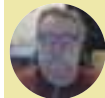


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Comorbidities can complicate the management of COPD

According to the Global Initiative for Chronic Obstructive Lung Disease (GOLD), 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% have at least two co-morbid conditions, and 17% report three. Signs and symptoms of comorbidities are important to recognize and report to your doctor.

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 co-existing 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 in the COPD definition by GOLD.¹

Chronic obstructive pulmonary disease 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 healthcare costs and creating therapeutic
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Chronic Obstructive Pulmonary Disease
www.copdcanada.info

Biologics—they're coming

The Food and Drug Administration (FDA) in the United States recently approved dupilumab (Dupixent) for treatment of chronic obstructive pulmonary disease with type 2 inflammation. Dupilumab is classified as a biologic medication.

Biologic medications differ from traditional chemistry-based pharmaceuticals in several ways. Biologics are made from living organisms, including humans, animals, or microorganisms. They are often large, complex molecules such as proteins, antibodies, or cells. Unlike traditional pharmaceuticals that are typically made from chemical synthesis which results in small, simpler molecules. Biologic medications are produced using biotechnology methods such as recombinant DNA technology, cell culture, and controlled gene expression.

The manufacturing involves genetically engineering cells to produce the desired therapeutic protein or antibody. Traditional pharmaceuticals are manufactured through chemical reactions and processes in a controlled lab
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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 I had COPD for many years when I started to display some serious symptoms such as trembling in my arms, loss of control of my legs and difficulty finding words. Initially, these were attributed to a possible neurological problem but in the end I was diagnosed with severe carbon dioxide retention which is a rare side effect of COPD. I am now on a BIPAP machine nightly which has kept this problem under control. Could you please explain the carbon dioxide retention issue as it seems to be unusual
Continued on Page 2

Ask Dr. Bourbeau

Continued from Page 1

and difficult to diagnose?

A COPD can evolve into chronic respiratory failure; chronic hypoxemia is the most common one for which patient may require long-term home oxygen. CO₂ retention is another form of chronic respiratory failure in COPD, also called hypercarbia, and is often associated with hypoxemia. A patient might be asymptomatic if it is not acute but as it is worsening, the patient can present with symptoms like you did. I am assuming that your symptoms are all related to hypercarbia which may not be the case without a complete evaluation. There are other causes of chronic hypercarbia such as hypoventilation syndrome and obesity hypoventilation syndrome. I don't know in your case if it is all related to COPD or COPD with another concomitant condition. This needs to be discussed with your physician and/or respirologist.

Q Why does chronic obstructive pulmonary disease seem to have a negative impact on swallowing? Are breathing and swallowing related?

A Swallowing is not usually affected by COPD although you may have the sensation after a copious meal to be full and out of breath. Difficulty swallowing needs to be investigated and do not assume this is caused by COPD

Q I have a phlegmy cough and suffer from shortness of breath a lot which I understand are possible warning signs of chronic obstructive pulmonary disease. It's hard for me to get around.

Can I test myself for COPD?

A No, you cannot test yourself but need to bring this to your physician's attention who will either be able to do a spirometry or refer you to a respirologist. COPD will be suspected in anyone with exposure for example to smoking and presenting with your symptoms. Other tests may also be needed such as chest X-ray and/or CT scan, blood tests and any tests your physician might feel pertinent to your condition.

Q When I have feelings of breathlessness it sometimes triggers anxiety, almost panic attacks. Can COPD cause these experiences of anxiety? Should I take medications to stop these debilitating feelings of anxiety?

A Yes, this is well known and can be part of the cycle known as "dyspnea anxiety dyspnea". As your dyspnea get worse, you can become more anxious (because you feel bad or apprehensive about a previous event) and then by breathing faster you induce more dyspnea because of a physiological phenomenon called "dynamic hyperinflation". This then makes you even more anxious. The best way to prevent and/or treat this is through the implementation of breathing techniques such as pursed lip breathing; also applying principles of energy conservation and relaxation. This is best learned as part of a self-management education program such as Living Well with COPD—<https://tinyurl.com/54mwtmws>—and by taking part in a pulmonary rehabilitation program. Remember that if you are better skilled to prevent or manage these attacks, you will be

more confident and less likely to escalate into an aggravation of a panic attack. Occasionally medication can be used but I would not recommend this to be the first step in the management of dyspnea/anxiety/panic attacks.

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 the past president of the Canadian Thoracic Society (CTS) and is a member of the scientific committee of GOLD.

We invite your questions. Please mail questions to: Ask Dr. Bourbeau 1460 The Queensway, Suite 212, Etobicoke, Ont. M8Z 1S4—or you can e-mail questions to: AskCOPDCanada@gmail.com. General inquiries: COPD Canada Tel: 416-456-0459 E-mail: exec.copdcanada@gmail.com

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Study warns: Don't rely on AI chatbots for accurate, safe drug information

■ **London, U.K.**/Patients should not rely on AI-powered search engines and chatbots to always give them accurate and safe information on drugs, conclude researchers in the journal *BMJ Quality & Safety*, after finding a considerable number of answers were wrong or potentially harmful. What's more, the complexity of the answers provided might make it difficult for patients to fully understand them without a degree level education, added the researchers. Last year, search engines underwent a significant shift thanks to the introduction of AI-powered chatbots, offering the promise of enhanced search results, comprehensive answers, and a new type of interactive experience, explained the researchers. A major drawback was the chatbot's inability to understand the underlying intent of a patient question. "Despite their potential, it is still crucial for patients to consult their health care professionals, as chatbots may not always generate error-free information. Caution is advised in recommending AI-powered search engines until citation engines with higher accuracy rates are available," they conclude.

 <https://tinyurl.com/yc42cup5>

Cardiovascular risk may take decades to erase after quitting for heavy smokers

■ **Seoul, South Korea**/Ex-smokers with a light lifetime smoking burden had a CVD risk similar shortly after quitting to those who have never smoked, according to results from a cohort analysis. However, findings from the retrospective study suggest that ex-smokers who smoked heavily may need to restrain from smoking for more than 25 years to have a cardiovascular risk similar to those who have never smoked. The time passed after quitting smoking and the subsequent changes in CVD risk "are not properly reflected in guidelines and contemporary clinical practice," according to Jun Hwan Cho, MD, from the Chung-Ang University Gwangmyeong Hospital in the Republic of Korea, and colleagues. "For instance, the latest clinical CVD risk stratification tool does not properly estimate the potential CVD risk of ex-smokers," they wrote in *JAMA Network Open*.

 <https://tinyurl.com/bddw4a36>

Pulse: News about COPD


Canadian survey reveals widespread lack of awareness about RSV

■ **Mississauga, Ont./**Data from a new survey has highlighted significant gaps in knowledge among older Canadians about respiratory syncytial virus (RSV), which is a common contagious respiratory virus. The virus can lead to severe outcomes, including pneumonia and hospitalization, and can have lasting impact on adults' daily function and independence. The survey assessed the awareness and attitudes of a representative sample of 1,000 Canadians aged 50 and above toward RSV and other respiratory illnesses, as well as the impact of these conditions on their life. RSV is a leading cause of respiratory illness in adults. According to the most recent data available, it is estimated to have caused more than five million infections, 470,000 hospitalizations, and 33,000 deaths among those aged 60 and above in high-income countries including Canada and the United States in 2019. Despite this high incidence, 46% of older Canadians surveyed had never heard of RSV.

 <https://tinyurl.com/45fvbwsr>

Asthma patients who smoke may benefit from COPD treatment

■ **San Antonio, Texas/**The lungs of patients with asthma who smoke begin to resemble those of patients with COPD, which may require changes in treatment, Brian Bizik, MS, PA-C, reported at the 16th Annual Allergy, Asthma & Immunology CME Conference. "They have lots of remodelling," Bizik, immediate past president of the Association of PAs in Allergy, Asthma and Immunology and pulmonary care coordinator of Terry Reilly Health Centers in Boise, Idaho, said during his presentation. These patients experience increases in smooth muscle mass, epithelial cell shedding, angiogenesis and subepithelial fibrosis, as well as increases in goblet cells, which make mucus. "You get more clumping of the epithelial cells, more blood vessels in the tissue. It gets bigger, thicker, boggy," he said. "You have this thickening and this fibrotic layer." Recommendations for treatment from the Global Initiative for Chronic Obstructive Lung Disease (GOLD) may help, Bizik added.

 <https://tinyurl.com/3u5c7jee>

COPD associated with age-driven factors

Comorbidities continued from page 1

dilemmas for health care providers.

One thing we've learned about COPD is that it seldom exists in a vacuum. 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. 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 report by Divo, et al² 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.

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 large 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 systemic inflammatory disease, the focus is shifting from solely on the lungs. Smoking and biomass exposure, along with genetic predisposition, are also major risk factors for developing COPD. Age is also a common risk factor for developing COPD but should not be overestimated.

Lung cancer and COPD may share certain risk factors, such as 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 (CVD), which also share common risk factors and seem to have a bidirectional inflammatory link with COPD that impairs outcomes for both diseases. Little is known about the real-world risk of CVD among people with COPD with no history of CVD.³ Systemic inflammation is the key for linking COPD and most of its dependent comorbidities. COPD remains a major health issue with a significant economic impact. The prevalence of COPD is rising in developing countries, resulting in increased direct and indirect costs of COPD to health care systems worldwide.

- 1 <http://www.goldcopd.org/guidelines-global-strategy-for-diagnosis-management.html>.
- 2 Divo M, Cote C, de Torres JP, 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
- 3 The COPD Digest Summer 2024 V9-1 <https://www.copdcanada.info/the-copd-digest>

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Season 3: COPD

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Chronic Lung Diseases

Researchers identify two COPD phenotypes

Biologics continued from page 1

environment. Biologics are large and complex structures with unique three-dimensional shapes. Their complexity often makes them more specific in their action. They often target specific components of the immune system or cellular pathways, providing highly targeted treatments. Examples include monoclonal antibodies that bind to specific antigens. Traditional pharmaceuticals generally work by interacting with enzymes, receptors, or other cellular targets to modify biological processes.

COPD is a complex disease with irreversible effects despite optimized treatments. Many patients continue to experience exacerbations that worsen lung function and quality of life. New biologics offer hope, but the early stage of identifying suitable candidates based on inflammation biomarkers may affect the effectiveness of these treatments. Ongoing research into drugs targeting specific inflammatory markers will help define the future use of these new therapies.

Over the last few decades, treatments tailored to individual patients have greatly improved outcomes for many diseases. This approach, known as precision medicine, means that treatments are designed based on each patient's unique characteristics, leading to better results with fewer side effects. For these treatments to work best, doctors need to identify specific targets within the disease and select patients who are most likely to benefit, based on certain traits and biological markers.

Most COPD patients have type 1 (T1) inflammation, with neutrophils being the main cells involved. However, up to 40% of patients may also have type 2 (T2)

“COPD is a complex disease with irreversible effects despite optimized treatments. Many patients continue to experience exacerbations that worsen lung function and quality of life. New biologics offer hope.”

inflammation, with increased eosinophil counts driven by other immune cells. These two types of inflammation can overlap, as seen with the role of IL-13 in COPD, Asthma-COPD Overlap (ACO), and asthma.

Researchers have identified two main COPD phenotypes that might benefit from targeted therapies: the eosinophilic exacerbating phenotype and the non-eosinophilic, predominantly neutrophilic phenotype. Previously, various monoclonal antibodies targeting specific inflammatory

pathways were tested for COPD but didn't show the desired results or had significant side effects.

Biologics have been successfully used for conditions like asthma and lung cancer as well as for the skin condition, atopic dermatitis. At this writing, dupilumab is still awaiting approval from Health Canada for its COPD indication and is working its way through a review by Canada's Drug Agency. For more information: <https://www.copdcanada.info/current-therapy-biologics>

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.



COPD Canada Facebook

Join our COPD Patient Support Group

<https://www.facebook.com/COPDCanada/groups>

Join Today: COPD Canada's Facebook Support Group is a gated community where members can communicate and share information with others going through the challenges of living with chronic obstructive pulmonary disease. **Membership is free-of-charge**, but you must ask to join the group. Once approved, you will be able to interact openly or confidentially with other members of the COPD Support Group

For more information contact: exec.copdcanada@gmail.com



COPD people

Jan Prins

Jan Prins lives with his wife near Victoria, B.C. Before moving out west his wife was a professional horse groomer working with thoroughbreds. He lived in Montreal and studied at McGill University. He also attended the Sorbonne in France. Upon graduating with an electrical engineering degree, Jan joined Schlumberger Limited, an American oilfield services company, the largest in the world. After completing his training with Schlumberger he and his wife moved to Vancouver. His work with Schlumberger sent him around the world. While in Egypt he jumped into a sump on one of the rigs to rescue a co-worker. A rubber hose they were using had cracked and was spewing hydrogen sulfide. During the rescue he inhaled large amounts of the gas which burnt out 37% of his lungs. Upon retirement, while he and his wife were visiting his sister in Hagensborg, B.C., they fell in love with the area and moved there. Their son Christopher is a locally famous chef who has taken up residence at a well-appointed lodge in the region. They lived in Hagensborg for a decade, until his COPD got so bad that they had to move to the Victoria area to be near his hospital and respiratory specialist.

Is your COPD stable?

It's slowly getting worse.

Did you have a spirometry test to determine your lung function?

I have lung function tests every six months. My FEV1 is at 27%. My respirologist likes to see me in person. We discuss my general health. We review my treatments to see what's working for me and what's not. We also spend a bit of time discussing any new treatments that are available.

You're a non-smoker. How do you think you developed COPD?

I know exactly where it came from. Breathing in the hydrogen sulfide. Hydrogen sulfide is a byproduct of gas exploration. It's released while working in the gas fields. It's a dangerous business. Schlumberger had its own hospital and doctors on site.

Do you have flare-ups, exacerbations?

While in Hagensborg if I had an exacerbation they would airlift me to Victoria. An ambulance service would move me to the Hagensborg airport, which is located at the top of a mountain. My house was in the valley. It was becoming more difficult as my condition worsened because of the time needed for me to get medical help. The forest fires were also difficult. Over two summers I was locked in the house unable to go outside because of the smoke. One summer the smoke was so bad I had to stay at the hospital where they have a special room with filters. I would stay in there until the smoke outside dissipated.

When you had exacerbations in the past did you always end up in hospital?

They would stabilize me, which usually took

about 24 hours. I would be given prednisone, a high dose of oxygen, antibiotics, very heavy-duty antibiotics. Cipro and minocycline. Usually I would be observed for 24 to 48 hours. One time I was there for 15 days before they could stabilize me.

How frequently do you exacerbate?

I haven't had an exacerbation in six months. I believe that my current medicines and oxygen have kept me out of hospital.

What kind of medicines do you take for your COPD?

Azithromycin, Trelegy, and Alvesco. My respirologist and I are looking into the new biologic, Dupixent. We're quite anxious for it to be approved and hopefully covered by BC Pharmacare.

Do you keep up with your annual vaccinations?

My wife and I get the high dose flu shots and now the COVID boosters when they become available.

Are you a religious person?

My major in university was classical engineering. My minor was theology. I was brought up in a strict Roman Catholic household. I was a choir boy, attended church regularly. It led to my curiosity about religion. I still have it and attend church, just not as regularly as I'd like.

Do you have any hobbies?

I'm a model builder. I build wooden ships.

Do you have any advice for people who are going through serious lung issues?

Fight. You have to fight and have a good mental attitude. Be bound and determined that you're not ready to go yet.

Meet Lucille



Lucille lives a busy life. She loves going out and being able to work. Lucille was still working at age 86, until her COPD symptoms worsened. At first, she was overwhelmed by her diagnosis and wasn't sure if she could manage it on her own.

Thankfully, the ProResp team ensures Lucille has the equipment she needs, and the knowledge and confidence to use her oxygen equipment safely, so she can get back to doing what she loves.

"I've dealt with a lot of people, but never have I come across a company where every single person is as knowledgeable, caring and helpful as with ProResp," said Lucille.

Lucille is grateful for her oxygen setup from ProResp, because it lets her get back to doing her favourite things again.

Helping people breathe right, at home.

