaled the smoke deep and started to cough so violently I threw up. Being unable to get a breath made the difference. I saw my physician about getting another puffer or something to help my breathing. He told me that if I wanted to see my children grow up I had better stop smoking. It was very hard and I know I was cranky and not a fun person to be near but I made it.

Does cigarette smoke affect you now?

I actually feel nauseous being around people who smoke. It's a terrible habit.

Do you attend pulmonary rehab?

I will be restarting in November. I'm what you might call a social exerciser. It's always good to learn about new medications and different tips to make your life easier. Being with others with this disease helps. When you "graduate" from rehab you are encouraged to join the YMCA which is in the same building. I used to work out for 45 minutes on the machines and then swim for 45 minutes or more. I loved to swim. When I first started I could only do three lengths of the pool but I built it up to a mile. I can't swim anymore though and miss it.

Are you and Bruce still motorcycling?

We are. It has become more of a challenge as I cannot turn my oxygen off for periods of time. I refuse to ride without full gear for protection.

Why do you push yourself to go on the motorcycle?

A few years ago we took a back road in Nairn Centre. Suddenly, everywhere you looked the ground was covered with white flowers (trilliums). I was awe-struck, such beauty. I had never seen them so big or so abundant. Motorcycling heightens all your senses and brings with it a peace I cannot find in any other way.

Are there any trips in your future?

We would like to retrace the route we did on our first trip to the East Coast with modifications. We will have to limit our riding to shorter days, with more rest stops.

Where do you like to go?

That's hard to answer. If I'm on the bike, anyplace is perfect.

What is LDSG Inc.?

LDSG is a support group for people with lung disease that was started in 2007. Bruce and I may have been the driving force in founding this group but we certainly could not have done it without the help of several fellow COPD'ers.

Is your group just for people with COPD?

No. Anyone living with any lung disease.

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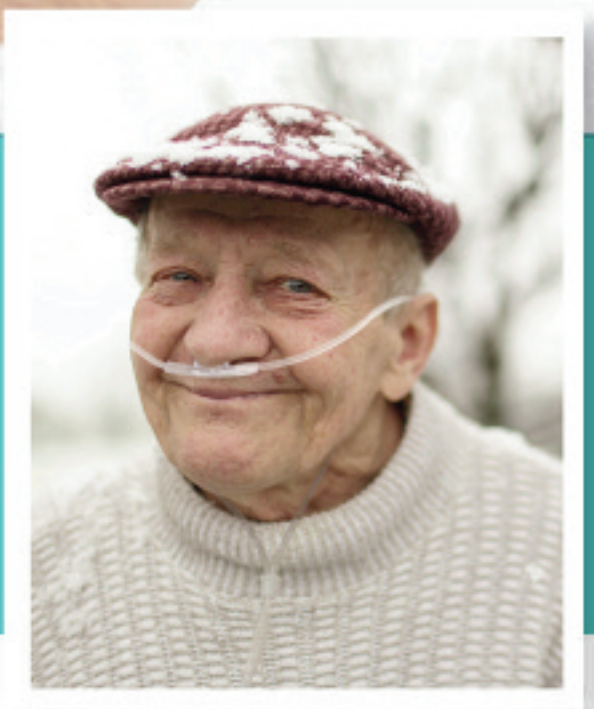

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