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Living with COPD



The basics of spirometry testing

Spirometry is a common and effective diagnostic test that is used to assess how well your lungs work by measuring how well you can exhale and how much air is exhaled. The test is usually performed in your doctor's office or at a hospital or clinic. You will be asked to take in a big breath, and then blow as hard and long as you can into a machine. The machine measures how much air you can blow out from your lungs and how fast you can blow it out.

Spirometry (also called pulmonary function test [PFT] or lung function test) is used to diagnose asthma, chronic obstructive pulmonary disease (COPD) and other conditions that affect breathing. Spirometry may also be used periodically to monitor your lung condition and check whether a treatment for a chronic lung condition is helping you breathe better. It is the most reliable way to test your lungs for COPD and asthma.

Spirometry is generally a safe test. You may feel short of breath or dizzy for a moment after you perform the test. Because the test requires some exertion, it isn't performed if you've had a recent heart attack or some other heart condition. Rarely, the test triggers severe breathing problems.

Spirometry can be used to diagnose and manage many different types of lung disease. The earlier spirometry is done, the earlier lung disease can be detected and treated. Smokers and former smokers should be tested in almost all cases. If you are over 40 years of age and smoke or used to smoke, you may have the early

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Chronic Obstructive Pulmonary Disease The joys of an active life

Keeping active when you have chronic obstructive pulmonary disease can be quite a challenge since breathing takes much more energy and effort than what a normal person experiences. So, hats off to you if you can deal with COPD and be relatively active. Keeping active is important, for you, your family and friends. It also imparts a sense of accomplishment which then can uplift one's mood.

COPD affects your lungs, your ability to breathe, your muscles, heart, bones and overall mood. Symptoms tend to worsen over time and you may find that you have to slow down when doing normal daily activities. It can be a chore, walking up stairs, shopping or taking a shower. Sometimes you may feel unable to carry

out these simple things. Keeping active can help make these tasks more manageable and help you feel better in general.

Exercise helps everybody stay fit and healthy, not just people with impaired lungs. The fitter you are, the easier you will find breathing and daily activities. If you are lucky enough to be in a pulmonary rehab class you'll know that by doing simple training exercises you can strengthen your muscles so they work better. If you are inactive, your muscles will become de-conditioned. This means they will lose

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Ask Dr. Bourbeau

Jean Bourbeau is a respirologist and full professor in the Department of Medicine and Epidemiology and Biostatistics, McGill University, Montreal



Q What are your thoughts regarding the use of azithromycin to prevent COPD exacerbations?

A Azithromycin is a third-line therapy for the prevention of COPD exacerbations to be used only in selected patients. It has been recommended in the COPD CTS Position statement 2017 and the GOLD 2017. Patients who are candidates for azithromycin should be referred to a respirologist.

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Q I've been diagnosed with low level COPD but we're going to test my heart to see if it's my heart that is causing my low blood/oxygen level. Is there a simple way to determine if it is the heart or lungs that is the main source of my low BOLs?

A If a patient has mild COPD, it is unlikely that it will cause low blood/oxygen levels. Other lung conditions have to be searched as well as heart conditions.

Q I'm curious to know your opinion on the use of lung volume reduction coils to improve my breathing. Are LVRCs a worthwhile alternative to lung transplantation and is the procedure available in Canada?

A Many bronchoscopic procedures for lung volume reduction including coils have been assessed in COPD. They all have similar theoretical objectives, i.e., to decrease thoracic volume to improve lung, chest wall and respiratory muscle mechanics. Multicentre trials have examined nitinol coils implanted into the lung compared to usual care and reported an increase in six-minute walk distance and smaller improvements in FEV1, and quality of life. Major complications included pneumonia, pneumothorax, hemoptysis and COPD exacerbations. Additional data are needed to define the optimal patient population to receive the specific bronchoscopic lung volume technique and to compare the long-term durability of improvements in functional or physiological performance to bronchoscopic lung volume reduction relative to side effects. The technique is not an alternative to lung transplant and it is not yet approved/available in Canada.

Q A white spot was detected on my lung after a CT scan. I was told it was unlikely to be cancer as cancer usually appears as a black spot. We're going to monitor the spot but I wanted to know if there is any truth to the white spot vs. black spot preliminary diagnosis.

A The CT scan is a specific type of X-ray that allows us to see smaller abnormalities than the standard chest X-ray. Like any X-ray, an increased density will be white while a decreased

density will be black. A "white spot" in the lung is abnormal and among the differential diagnosis, it could be a scar or a lung cancer. It usually needs further investigation; in some cases the investigation could be to follow up with a CT scan at a later time. Ask your physician what are the options for the investigation, discuss the potential advantages and disadvantages of each option.

Q Is there any evidence that milk thistle can help reduce the inflammation associated with COPD?

A Absolutely not. This is a popular myth.

Q Are there signs I should be aware of for an impending lung attack? I'm very concerned about exacerbations and would like to prevent them, if at all possible.

A Lung attacks or exacerbations, if you have experienced those in the past, tend to repeat with a similar pattern one time after the other. It is a good thing to have a written action plan and review with your physician and/or case manager the COPD exacerbations that you had in the past and be prepared to recognize the prodromal symptoms to better solve the problem, take the proper decision and act quickly as needed. I would refer you to the online program Living Well with COPD: www.livingwellwithcopd.com—create your password if you have not done it already and take advantage of the education on managing COPD exacerbations available there. Speak with your physician or health care professional.

Dr. Jean Bourbeau is director of the Center for Innovative Medicine (CIM) of the Research Institute of the McGill University Health Centre (MUHC) and director of the Pulmonary Rehabilitation Unit. He is past president of the Canadian Thoracic Society (CTS) and is a member of the scientific committee of GOLD. He has a research chair in COPD and an online COPD education program. Participation in the online program is free-of-charge: www.LivingWellwithCOPD.com

*We invite your questions. Please mail questions to Ask Dr. Bourbeau c/o COPD Canada, 555 Burnhamthorpe Rd., Suite 306, Toronto, Ont. M9C 2Y3, or you can e-mail questions to: AskCOPDCanada@gmail.com
General inquiries: COPD Canada Tel: 416-465-6995
E-mail: exec.copdcanada@gmail.com*

Flu vaccine may be more effective in females than males

■ **Vancouver**/Data from seven recent influenza seasons in Canada showed the influenza vaccine may be more effective in females than males, according to study findings published in *Open Forum Infectious Diseases*. Between 2010-2011 and 2016-2017, overall vaccine effectiveness was 49% for females and 38% for males, according to Dr. Danuta Skowronski, MD, MHSc, FRCPC, physician epidemiologist at the BC Centre for Disease Control and clinical professor in the school of population and public health at the University of British Columbia, and colleagues. "As with other medical interventions, it has previously been assumed that males and females respond the same way to vaccination, but our findings question the validity of that assumption for influenza vaccine," Dr. Skowronski told *Infectious Disease News*. "The effect of sex on influenza vaccine protection that we observed was not large, and our findings cannot be considered conclusive."

 <https://tinyurl.com/yd2ks75w>

Study looks at women with asthma going on to develop COPD

■ **Toronto**/Researchers here have found that over 40% of women with asthma could go on to develop chronic obstructive pulmonary disease (COPD). Scientists looked at the long-term health records of 4,051 women with asthma living in Ontario. They found that 1,701 or 42% of the women went on to develop COPD. When a person has symptoms of both asthma and COPD, their condition is often referred to as asthma and COPD overlap syndrome (ACOS). People who have ACOS are more likely to have more flare-ups of their symptoms and to need more hospital treatment, and tend to feel more unwell than people who have just asthma or COPD. The researchers wondered why some women with asthma developed ACOS, and others did not. Using their health records, they compared a number of lifestyle and environmental risk factors among these women to see if there were any trends. Women who were heavy smokers were at a higher risk of going on to develop ACOS. Other factors associated with a higher risk of ACOS included obesity, living in rural areas, and being unemployed.

 <https://tinyurl.com/ycewvcsa>

Declining lung function associated with heart failure risk

■ **Boston**/Rapid decline in lung function, measured by serial spirometry, was associated with a greater incidence of heart failure and other cardiovascular disease outcomes, according to new research. Specifically, a rapid drop in forced expiratory volume in 1 second (FEV1) was associated with a four-fold increased risk of incident heart failure during the first year of follow-up in a community-based cohort of more than 10,000 participants enrolled in the prospective Atherosclerosis Risk in Communities (ARIC) study. Rapid decline in lung function measured by forced vital capacity (FVC) was associated with elevated heart failure risk throughout approximately 17 years of follow-up in the study online in the *Journal of the American College of Cardiology*. “Neither sex nor race significantly modified these associations,” wrote Amil Shah, MD, of Brigham and Women’s Hospital in Boston, and colleagues. “These findings demonstrate that deterioration in lung function is a predictor of incident cardiovascular disease, independent of smoking status and baseline lung function.”

 <https://tinyurl.com/y74ghcc7>

Annual lung cancer screening recommended in high-risk adults ages 55 to 74

■ **Ottawa**/The Canadian Task Force on Preventive Health Care now recommends screening using low-dose CT scans in high-risk adults aged 55 to 74 years who are current or former smokers with a smoking history of at least 30 pack-years, defined as the average number of packs smoked daily multiplied by the number of years of smoking. This is a big step in the fight against lung cancer, which is the leading cause of cancer related death in Canada. The earlier lung cancer is diagnosed, the better the opportunity for curative treatment. Much of the great improvement that has been seen in survival in cancers such as breast, colorectal and cervical have been due to finding the cancers earlier through regular testing, even of those at just moderate risk. Almost half (48%) of lung cancer diagnoses are made only when the cancer is already at stage 4, the most advanced stage, meaning it has already spread outside of the lung.

 <https://tinyurl.com/y94y8seb>

The joys of an active life

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strength and weaken, making many physical activities more difficult. As a consequence, you will need to breathe even harder. By keeping active your lung and muscles will keep working as well as they can while delivering the benefit of maintaining your general health. Activity will help reduce your breathlessness and tiredness, it will raise your energy levels, improve muscle strength, boost your self-esteem and mood.

Pace your activities based on your level of breathlessness

If you're not troubled by breathlessness except during strenuous exercise, it may help if you stick to a regular activity plan that includes moderate exercise at least five days per week (e.g., 30 minutes of brisk walking). If you find that you get out of breath when hurrying or walking up a slight hill, it may help if you plan activities in advance so you don't have to rush too much. Being short of time can cause you to panic, which can make breathlessness worse. If you're with friends or a companion, ask them to walk slower and don't be afraid to ask to stop for breath. Walk at your own pace. It's okay to be out of breath. Take slow deep breaths rather than fast inhalations and take rests as needed.

One of the simplest ways to control shortness of breath is to breathe through pursed lips, as if you were going to whistle. If you take deep breaths through the nose and release air through pursed lips, your airways will be open longer, which will help you regain a normal breathing rate.

You can try to build different activities into your daily routine in order to maintain your level of fitness. Activities such as gardening, incorporating daily stretching routines and taking short walks will all help support your fitness. If you can, try to join a pulmonary rehabilitation program.

Pulmonary rehabilitation

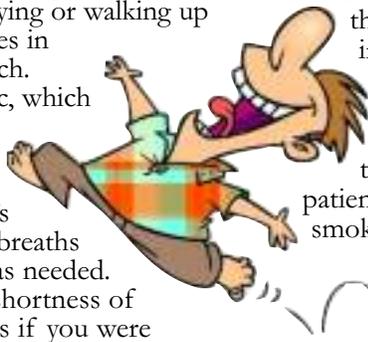
Pulmonary rehabilitation is a program that helps people with chronic lung disease learn to live more comfortably and independently in their community. It offers a supervised exercise program; stressing cardiovascular

fitness, upper and lower limb strength, endurance training, and energy conservation. You will learn breathing techniques. The rehab team performs a comprehensive assessment of your needs and develops an individual treatment plan. The goals of pulmonary rehabilitation are to alleviate symptoms, restore functional capabilities as much as possible and to reduce one's handicap, thus enhancing overall quality of life.

The larger pulmonary rehab facilities will have a team consisting of respiratory therapists, a registered nurse, dietitian, doctor, and social worker. Equipment at the centres can include treadmills, ergometers, recumbent steppers, recumbent bicycles, stationary bicycles, free weights and Nautilus-type strength training machines.

To attend pulmonary rehab the general rule of thumb is that your medical condition must be stable and you must be physically and emotionally able to participate in the program. To obtain maximum benefit, individuals are encouraged to attend the program three days per week for 12 weeks. However, in some rehab facilities there are individually devised programs for those who cannot attend the 12-week program. To attend the clinic all patients must be motivated to improve and must stop smoking or enter a smoking cessation program if it's offered. Quitting smoking is one of the best ways to slow the progression of COPD. Sometimes part of the motivation to quit smoking is the desire and need to be in a pulmonary rehab class.

For new patients a needs assessment is developed and then patients are introduced to breathing and relaxation techniques. Newcomers are shown how to conserve energy and utilize relaxation techniques to control general anxiety and stress. Prior to using the equipment patients are taught how to properly warm up before they start their exercises. The clinic may also give instruction on diet, as well as teaching the value of moderation in life. Patient-to-patient interaction within the rehab population is encouraged. Other patients are able to offer valuable advice through their personal experience and knowledge.



LivingWellwithCOPD.com



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The essential self-management education program for people living with COPD and their loved ones!

The basics of spirometry

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stages of COPD and should be tested.

A spirometry test requires you to breathe into a tube attached to a machine called a spirometer. Before you do the test, a nurse, a technician or your doctor will give you specific instructions. Listen carefully and ask questions if something is not clear. Doing the test correctly is necessary for accurate and meaningful results. In general, you can expect the following during a spirometry test:

- You'll likely be seated during the test.
- A clip will be placed on your nose to keep your nostrils closed.
- You will take a deep breath and breathe out as hard as you can for several seconds into the tube. It's important that your lips create a seal around the tube, so that no air leaks out.
- You'll need to do the test at least three times to ensure your results are relatively consistent. If there is too much variation among the three outcomes, you may need to repeat the test again. The highest value among three close test results is used as the final result.
- The entire process usually takes less than 15 minutes.

Your doctor may give you an inhaled medication to open your lungs (bronchodilator) after the initial round of tests. You'll need to wait 15 minutes and then do another set of measurements. The results of the two measurements will be compared to see whether the bronchodilator improved your airflow.

If you're still smoking, do not smoke for at least one hour before the test. Don't eat a large meal or drink alcohol within four hours of the test and wear loose clothing. Do not perform vigorous exercise within 30 minutes of the test.

If you are on puffer medications, you may be asked to not take them for a few hours before spirometry. Ask your doctor (or the clinic performing the test) beforehand if this applies to you. Key spirometry measurements include the following:

Forced vital capacity (FVC). This is the largest amount of air that you can forcefully exhale after breathing in as deeply as you can. A lower than normal FVC reading indicates restricted breathing.

Forced expiratory volume (FEV). This is how much air you can force from your lungs in one second. This reading helps your doctor assess the severity of your breathing problems. Lower FEV-1 readings indicate more significant obstruction.

If you have any doubts about your lungs or breathing concerns talk to your doctor about taking a spirometry test.

What is obstructive sleep apnea?

Sleep apnea is a serious sleep disorder that is characterized by periods of apnea (breathing pauses) during sleep. During an apneic episode, you may stop breathing for up to 10 seconds or more and, as your blood oxygen levels drop, you may awaken abruptly with a loud gasp or snort.

The number of apneic events you experience may be as high as 20 to 30 per night or more, and the effects may lead to serious health complications. It is often accompanied by loud, disruptive snoring.

It's not unusual for a person to have both sleep apnea and COPD. But, the presence of sleep apnea is not higher in COPD patients than in the general population. Having both disorders at the same time is certainly challenging though.

Obstructive sleep apnea (OSA) occurs when your throat muscles, including your tongue, relax during sleep and block your airway. Because many people with OSA are overweight, they often have an enlarged tongue and soft palate and/or excess fat in their throat area.

Although anyone can have sleep apnea, it is found most often in older men of African-American, Hispanic or Pacific Islander descent.

Other factors include being obese, having a large neck circumference (43 cm or 17 inches or more for men and 41.5 cm or 16 inches or more for women) as well as smoking and alcohol consumption.

Along with periodic episodes of apnea during sleep and intermittent snoring, symptoms of sleep apnea include excessive daytime sleepiness, morning headache and sore throat. You may find that there are changes in your personality and that you develop behavioural disorders such as bed wetting and possibly impotence. As well, your partner may begin complaining that you snore too loudly.

If you have OSA and you live alone, you may not even be aware of it. Paying close attention to your sleep patterns and your daytime symptoms will help you recognize a potential problem. If you think you may have OSA or, if your partner complains that your snoring is intense, it may be time to visit your healthcare provider for an evaluation and more information.

Both COPD and OSA are independent risk factors for heart problems that may include irregular heart-beat, high blood pressure, heart attack and stroke, and their coexistence may further increase these cardiovascular risks. This makes early identification of OSA in people with COPD extremely important.

Continuous positive airway pressure therapy (CPAP) uses a machine to help a person who has obstructive sleep apnea breathe more easily during sleep. A CPAP machine increases air pressure in your throat so that your airway doesn't collapse when you breathe in. Other non-surgical treatment options for OSA include using tongue-retaining devices or bite guards. Weight loss will also help if you are currently overweight. There are also a number of surgical interventions that you can discuss with your doctor.



COPD people

Gord Taylor

Gord Taylor spent his entire working life in the information processing field. His career began during the punch card era in the days before computers. When IBM introduced computers he was offered training as a programmer. Gord wrote code for the big, new, expensive mainframe computers. As an IT professional he began to move around as demand for his skills grew. Mainframes became so expensive that a need for computer service bureaus developed. Gord joined one of these bureaus, and subsequently formed his own IT consulting company. This provided him with the wherewithal to buy a 100-acre ranch in Fenelon Falls, Ont. From Fenelon Falls he would drive to Toronto a few days a week to continue his IT consulting business. He moved back to Toronto in 1976. His wife Angie is originally from Hong Kong and they visit her family there often. Their favourite international places to visit are those that provide "culture shock." He and Angie have traveled all over the former Soviet Union, from Irkutsk in Siberia to Tbilisi in the Georgian Republic. Their travels have also taken them to Europe, North Africa, and much of Asia. One trip included the last cruise down China's Yangtze River before it was flooded by completion of the Three Gorges Dam.

Before you were diagnosed with COPD were you aware that you had lung issues?

I was well aware of breathing issues back then, for at least 10 years prior to the diagnosis.

Did you notice that there were things you couldn't do?

I was a sailor. I owned a sailboat for 35 years. Operating a sailboat is a lot of physical work. Hauling halyards and cranking winches became more and more exhausting. As a result, I sailed less as years passed by. So, I sold the boat.

How were you diagnosed?

I had a chest X-ray that detected hyperinflation in the lungs. That led to further testing. They determined that I had COPD.

What happened then?

Nothing really. I was given a prescription for a bronchodilator and that was it. The doctor was going to see me again in a year.

How did that make you feel?

I wasn't happy. I wanted to know what could be done. I had a lot of questions; I badgered him a bit. He suggested that I try pulmonary rehab. Rehab could likely stop or slow the progression of the COPD if I attended diligently and put in the work.

Is that how you ended up in Toronto Western Hospital's Pulmonary Rehab program?

Yes. My family doctor referred me to Dr. Stanbrook, a respirologist at TWH. At Toronto Western they gave me a spirometry test, a stress test on a bike, and other breathing exams before I could join the rehab group. It's been a blessing.

You seem to be pretty engaged with the rehab group.

I like learning about others' experiences. You learn a lot from the other patients that you wouldn't necessarily learn from the doctors.

Do you exercise outside of rehab?

Nowhere near as much as I know I should. I've recently been looking for a gym near where I live. I'd like to have access to a treadmill. The weather's getting colder. So, I won't be able to walk outside for much longer. I can't be out in the cold very easily. It really affects my breathing. I need an inside facility.

When you were originally diagnosed, were you a smoker?

No, but I had smoked in the past. I didn't consider myself to be exclusively a cigarette smoker. I was an erratic cigarette smoker. At times I wouldn't smoke for extended periods. I also smoked cigars and pipes. I was something of a pipe aficionado. I believe I have one of the finest pipe collections I know of. Many were custom made.

Do you still have the collection?

Yes. The pipes are all packed away in a box in my basement. They're very fine quality. Collecting pipes was a hobby of mine.

Do you have any other hobbies?

Gone are the days of tennis, skiing and sailing, but I still ride a motorbike, weather permitting. I guess that's a bit of a hobby.

Do you speak Cantonese?

No. Just a few common phrases. I'm fascinated by the language though. I understand the structure. It's very logical. It's elegant in its simplicity.

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