

Chronic Obstructive Pulmonary Disease

Hospital to Home Care

February 23, 2021

COPD Transition Team:

Christine Hinds RRT, CRE

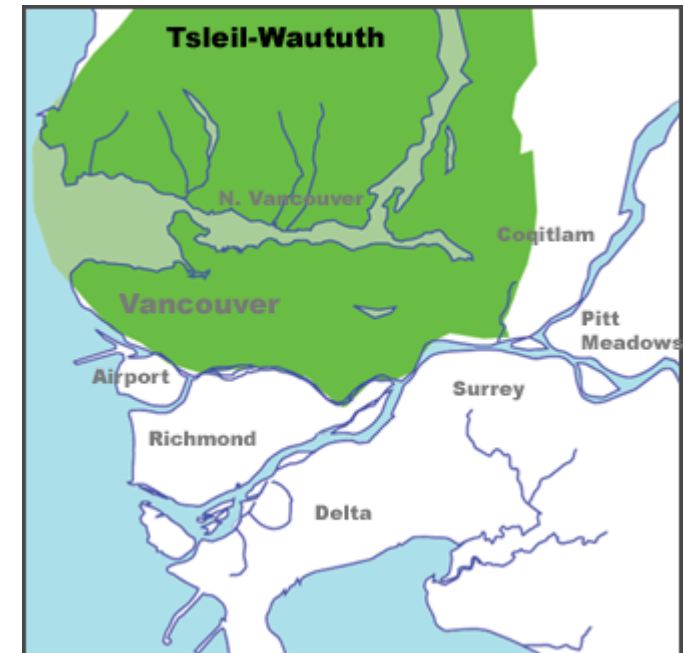
Laura Lotzer CRN, MN

Carmen Rempel RRT, CRE



Land Acknowledgement

We would like to acknowledge that we are gathered today on the traditional territories of the Musqueam, Squamish and Tsleil-Waututh peoples.



Source: www.johomaps.net

Chronic Obstructive Pulmonary Disease

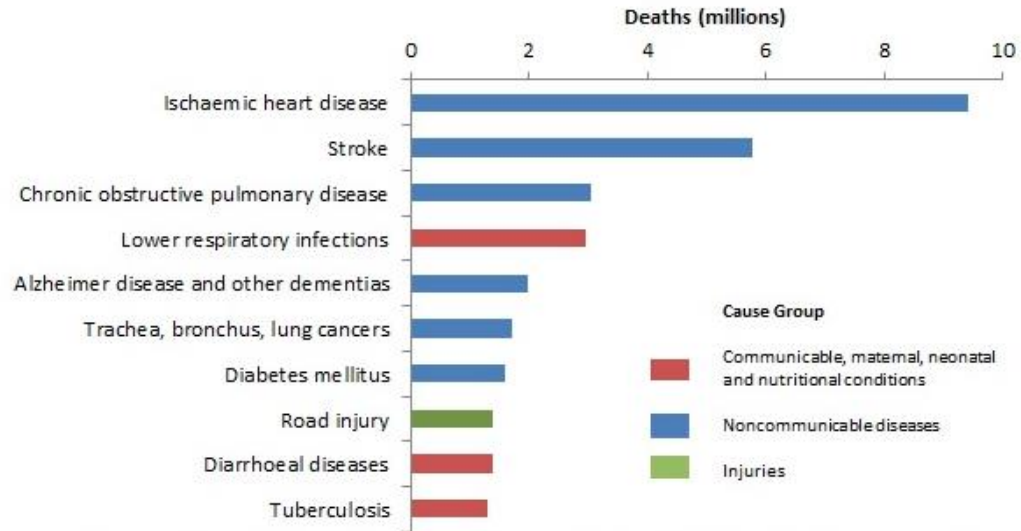
Learning objectives

Participants will:

- Have a general understanding of COPD from diagnosis to palliative care
- Understand the impact of a COPD exacerbation and the importance of preventing these events
- Be aware of new medications available and new Pharmacare criteria
- Be aware of community resources and referral pathways
- Be aware of impact of COVID-19 on COPD



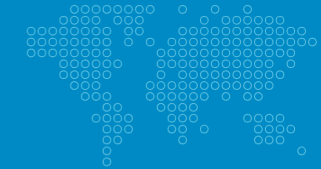
Top 10 global causes of deaths, 2016



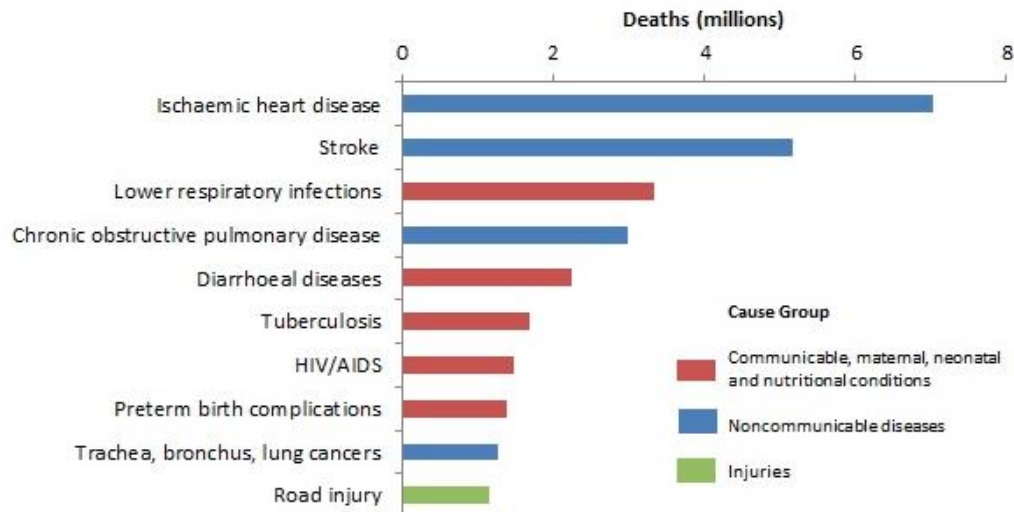
Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. Geneva, World Health Organization; 2018.

>3 million
people die

each year from COPD, an estimated 6% of all deaths worldwide



Top 10 global causes of deaths, 2000



Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. Geneva, World Health Organization; 2018.

Prevalence

Canada (excluding territories) ³				
Both sexes				
Chronic obstructive pulmonary disease (COPD; 35 years and over) ^{5, 6}				
Age group	Number of persons		Percent	
	2018	2019	2018	2019
35 to 49 years	107,700	90,300	1.5	1.2
50 to 64 years	282,600	298,600	3.7	4.0
65 years and over	457,000	453,700	7.5	7.2

How to cite: Statistics Canada. [Table 13-10-0096-19 Chronic obstructive pulmonary disease \(COPD\), 35 years and over](#)
DOI: <https://doi.org/10.25318/1310009601-eng>

British Columbia (map)				
Both sexes				
Chronic obstructive pulmonary disease (COPD; 35 years and over) ^{5, 6}				
Age group	Number of persons		Percent	
	2018	2019	2018	2019
35 to 49 years	10,100 ^E	F	1.1 ^E	F
50 to 64 years	29,300 ^E	41,700 ^E	2.9 ^E	4.2 ^E
65 years and over	59,000	66,000	6.8	7.3

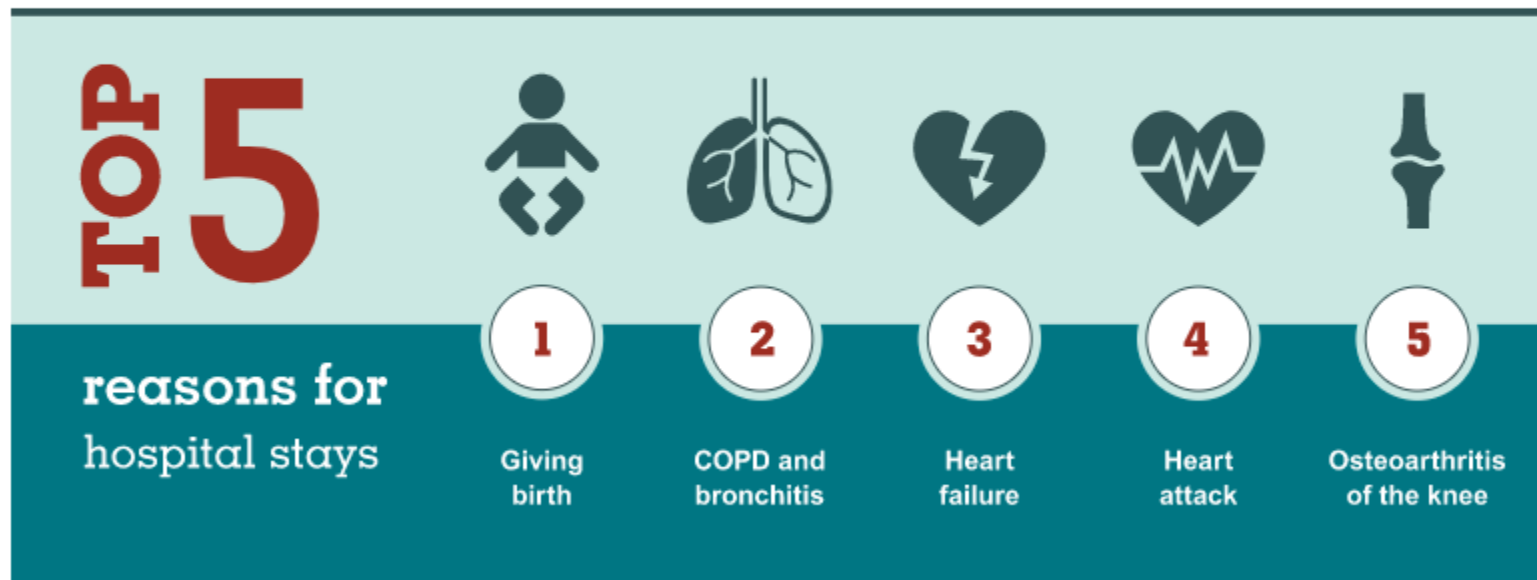
Symbol legend:

E use with caution
 F too unreliable to be published



How to cite: Statistics Canada. [Table 13-10-0096-19 Chronic obstructive pulmonary disease \(COPD\), 35 years and over](#)
DOI: <https://doi.org/10.25318/1310009601-eng>

Hospital stays in Canada



COPD costs the health care system an estimated

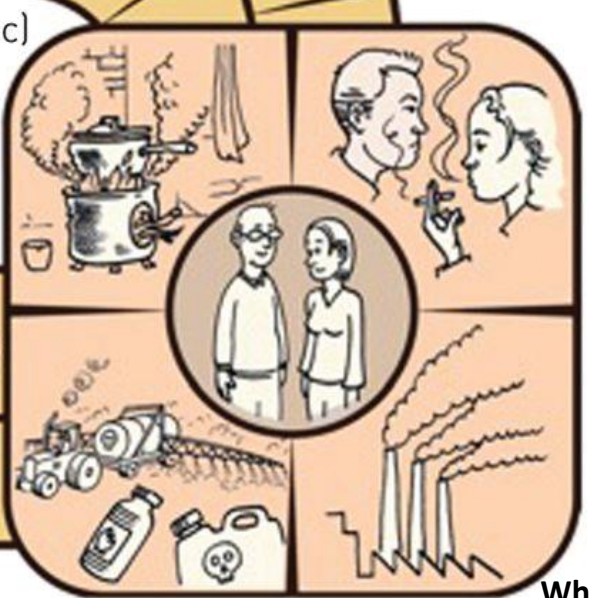
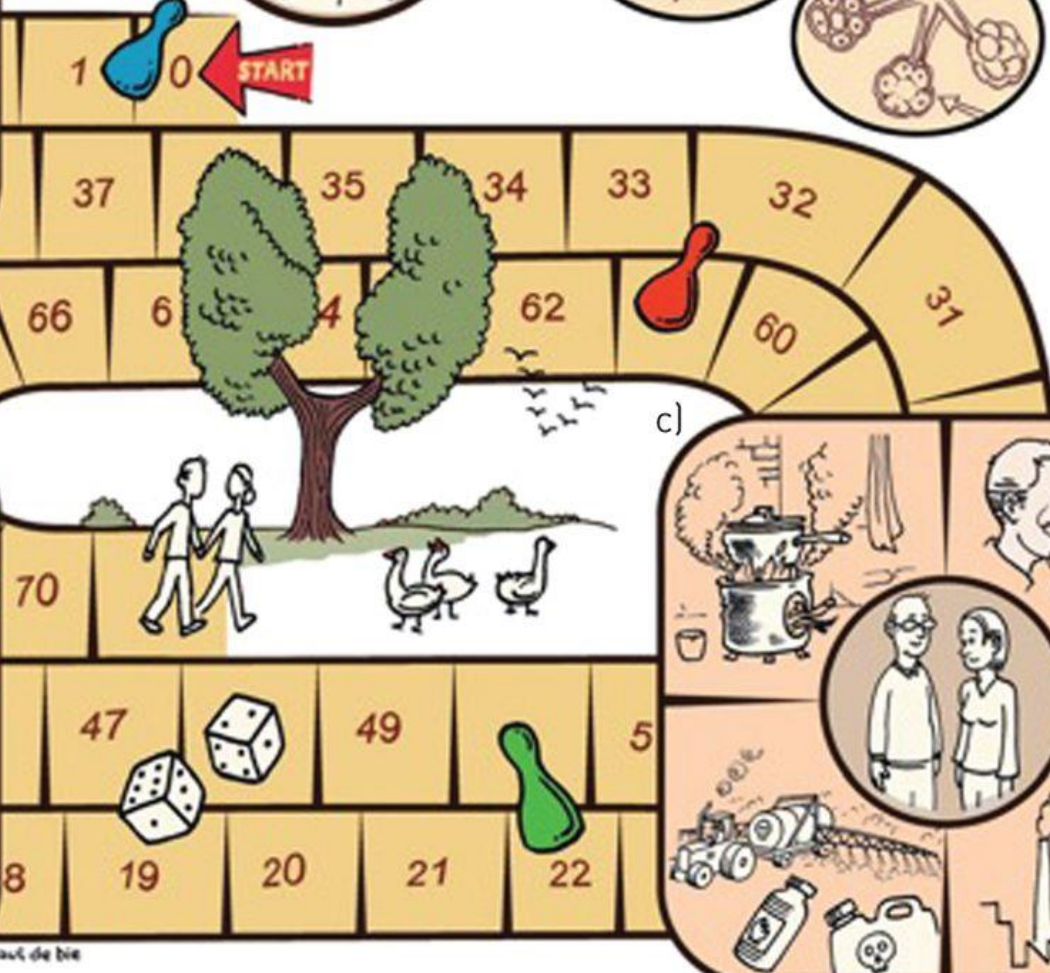
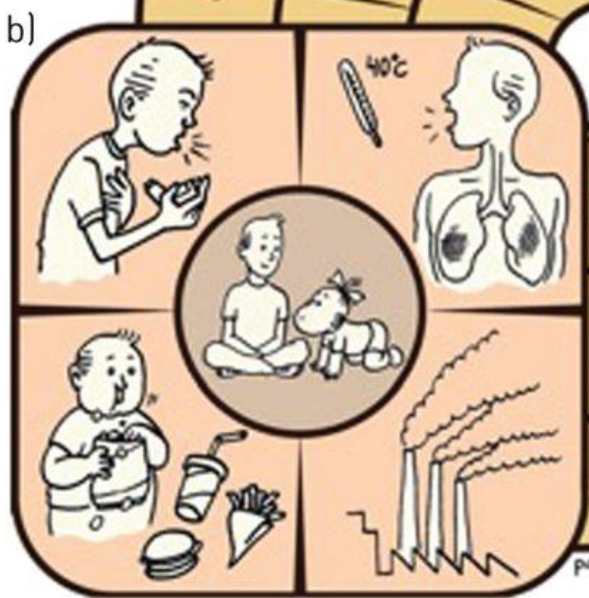
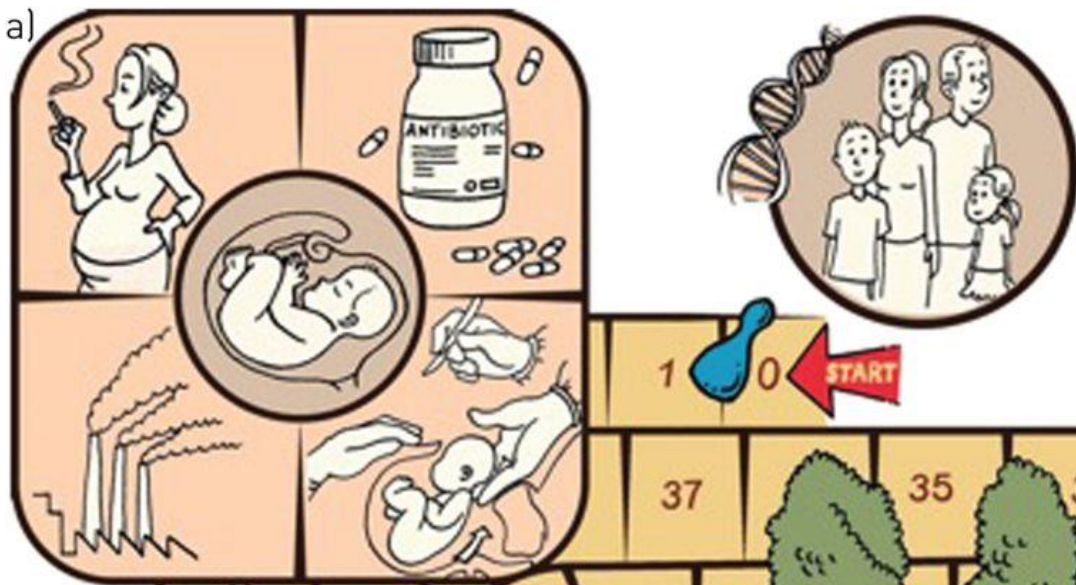
1.5 billion annually

Age group	Most responsible diagnosis for inpatient hospitalizations in 2018–2019		Number of inpatient hospitalizations in 2018–2019	Percentage* of inpatient hospitalizations in 2018–2019	Average acute length of stay of inpatient hospitalizations in 2018–2019
65+	1	COPD and bronchitis	69,678	5.2	7.6
	2	Heart failure	61,602	4.6	9.1
	3	Osteoarthritis of the knee	45,380	3.4	3.1
	4	Acute myocardial infarction	42,833	3.2	5.7
	5	Pneumonia	39,913	3.0	8.0
	6	Other medical care (e.g., palliative care, chemotherapy)	34,122	2.6	9.8
	7	Organic mental disorders (including Alzheimer's)	33,615	2.5	16.7
	8	Fracture of femur	33,211	2.5	10.9
	9	Cerebral infarction	27,432	2.1	10.4
	10	Coxarthrosis (arthrosis of hip)	25,181	1.9	3.3
B.C.	1	Giving birth	41,611	10.0	2.4
	2	Substance use disorders	11,049	2.7	4.5
	3	Osteoarthritis of the knee	10,822	2.6	2.7
	4	COPD and bronchitis	9,880	2.4	6.9
	5	Pneumonia	9,014	2.2	6.8
	6	Acute myocardial infarction	8,991	2.2	4.7
	7	Heart failure	8,907	2.1	8.5
	8	Mood (affective) disorders	8,470	2.0	13.4
	9	Schizophrenia, schizotypal and delusional disorders	7,591	1.8	15.8
	10	Coxarthrosis (arthrosis of hip)	6,795	1.6	2.6

Definition

COPD is a common , preventable and treatable disease that is characterized by persistent respiratory symptoms and airflow limitation due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gas

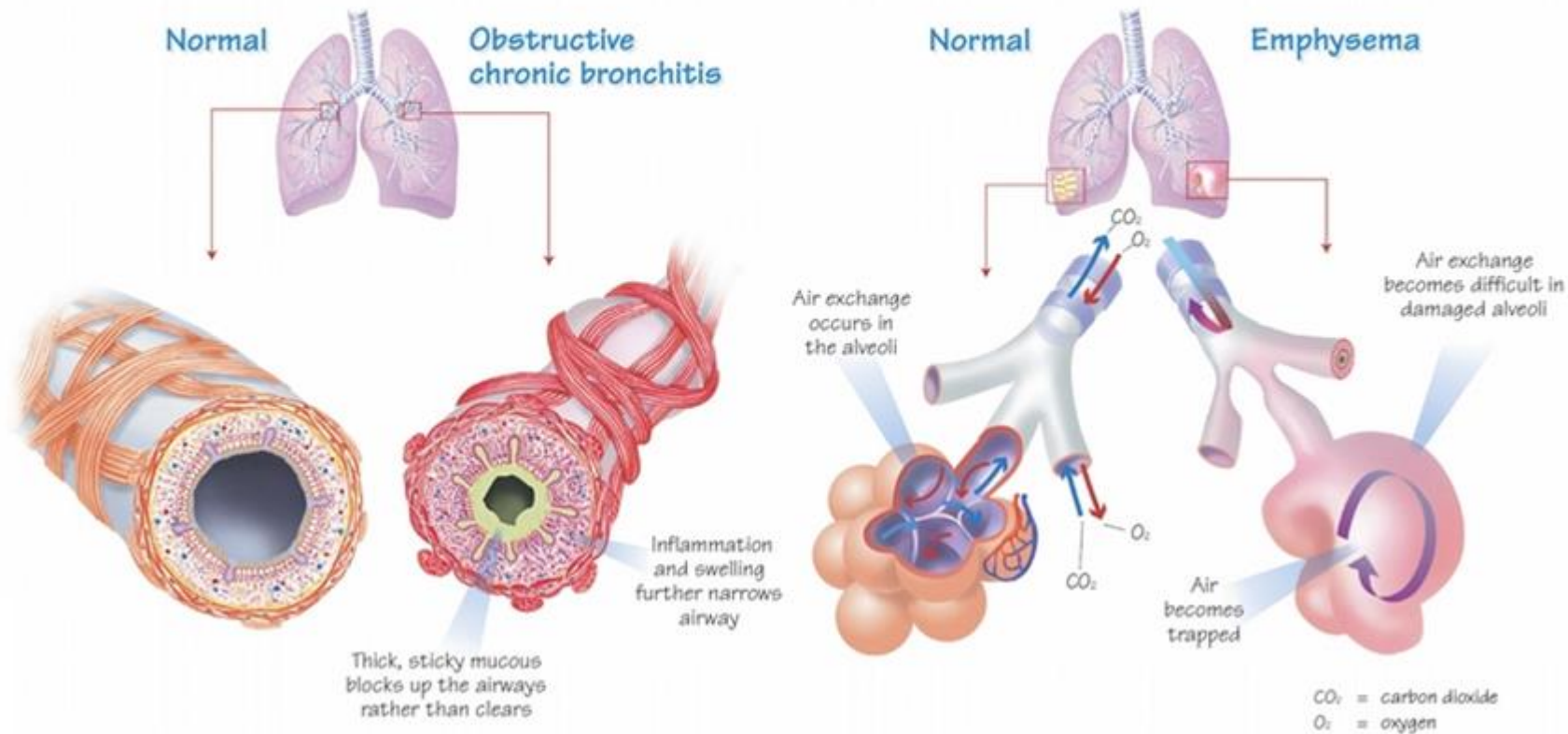
The most common respiratory symptoms are dyspnea, cough and/or sputum production



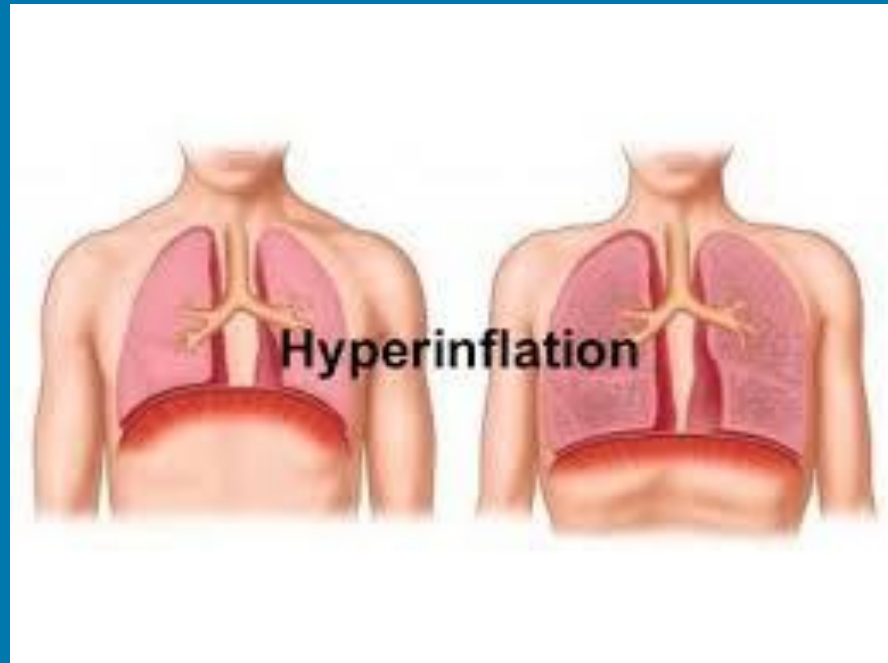
What is early COPD and why is it important?
 Joan B. Soriano, Francesca Polverino, Borja G. Cosío
 European Respiratory Journal 2018 52: 1801448;

What is COPD?

OBSTRUCTIVE CHRONIC BRONCHITIS AND/OR EMPHYSEMA



Hyperinflation



Dynamic Hyperinflation

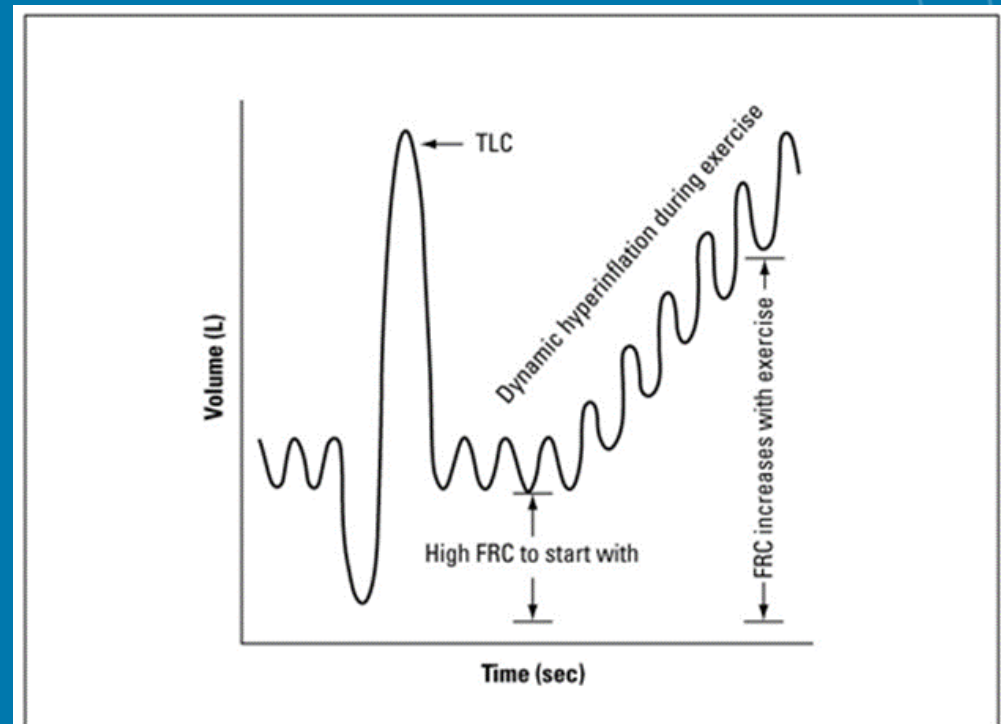
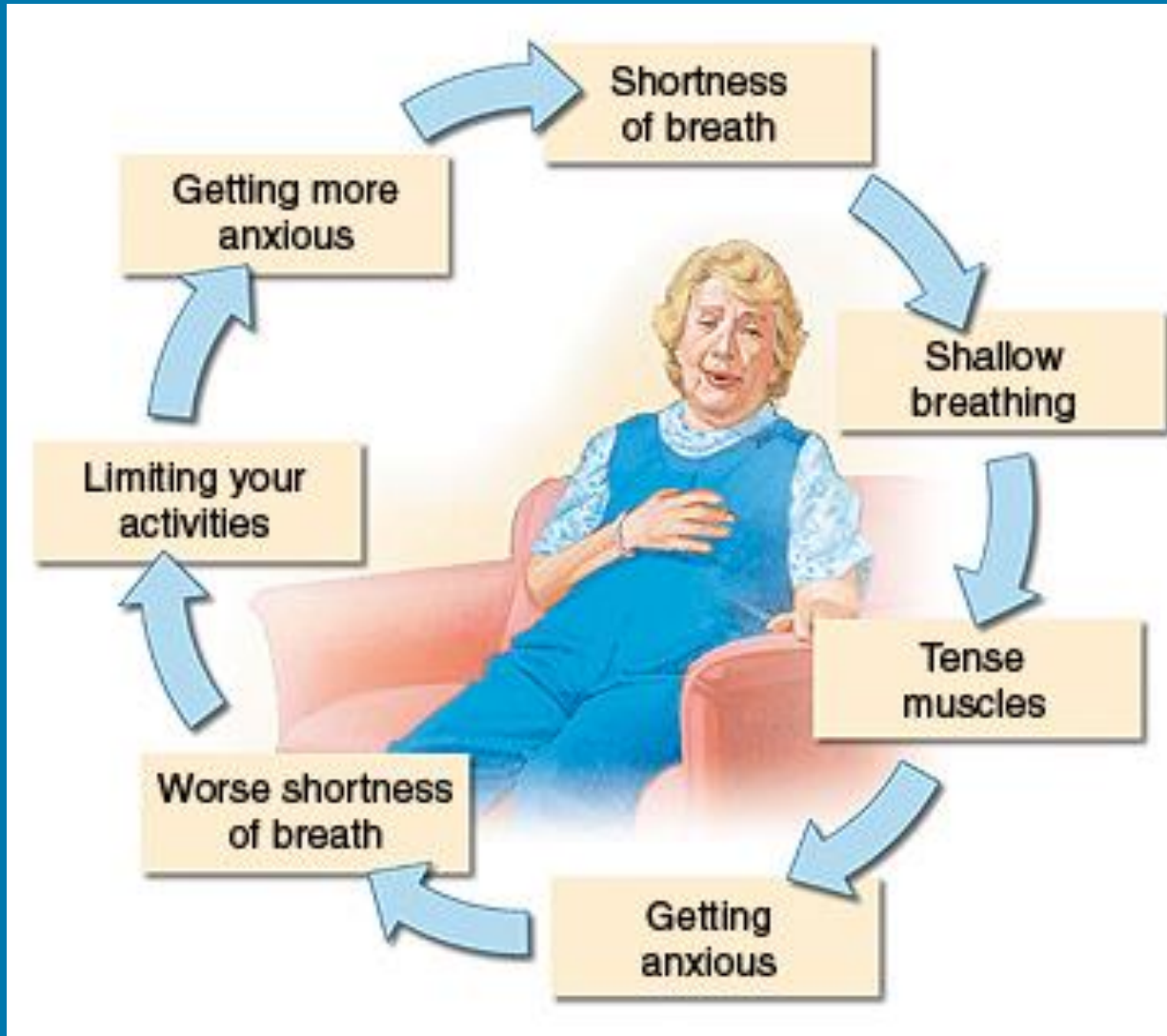


Figure 1. Dynamic hyperinflation in patients with emphysema during exercise.

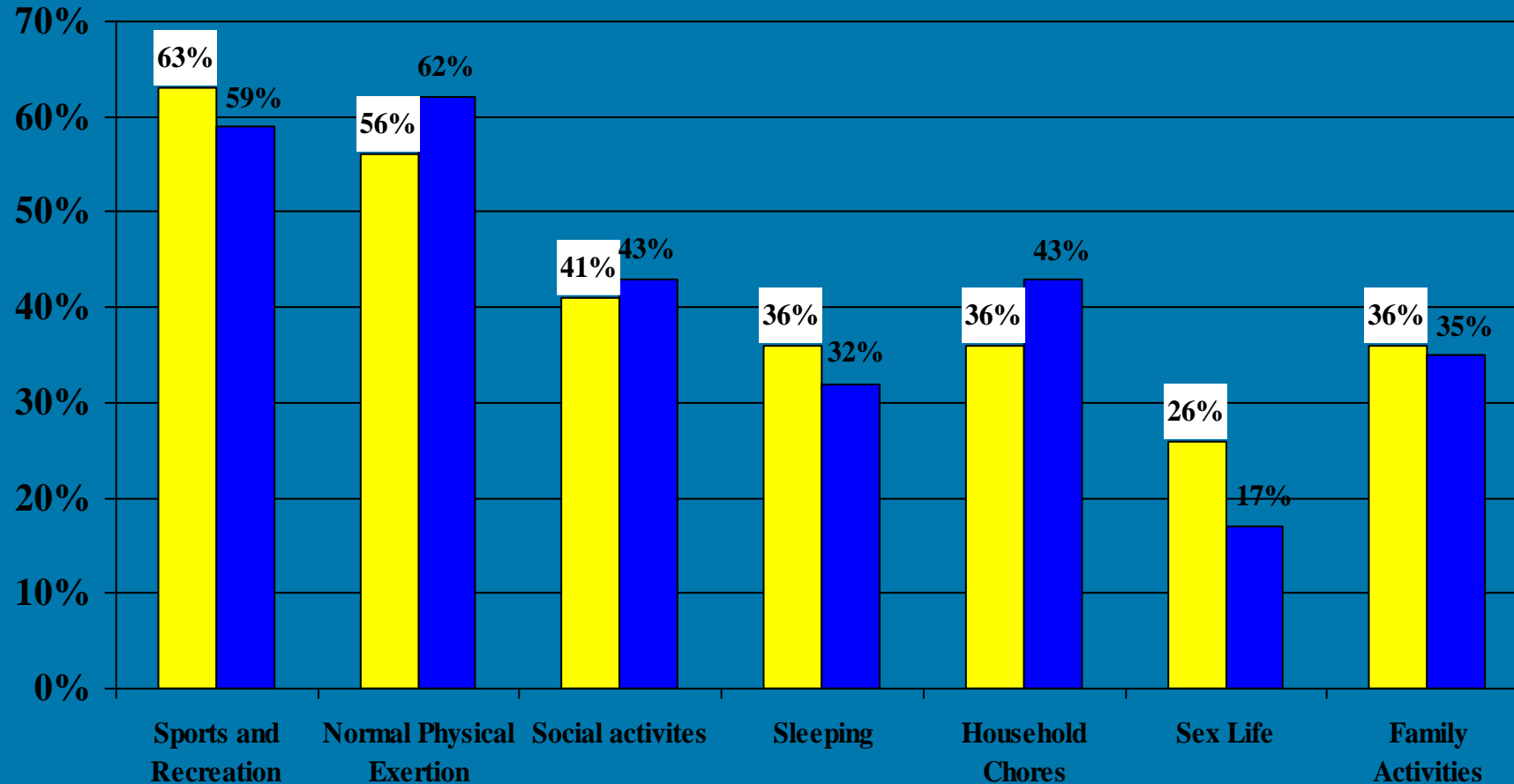
FRC: functional residual capacity TLC: total lung capacity

The Cycle of breathlessness



Respiratory Condition Limits What You can Do

Persons with COPD



Using Breathing Techniques Will Help You:

Manage Breathlessness

Pursed-lip breathing can be used any time, to help manage breathlessness and help you get air into your lungs.

To purse your lips, press them close together as if you are going to whistle.



Close mouth, breathe in slowly and deeply through the nose.



Purse lips, breathe out slowly and deeply through the mouth.

Catch Your Breath

Get into a standing or sitting position to help catch your breath.

It's important to be relaxed, and focus on your breathing.



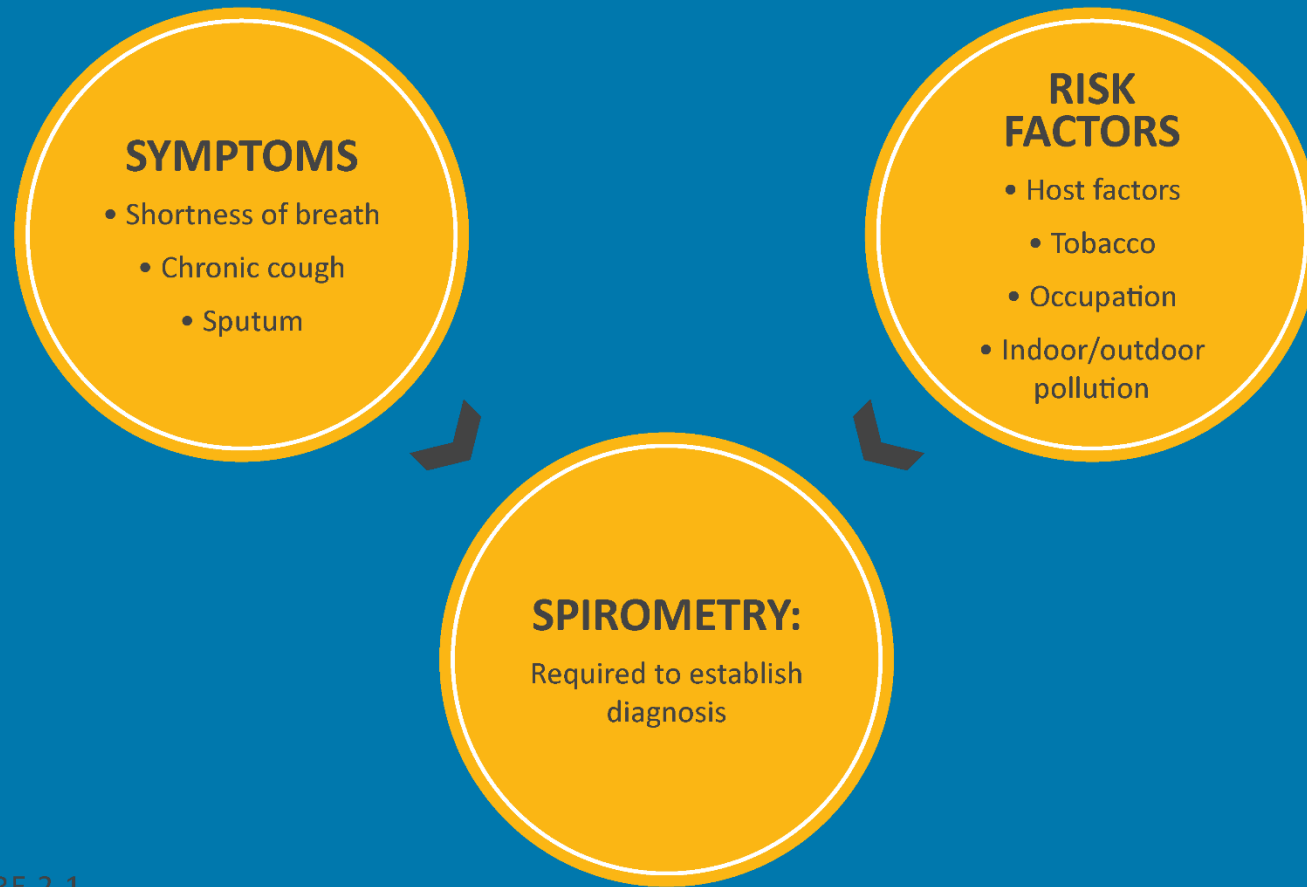
Sitting: Support head and relax



Standing: Lean forward against a wall or table and relax

Prevent and Prepare

▶ PATHWAYS TO THE DIAGNOSIS OF COPD



Routine Medical Tests

- For heart disease - ECG
- For diabetes – blood glucose/HbA1c
- For hypertension – blood pressure
- For lung disease – **spirometry!**

Spirometry is required for diagnosis of asthma and COPD

Pulmonary Function



THE
LUNG
CENTRE

The Lung Centre
7th Floor - 2775 Laurel Street
Spirometry Report

Name: [REDACTED] Age: 74 Interpreting Physician: [REDACTED]
 ID# [REDACTED] Sex: F Ordering Physician: [REDACTED]
 DOB: [REDACTED] Height (cm): 159 Indication for Test: [REDACTED]
 Exam date: 11/21/2019 Weight (kg): 34
 Exam time: 9:21:22 AM B.M.I.: 13.4 Respiratory Meds: Advair 2 hrs prior
 Smoke Hx: [REDACTED] Ethnicity: Caucasian

Technician: [REDACTED] Test Room: Lab 1 CC: [REDACTED]
 CC: [REDACTED]

Technical Comments:

Oximetry on 2 lit O2 on pulse setting : Resting :89-92 %, 77-81 bpm.
 PEF is not repeatable, test is not valid, interpret with caution.
 The end of test plateau was not reached so FVC may be underestimated.
 Inspiratory portion of the flow-volume loop was sub-maximal on all efforts.

Spirometry	Pre	Normal Range - Ref. Values				Post -			
	Best	LLN	ULN	Ref	% Ref	Best	% Ref	% Chng	Change (L)
FVC(L)	1.29	1.9		2.59	50	---	---	---	---
FEV1(L)	0.56	1.4		2.00	28	---	---	---	---
FEV1/FVC(%)	43	66	92	78		---	---	---	---
FEF25-75(L/S)	0.23	0.7		1.64	14	---	---	---	---
PEF(L/S)	1.96	3.4		5.12	38	---	---	---	---
FET(Sec)	5.93					---	---	---	---
FIVC(L)	1.11	---		0.00	---	---	---	---	---
FIV1(L)	1.08	---		0.00	---	---	---	---	---

Flow-Volume

Volume-Time

FVC = the volume of air you can exhale forcefully after a maximal inhalation

FEV₁ = volume of air you can blow out in the first one second of a forceful exhalation (gives indication of severity of disease)

FEV₁/FVC - COPD < 0.70

CLASSIFICATION OF AIRFLOW LIMITATION SEVERITY IN COPD (BASED ON POST-BRONCHODILATOR FEV₁)

In patients with FEV₁/FVC < 0.70:

GOLD 1:	Mild	FEV ₁ ≥ 80% predicted
GOLD 2:	Moderate	50% ≤ FEV ₁ < 80% predicted
GOLD 3:	Severe	30% ≤ FEV ₁ < 50% predicted
GOLD 4:	Very Severe	FEV ₁ < 30% predicted

TABLE 2.4

Figure 6. The Modified Medical Research Council Dyspnea Scale

mMRC Breathlessness Scale

Grade	Description of Breathlessness
0	I only get breathless with strenuous exercise
1	I get short of breath when hurrying on level ground or walking up a slight hill
2	On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace
3	I stop for breath after walking about 100 yards or after a few minutes on level ground
4	I am too breathless to leave the house or I am breathless when dressing

Chris Stenton. The MRC breathlessness scale. *Occup Med (Lond)*(2008)58(3): 226-227 doi:10.1093/occmed/kqm162, Table 1.
By permission of Oxford University Press on behalf of the Society of Occupational Medicine.
A mMRC score of 1 or more suggests significant symptoms.



Your name:

Today's date:

How is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional to measure the impact that COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers and test score can be used by you and your healthcare professional to help improve the management of your COPD and gain the greatest benefit from the treatment.

If you wish to complete the questionnaire by hand on paper, please click here and then print the questionnaire.

For each item below, place a mark (X) in the box that best describes your current situation. Please ensure that you only select one response for each question.

Example: I am very happy (0) (X) (2) (3) (4) (5) I am very sad

	SCORE
I never cough (0) (1) (2) (3) (4) (5) I cough all the time	<input type="text"/>
I have no phlegm (mucus) on my chest at all (0) (1) (2) (3) (4) (5) My chest is full of phlegm (mucus)	<input type="text"/>
My chest does not feel tight at all (0) (1) (2) (3) (4) (5) My chest feels very tight	<input type="text"/>
When I walk up a hill or a flight of stairs I am not out of breath (0) (1) (2) (3) (4) (5) When I walk up a hill or a flight of stairs I am completely out of breath	<input type="text"/>
I am not limited to doing any activities at home (0) (1) (2) (3) (4) (5) I am completely limited to doing all activities at home	<input type="text"/>
I am confident leaving my home despite my lung condition (0) (1) (2) (3) (4) (5) I am not confident leaving my home at all because of my lung condition	<input type="text"/>
I sleep soundly (0) (1) (2) (3) (4) (5) I do not sleep soundly because of my lung condition	<input type="text"/>
I have lots of energy (0) (1) (2) (3) (4) (5) I have no energy at all	<input type="text"/>
TOTAL SCORE	<input type="text"/>

Make sure you print your CAT before visiting your healthcare professional!

A COPD assessment test was developed by an interdisciplinary group of international COPD experts with support from GSK. GSK's activities in connection with the COPD assessment test are monitored by a supervisory council that includes external, independent experts, one of which is chair of the council.

CAT score	Impact level
5	Normal
<10	Low
10-20	Medium
>20	High
>	Very high

Change of 2 or more units over 2-3 months suggests clinically significant difference or a change in health status

Catestonline.org



THE REFINED ABCD ASSESSMENT TOOL

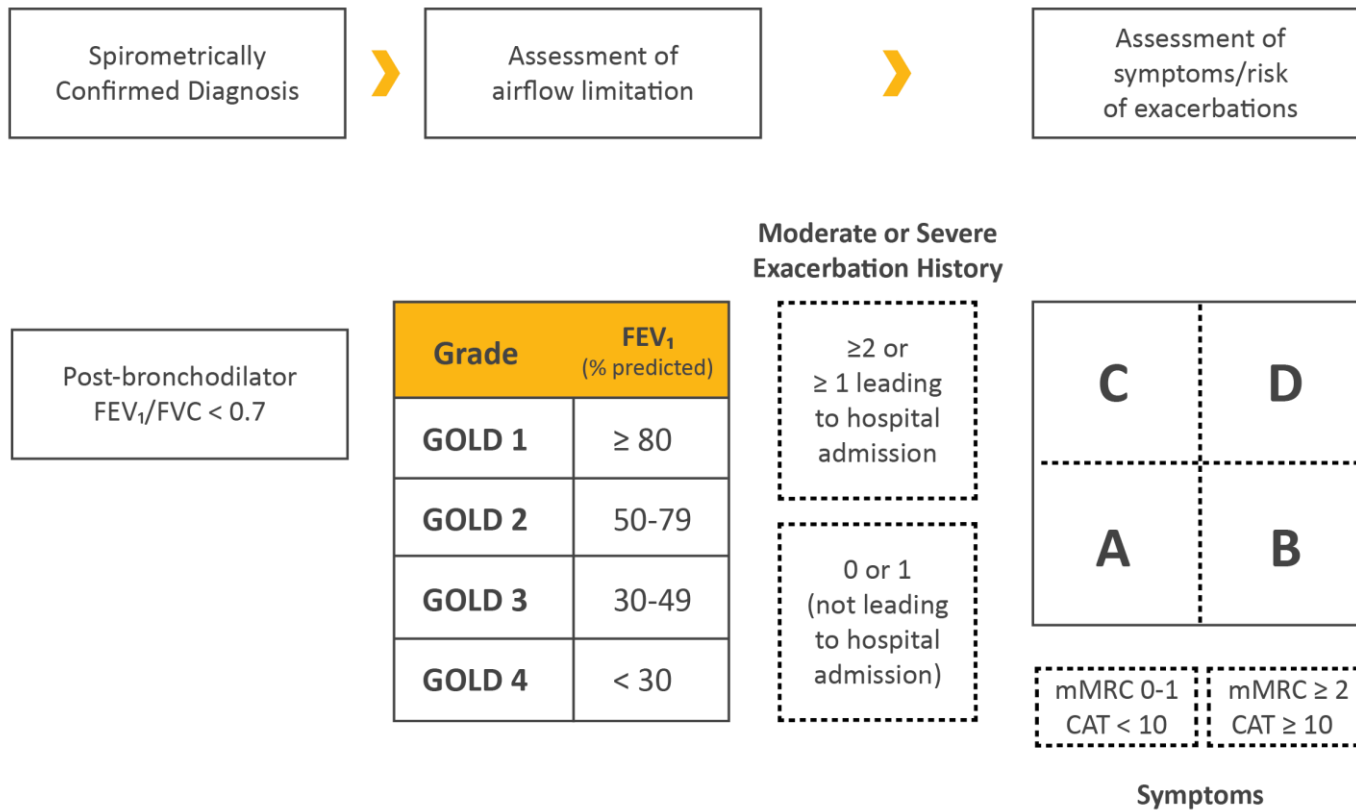


FIGURE 2.4

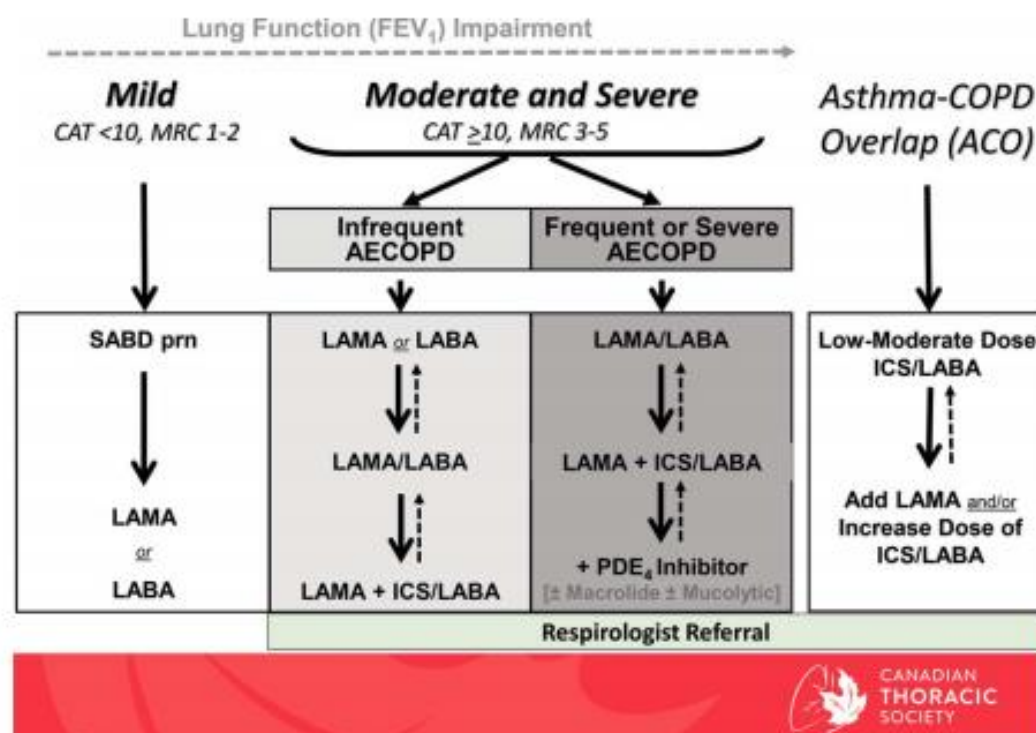
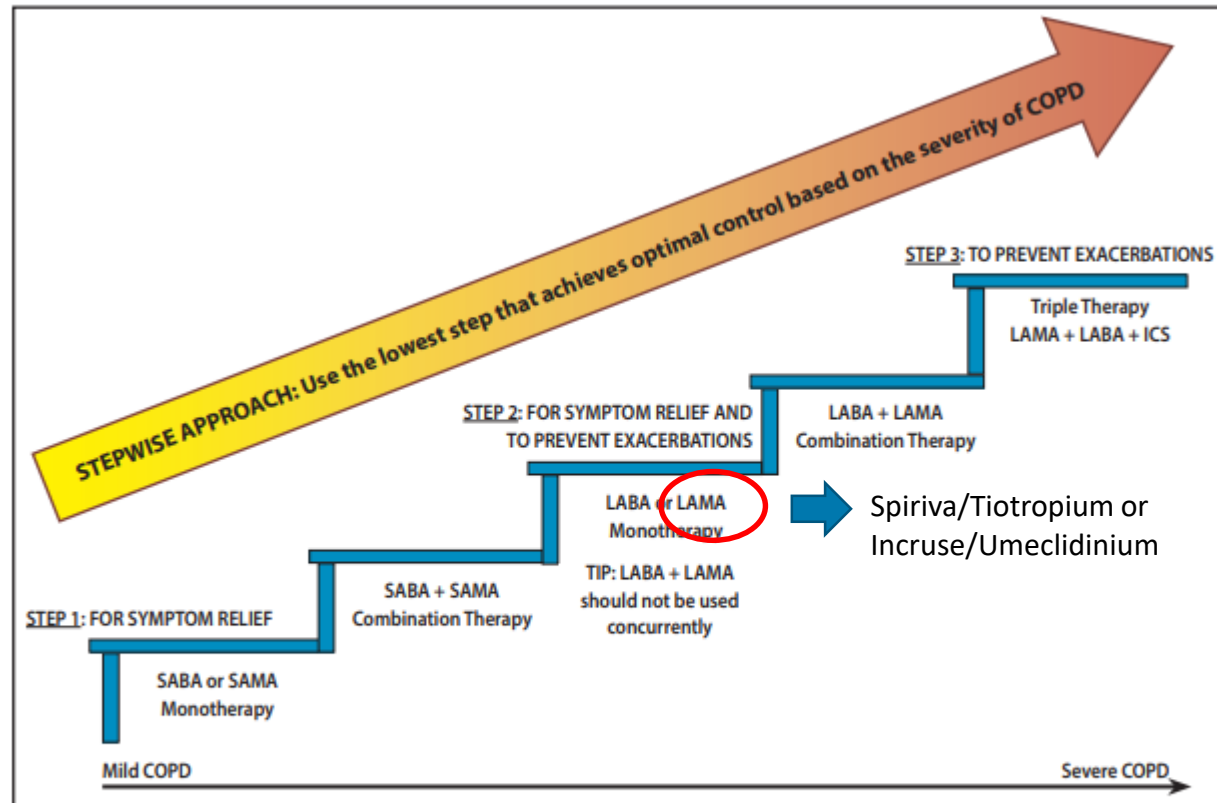


Figure 2. COPD Pharmacotherapy. Suggested COPD pharmacotherapy promoting an approach that matches treatment decisions with symptom burden and risk of future exacerbations. Solid arrows indicate step up therapy to optimally manage symptoms of dyspnea and/or activity limitation, as well as the prevention of AECOPD where appropriate. Dashed arrows indicate potential step down of therapy, with caution, and with close monitoring of the patient symptoms, exacerbations and lung function. Frequent AECOPD is ≥ 2 events requiring antibiotics \pm systemic corticosteroids over 2 years; or ≥ 1 Severe AECOPD requiring hospitalization. As-needed (prn) use of short-acting bronchodilator should accompany all recommended therapies. CAT = COPD assessment test; MRC = Medical Research Council; SABD prn = short-acting bronchodilator as needed; AECOPD = acute exacerbation of COPD; LAMA = long-acting muscarinic antagonist; LABA = long-acting B₂-agonists; ICS = inhaled corticosteroid; PDE₄ = phosphodiesterase-4.

Figure 1. Stepwise approach to pharmacologic management based on severity of COPD



Abbreviations: COPD = chronic obstructive pulmonary disease; ICS = inhaled corticosteroid; LABA = long-acting beta₂-agonist; LAMA = long-acting antimuscarinic antagonist; SABA = short-acting beta₂-agonist; SAMA = short-acting muscarinic antagonist.

COPD MEDICATIONS

Short-Acting Bronchodilators

Long-Acting Bronchodilators

Combination Inhalers

SAMA

(Short-Acting Muscarinic Antagonist)
USE REGULARLY or PRN



Atrivent® MDI
(ipratropium bromide)
20 mcg/dose
Duration: 4-6h
Company: BI
*Nebules also available

SABA

(Short-Acting Beta2-Agonist)
USE REGULARLY or PRN
*RESCUE MEDICATION



Airmir® MDI
(salbutamol sulphate)
100 mcg/dose
Duration: 4-6h
Company: Valeant

LAMA

(Long-Acting Muscarinic Antagonist)
USE REGULARLY



Incruse® Eliпта®
(umeclidinium bromide)
62.5 mcg/dose
Duration: 24h
Company: GSK

LABA

(Long-Acting Beta2-Agonist)
USE REGULARLY



Foradil® Aeralizer®
(formoterol fumarate)
12 mcg/dose
Duration: 12h
Company: Novartis

ICS/LABA

(Inhaled Corticosteroid/Long-Acting Beta2-Agonist)
USE REGULARLY
*Gargle and spit after each use



Advair® Diskus®
(fluticasone propionate/
salmeterol xinafoate)
100/50, 250/50, 500/50 mcg
doses
Duration: 12h
Company: GSK
*Only the Advair® Diskus® has been
approved for COPD use.

SAMA and SABA

USE REGULARLY



Combivent® Respimat®
(ipratropium bromide/salbutamol
sulphate)
20/100 mcg/dose
Duration: 4-6h
Company: BI
*Nebules also available

Additional Medications

Oral Corticosteroid (OCS):
Prednisone (Apothea, Teva, Jaeger, Pro Doc
Ltd)

Methylxanthines:
(e.g. theophylline, oxalpyrine, etc.)

Phosphodiesterase-4 inhibitor:
Daxas® (roflumilast) (Takeda)

Company Key:

AZ - AstraZeneca Canada Inc.
BI - Boehringer Ingelheim (Canada) Ltd
GSK - GlaxoSmithKline Inc.
Novartis - Novartis Pharmaceuticals Canada Inc.
Takeda - Takeda Canada Inc.
Valeant - Valeant Canada

Dose = one inhalation
MDI = Metered Dose Inhaler

* Maximize drug delivery & decrease side effects by using a valved holding chamber with a metered-dose inhaler.
* Video instructions found at: www.sl.lung.ca/devices
* Product information found at: www.sl.lung.ca/drugs
* Detailed information on the drugs can be found on the Canada Product Database at: <https://health-products.canada.ca/dp6-6d9/index-eng.jsp>
* Additional RESPITREC resources and most current electronic versions available at: www.sl.lung.ca/resptrec-resources
* Note: may not be a complete list of COPD medications

BREATHE
the lung association

Coastalhealth

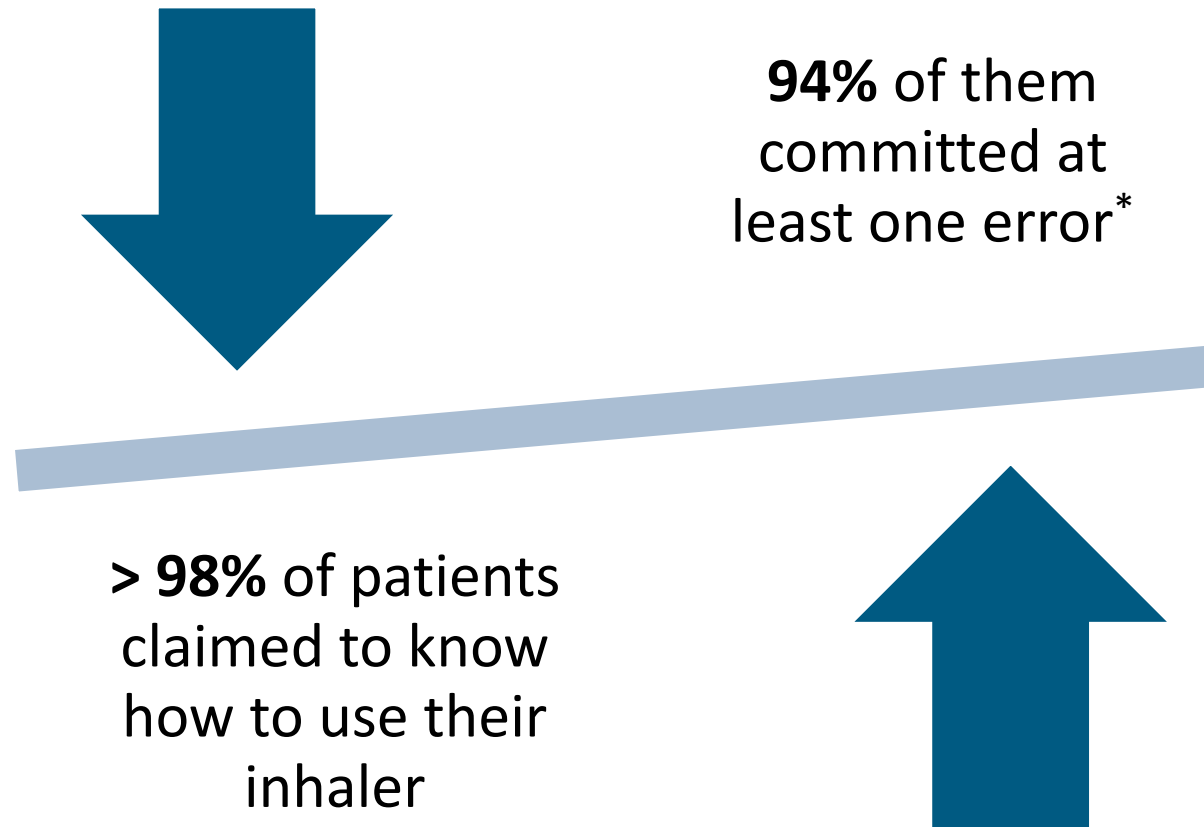
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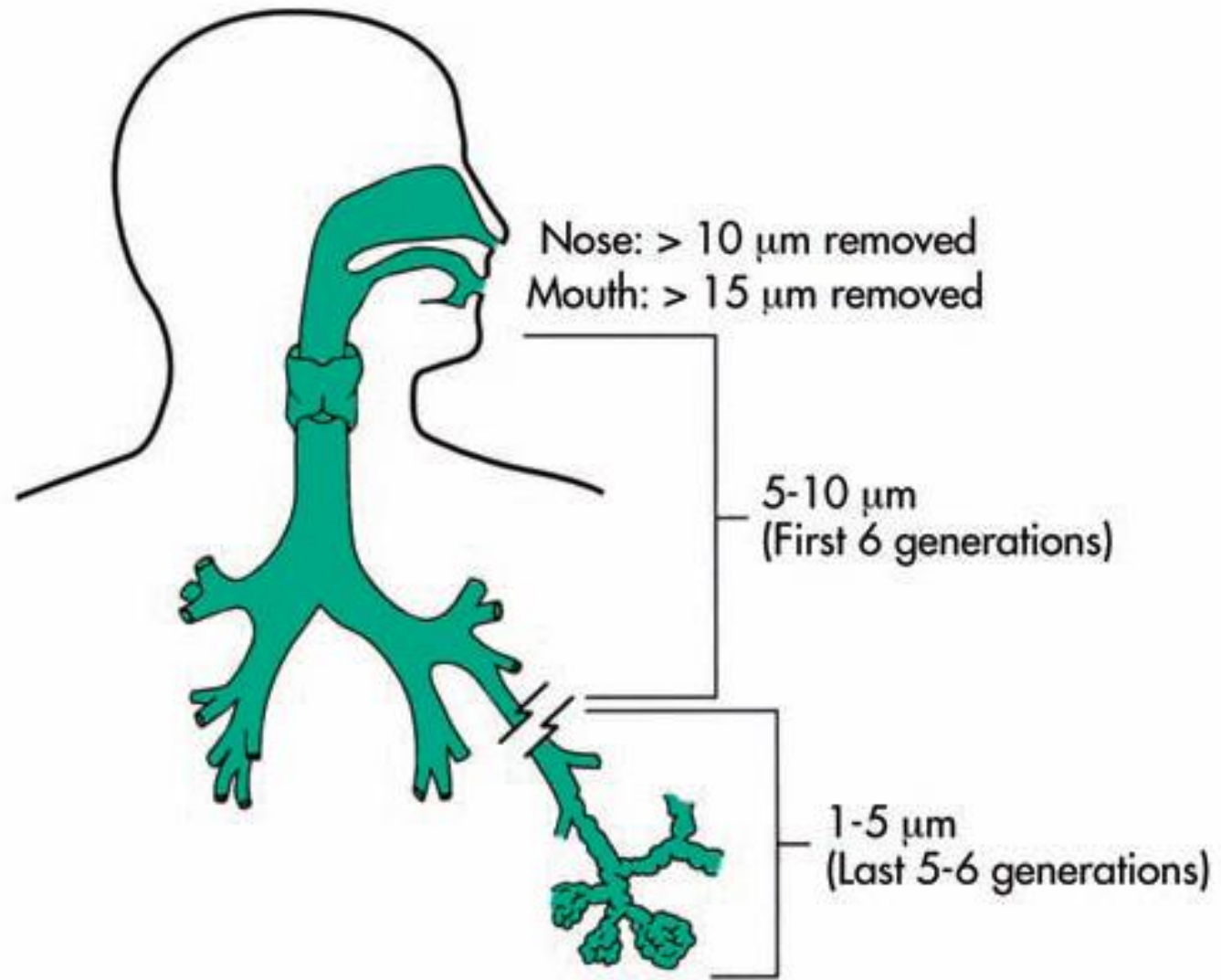
NEW****

- Spiriva Respimat and Incruse are now covered under regular benefits
- No spirometry required to qualify for coverage of Spiriva/Incruse

Patients believe they use their inhaler correctly, but often make mistakes



*In this study and a number of others, user error was more likely in patients using MDIs.
Self TH et al. *J Fam Pract* 2011;60(12):714-20.



Smoking Cessation

- Smoking cessation is the single most effective – and cost effective – intervention to reduce the risk of developing COPD and slow its progression
- The rate of decline in lung function may return to that of a non-smoker and delay the onset of disability from COPD
- Quitting smoking decreases symptoms like cough, phlegm, SOB, wheeze but only a small improvement in FEV₁
- Quitting advice given to smokers by physicians and other health care professionals increases cessation

Pharmacare coverage

Eligible Smoking Cessation Products

Nicotine replacement therapy products

Brand Name	Product Type	Strength	Pack Size	Natural Product Number (NPN)
Nicorette®	gum ¹	2 mg	105	80069513
Nicorette®	gum ¹	4 mg	105	80069471
Nicorette®	lozenge ²	2 mg	88	2247347
Nicorette®	lozenge ²	4 mg	88	2247348
Nicoderm® Step 1	patch	21 mg	7	80044515
Nicoderm® Step 2	patch	14 mg	7	80044503
Nicoderm® Step 3	patch	7 mg	7	80044518

¹ Nicorette gum flavour: Ultra Fresh Mint only.

² Nicorette lozenge flavour: Mint only.

Smoking cessation prescription drugs

Generic Name	Brand Name	Dosage Type	Strength	DIN
bupropion ³	Zyban®	tablet ER	150 mg	2238441
varenicline	Champix® ⁴	tablet	0.5 mg	2291177
varenicline	Champix® ⁴	tablet	1 mg	2291185
varenicline	Champix® ⁴	tablet DS PK	0.5 mg and 1 mg	2298309
varenicline	Apo-Varenicline	tablet	0.5 mg	2419882
varenicline	Apo-Varenicline	tablet	1 mg	2419890
varenicline	Apo-Varenicline	tablet DS PK	0.5 mg and 1 mg	2435675
varenicline	Teva-Varenicline	tablet DS PK	0.5 mg and 1 mg	2426781

³ PharmaCare covers only the Zyban® brand of bupropion. Wellbutrin®, Wellbutrin XL®, and generic bupropion are not covered as smoking cessation prescription drugs.

⁴ PharmaCare fully covers generic versions of varenicline (i.e., Apo-Varenicline, Teva-Varenicline). The brand name Champix® is only covered as a partial benefit.

FNHA coverage

There is supplementary coverage for NRT products available from First Nations Health Benefits through Pacific Blue Cross (PBC). Talk to your pharmacist, doctor or nurse practitioner about whether you would benefit from the addition of a second NRT product or to extend the length of treatment. Coverage limits apply for one calendar year (i.e., January to December). The table below shows the different NRT products covered for First Nations Health Authority (FNHA) clients through PBC:

SMOKING CESSATION PRODUCTS FOR FNHA CLIENTS
NICOTINE PATCHES You may use nicotine patches up to a maximum of a 24-week supply.
AND
GUM, LOZENGES, AND/OR INHALER You may use gum, lozenges, and/or inhaler cartridges up to a maximum of a 24-week supply. Other flavours of nicotine gum are covered, e.g., Fresh Fruit.

Pulmonary Rehabilitation

- Benefits

- Reduced dyspnea
- Reduced anxiety and depression
- Increased exercise endurance
- Increased QOL
- Decreased leg discomfort
- Decreased fatigue
- Reduced resource utilization
- Trend towards reduced mortality

- When to refer

- Clinically stable
- Symptomatic COPD
- Reduced activity levels and increased dyspnea despite pharmacological treatment
- No evidence of active ischemic, musculoskeletal, psychiatric or other systemic disease

Refer early!

Chronic Disease Management

COPD: Care for Yourself



Take your medication as prescribed*



Enjoy exercise regularly



Get your flu and/or pneumonia shot

Staying Strong and Healthy Helps You Manage Your COPD



Work with your healthcare team



Eat healthy



Reduce infection

*Tell your healthcare team promptly if your symptoms change.

COPD: Prevent and Prepare

Know Your Triggers And Avoid Them



Cleaners/perfume



Stress/emotions

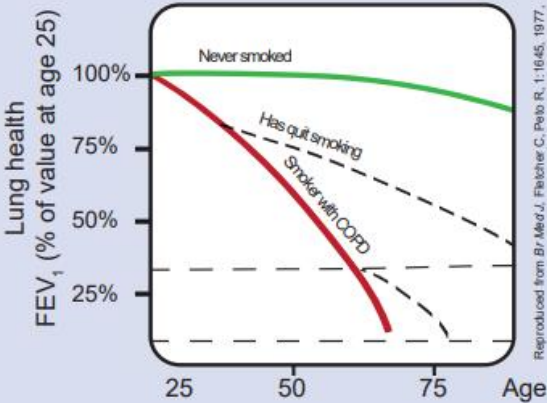


Weather changes



Air pollution, including second-hand smoke

Quit Smoking



Quitting smoking is the single best thing you can do to improve your health. **Quitting now will help slow your COPD.**

Go to www.gosmokefree.gc.ca/quit or call 1-866-366-3667.

Reproduced from Br Med J. Finkelstein C, Peab R. 1;1645, 1977. with permission from BMJ Publishing Group Ltd.

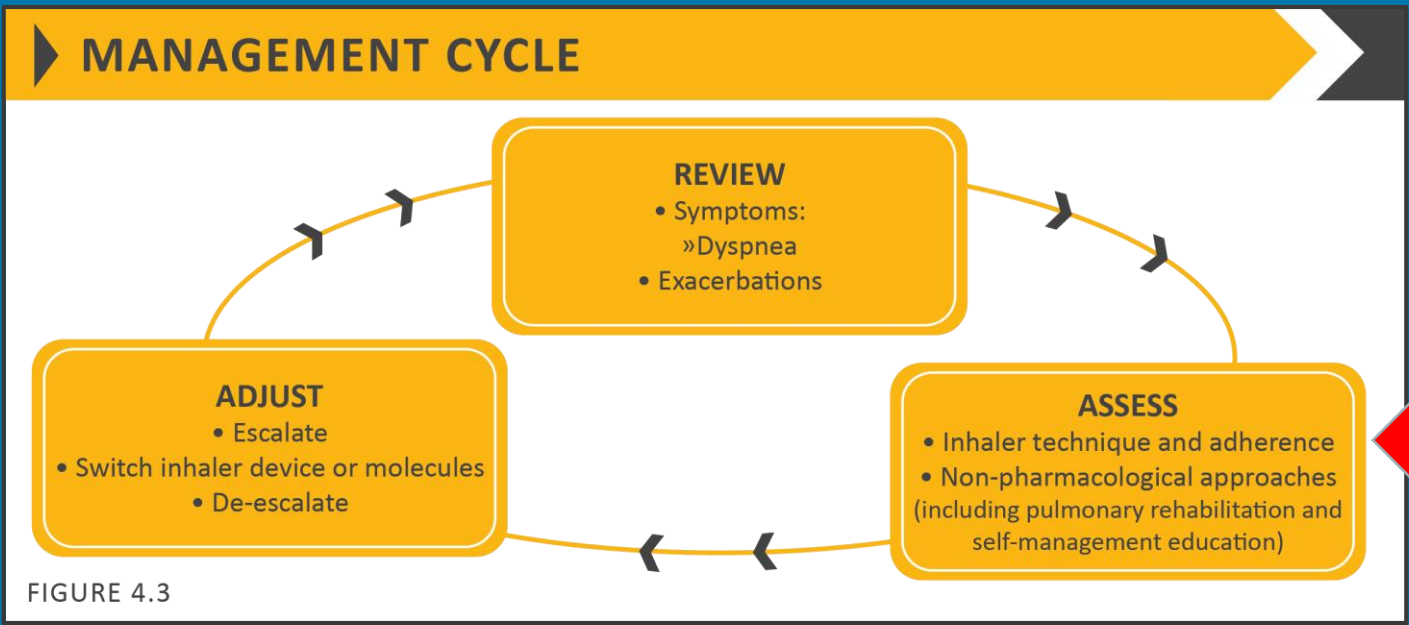


FIGURE 4.3



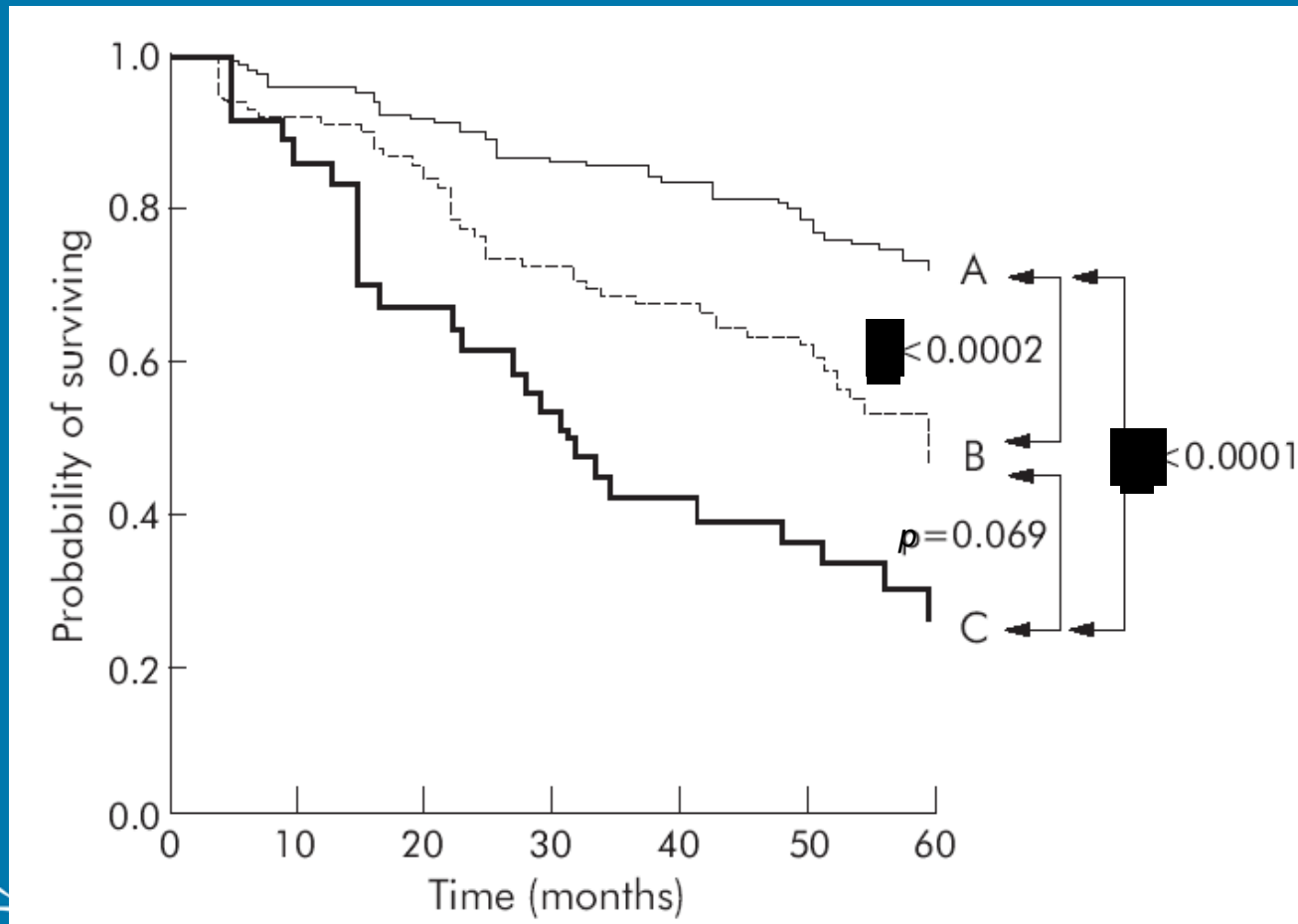
COPD flares

- Most frequent cause of medical visits, hospitalizations and death among COPD clients
- Inflammation, decrease in lung function, muscle mass, decrease in QOL
- 60% of all exacerbations caused by virus (often secondary bacterial infection)

Signs to watch for:

- *Increase in SOB
- *Increase in volume of phlegm
- *Phlegm changes colour to yellow, green or rust
- Could have increase in cough, wheeze, temperature, fatigue

Survival and frequency of exacerbations*



Group A = Patients with no acute exacerbations

Group B = Patients with 1–2 acute exacerbations of COPD requiring hospital management

Group C = Patients with > 3 acute exacerbations

*NB – the frequency of acute exacerbations of COPD is potentially modifiable



Ministry of Health

COPD Flare-Up Action Plan



This Action Plan is based on the guideline: *Chronic Obstructive Pulmonary Disease (COPD): Diagnosis and Management* at www.BCGuidelines.ca

FLARE-UP ACTION PLAN FOR: _____ Date: _____

Doctor's name: _____ Doctor's phone #: _____

Green Zone: My COPD is well controlled

- ▶ My breathing problems have not changed (shortness of breath, cough, and sputum).
- ▶ My appetite is normal.
- ▶ I am able to exercise and do my daily activities as normal.
- ▶ I have no trouble sleeping.

What should I do?

Continue to take my medications as prescribed:

Medication	Dose	Puffs/Pills	Frequency

Watch for a COPD flare-up when:

- ▶ I get a cold or flu.
- ▶ I feel run down or tired.
- ▶ I am exposed to smoke or air pollution.
- ▶ After weather changes.
- ▶ When my mood changes, such as feeling stressed or anxious.

Yellow Zone: My symptoms are worse | Take action - FLARE-UP

If you experience one or more of these symptoms, this may be the start of a COPD flare-up.

- ▶ I am more short of breath than usual.
- ▶ I am coughing or wheezing more than usual.
- ▶ I have more sputum or mucus than usual.
- ▶ I have green, yellow or rust coloured sputum.

What should I do? - Your doctor will check all that apply:

Take **additional** treatment prescribed by my doctor depending on my symptoms:

I increase my reliever (BRONCHODILATOR) if I am **MORE SHORT OF BREATH** than usual.

Bronchodilator	Dose	# of Puffs	Frequency

Plan your day, get rest, relax, use breathing techniques, huff and cough to clear phlegm as required.

Other: _____

I start **PREDNISONE** if after increasing my bronchodilator my **SHORTNESS OF BREATH DOES NOT IMPROVE** and my symptoms have been worse **FOR AT LEAST ____ HOURS.**

Prednisone	Dose	# of Pills	Frequency

I start my **ANTIBIOTICS** if my **SPUTUM** becomes green, yellow or rust coloured or has blood in it and my symptoms have been worse **FOR AT LEAST ____ HOURS.**

Antibiotic	Dose	# of Pills	Frequency

If after taking the above action, your symptoms don't improve within 48 hours, SEEK MEDICAL CARE IMMEDIATELY!

Red Zone: DANGER | Take action - get help!

- ▶ I am **extremely** short of breath.
- ▶ I am confused, agitated, or drowsy.
- ▶ I have sudden chest pain.

What should I do? Call **9-1-1** for an ambulance to take you to the emergency room.

Continued on next page →

Impact of a COPD comprehensive case management program on hospital length of stay and readmission rates

This article was published in the following Dove Press journal:
International Journal of COPD
21 March 2017

Results: A total of 1,564 patients with a clinical diagnosis of COPD were identified from 2,719 hospital admissions during the 3 years of study. The disease management program reduced COPD-related hospitalizations by 30% and hospitalizations for all causes by 13.6%. Similarly, the rate of readmission for all causes showed a significant decline, with hazard ratios (HRs) of 0.55 (year 1) and 0.51 (year 2) of intervention ($P<0.001$). In addition, patients' mean LOS (days) for COPD-related admissions declined significantly from 10.8 to 6.8 ($P<0.05$).

Conclusion: A comprehensive disease management program for COPD patients, including education, case management, and follow-up, was associated with significant reduction in hospital admissions and LOS.

NATIONAL JEWISH MEDICAL AND RESEARCH CENTER
 DSCM COPD All Plan Members
 12 Month Utilization Data

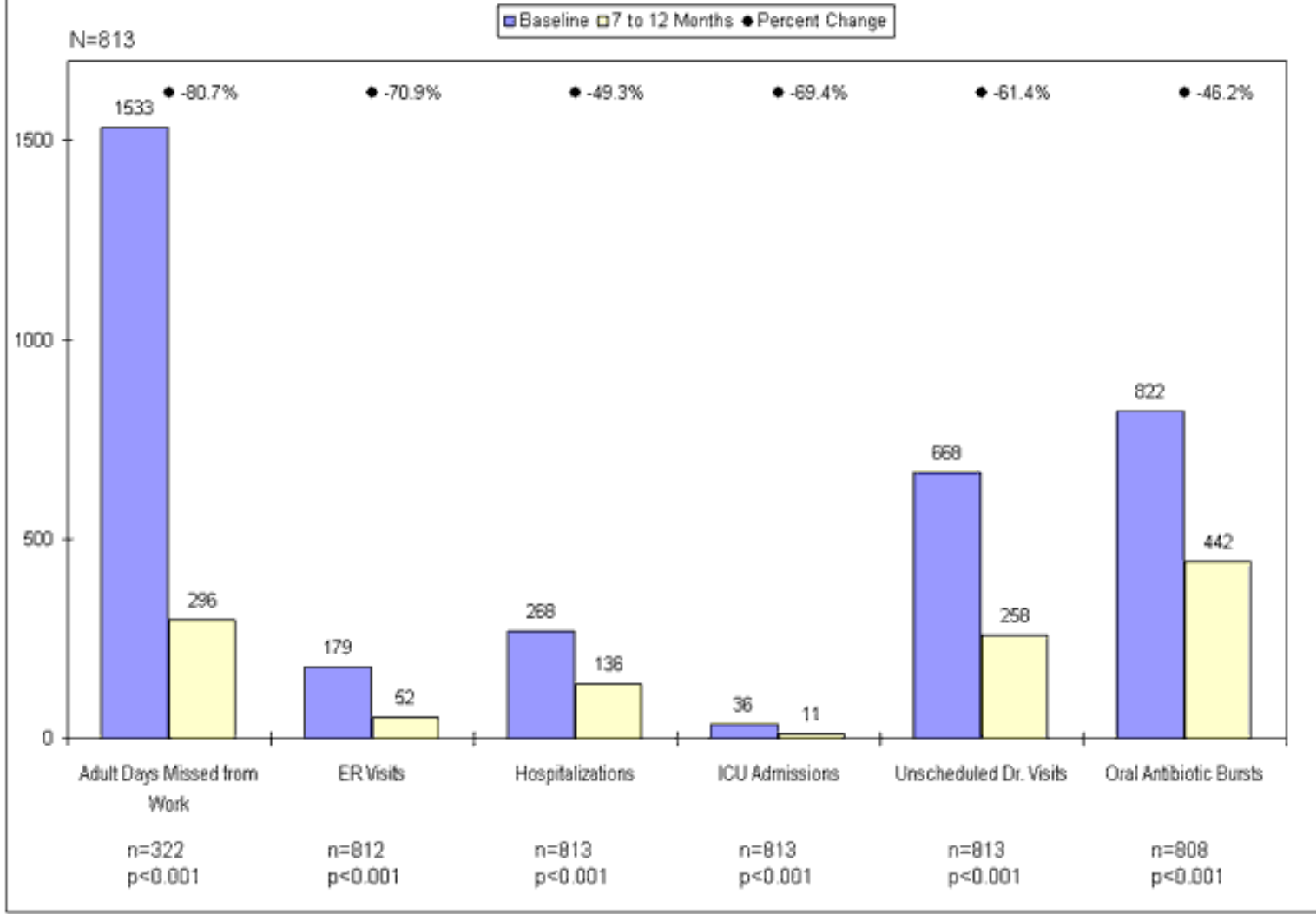


TABLE 1 Comorbidities commonly associated with chronic obstructive pulmonary disease

Cardiovascular disease

- Hypertension
- Coronary artery disease
- Systolic and/or diastolic left ventricular dysfunction
- Pulmonary hypertension
- Peripheral vascular disease
- Cerebrovascular disease
- Stroke

Skeletal muscle dysfunction and loss of muscle mass

Osteoporosis, osteopenia or osteoarthritis

Psychological disturbances

- Depression
- Anxiety

Cognitive impairment

Anaemia

Obstructive sleep apnoea

Diabetes/metabolic syndrome

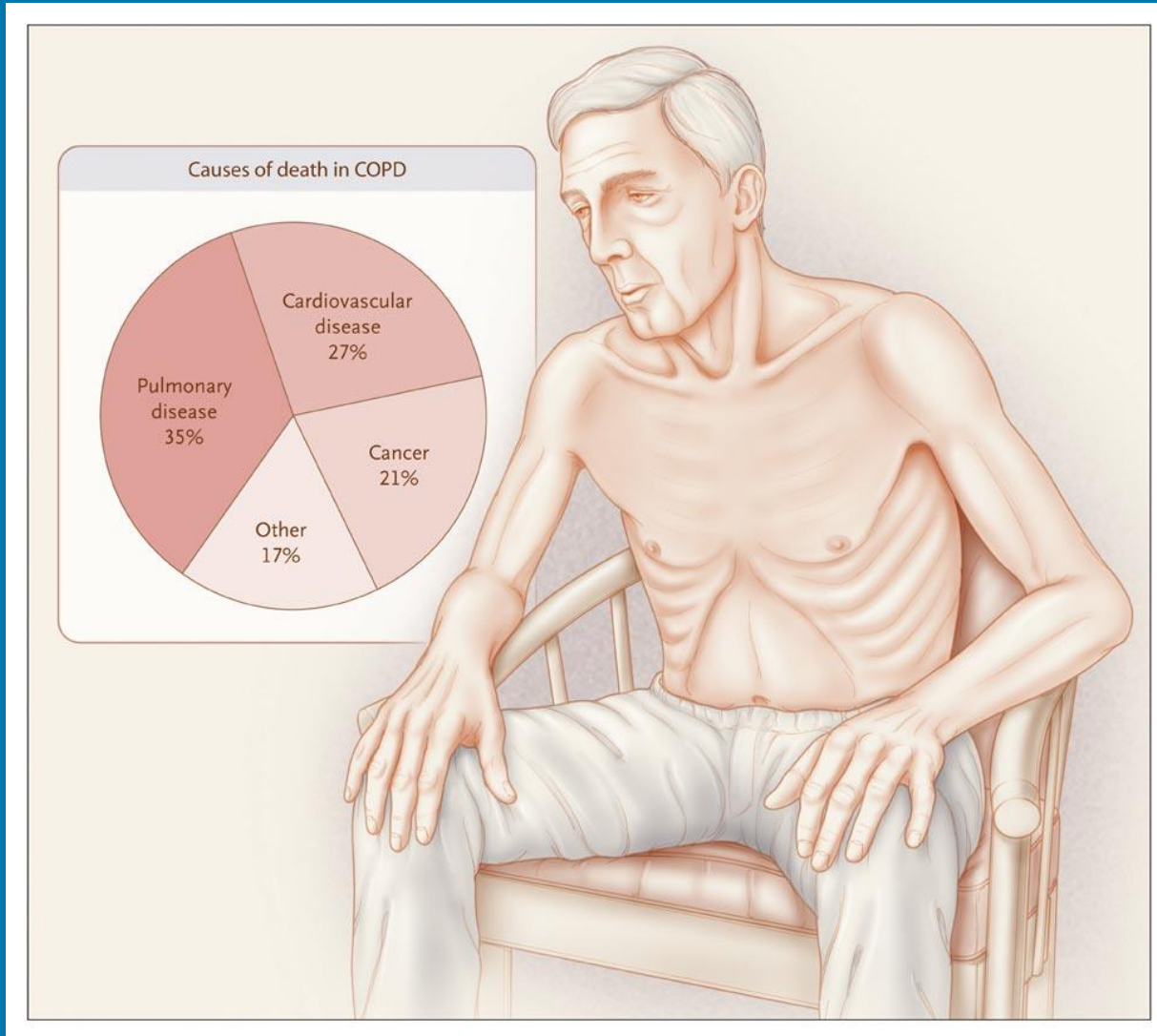
Renal insufficiency

Gastro-oesophageal reflux disease

Lung cancer

Infections

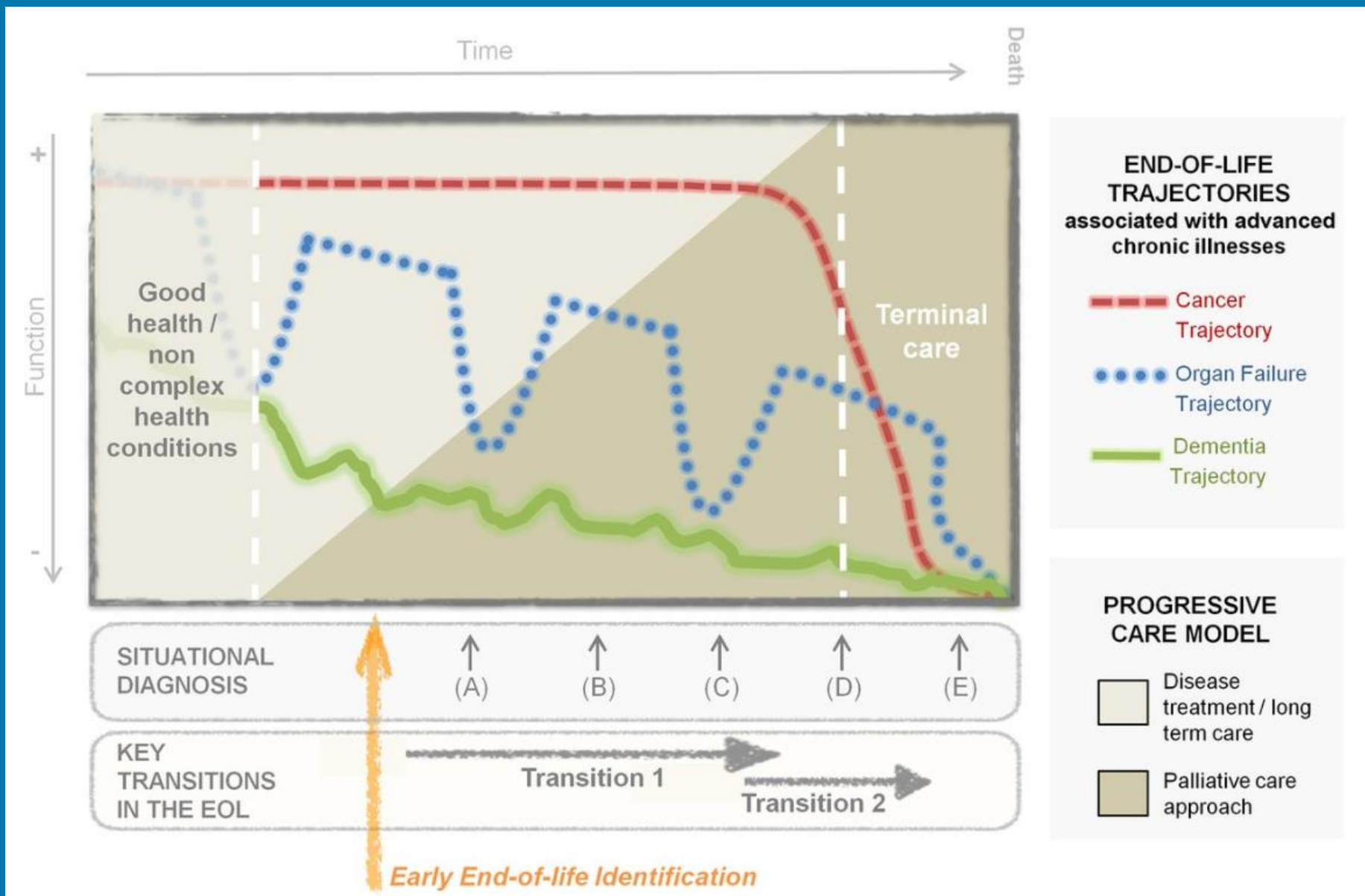
Causes of Death in COPD



- Mild-mod COPD – lung cancer and cardiovascular disease
- Severe COPD – respiratory failure and cardiovascular disease

Prognosis

- Prognostic indicators:
 - BODE index (BMI, FEV₁, Dyspnea, Exercise capacity)
 - St George's Respiratory Questionnaire - increase of 4
 - Charlson Index - # and seriousness of co-morbidities, score of 3+ = 2X mortality rate
 - CRP (Copenhagen, 2X mortality rate at 8 yrs, Lung Health Study 79% increase in all-cause mortality at 7.5 yrs)
- 50% die within 2 yrs after a hosp admission for resp. failure
- Post ICU – 40% die within 3 mths, 50-60% within 1 yr
- FEV₁ < 1.0L (FEV₁ < 0.75 L one year mortality 30 %)
- Older
- Hypoxemia (on home oxygen)
- BMI – risk factor for mortality independent of lung function
- Right ventricular hypertrophy
- Renal failure



Palliative Approach

▶ PALLIATIVE CARE, END OF LIFE AND HOSPICE CARE IN COPD

- Opiates, neuromuscular electrical stimulation (NMES), oxygen and fans blowing air on to the face can relieve breathlessness (**Evidence C**).
- In malnourished patients, nutritional supplementation may improve respiratory muscle strength and overall health status (**Evidence B**).
- Fatigue can be improved by self-management education, pulmonary rehabilitation, nutritional support and mind-body interventions (**Evidence B**).

TABLE 3.9

Dyspnea is subjective - ask, use validated tool (eg ESAS)
Regularly assess – RR and pattern, accessory muscles, SpO2*

*doesn't necessarily mean SOB for the patient, only measure when helpful to guide treatment

COPD and COVID 19

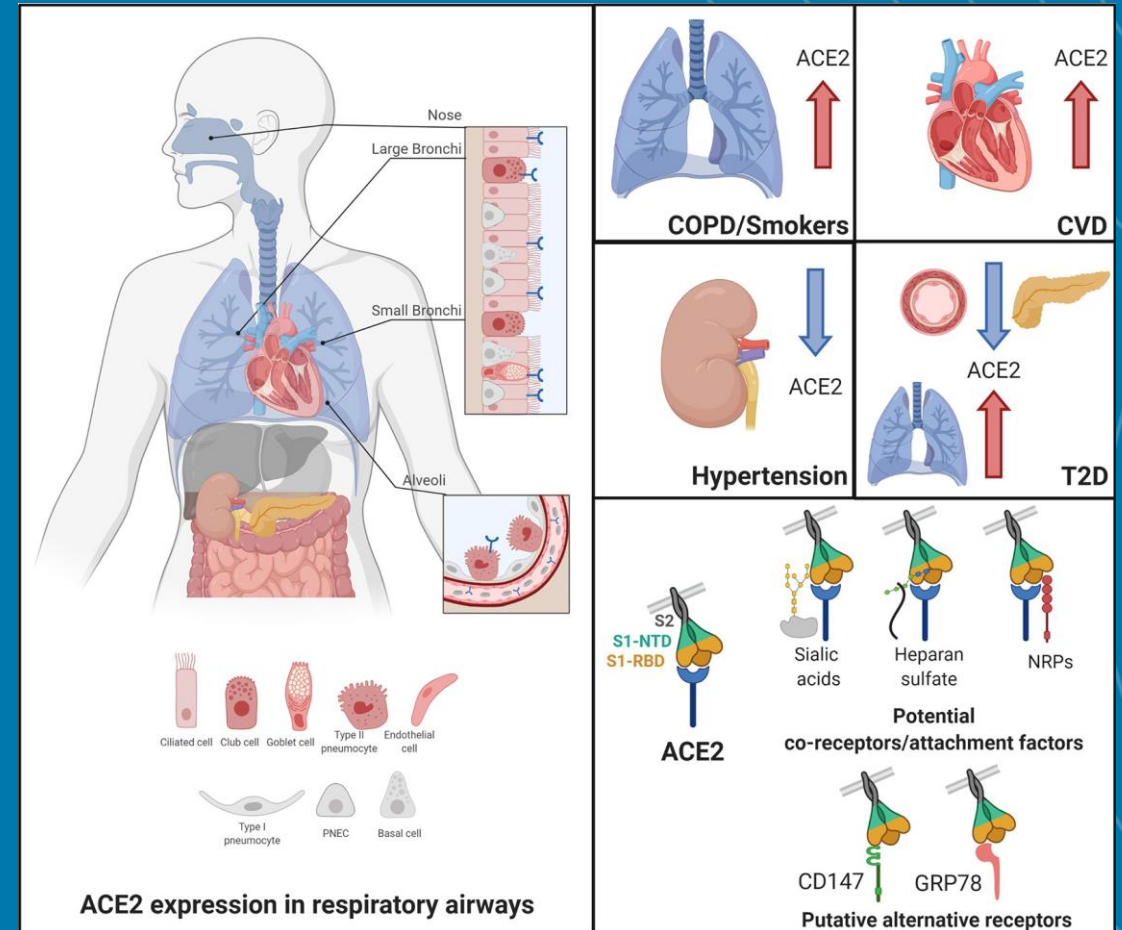
Are people with COPD at greater risk of contracting the virus?

- People with COPD have an increased expression of the ACE2 receptor sites
- *Potentially* at higher risk but no data to clearly show that they *are* at higher risk
- *People with COPD are at higher risk of poorer outcomes*
 - AJRCCM 2020

Should my patient with COPD continue to take a corticosteroid? Other inhalers? Other medication?

- Yes, yes and yes!

Cdn Thoracic Society April 2020 – reviewed q 2 weekly



Conclusions

- COPD is a **prevalent** and costly disease in BC and worldwide
- **Spirometry is essential** for diagnosis and to guide treatment
- **Match inhaled medication** to severity of disease and to **patient capacity**
- **Exacerbations** are important events in the life of someone with COPD – prevention of these events are key and prompt treatment can prevent hospitalization
- **Respiratory Rehab** is a recommended non-pharmacological intervention for management of COPD

Conclusions

- **Smoking cessation** is key and it's never too late to quit!
- **Intensive case management** with self-management education, action plan and follow up can decrease hospital admissions and increase QOL
- Patients in late stage COPD may benefit from a **palliative approach** for symptom control
- **Continue treatment** as usual during pandemic

Resources

- www.Bc.lung.ca – general info and support groups
- www.Livingwellwithcopd.com – general self-management info
- <https://www.thelungcentre.ca/> - for spirometry req and inhaler technique videos
- Smoking Cessation Clinic at VGH – call 604-875-4800 self or professional referral

Thank you!

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