

SUMMARY	DECISION SUPPORT	PATIENT EDUCATION/SELF MANAGEMENT
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GOALS

- ✓ Increase use of appropriate therapy for COPD patients
- ✓ Reduce emergency department (ED) visits and hospitalizations
- ✓ Educate COPD patients to increase their self management skills

ALERTS

- ⇒ COPD with FEV₁ < 0.75 L=30% one year mortality
- ⇒ O₂ saturation <90%
- ⇒ Evaluate and manage hypoxia
- ⇒ Symptoms of COPD exacerbation: ↑ sputum purulence, ↑ sputum volume, ↑ dyspnea

DIAGNOSTIC CRITERIA/EVALUATION

COPD is a slowly progressive disease involving the airways or pulmonary parenchyma (or both) resulting in airflow obstruction that is not fully reversible. Two main causes of airflow obstruction are found, chronic obstructive bronchitis (COB) and emphysema, many people have a component of each.

- ▶ Chronic obstructive bronchitis = partially reversible airflow limitation with presence of chronic productive cough for 3 months in each of 2 successive years in a patient where other causes of chronic cough have been excluded.
- ▶ Emphysema = an abnormal permanent enlargement of the air spaces distal to the terminal bronchioles, with destruction of their walls and without obvious fibrosis.

How is COPD diagnosed? Diagnosis is suspected based on the patient's symptoms and physical examination. Diagnosis is confirmed when a patient who has symptoms of COPD is found by postbronchodilator spirometry to have FEV₁/FVC ratio less than 0.70.

- ▶ CXR is not sensitive for the diagnosis of COPD (it may be done to rule out other diagnoses and as a baseline)
- ▶ Screening for alpha 1-antitrypsin deficiency is recommended in patients who develop COPD at a young age. (GOLD* recommends Caucasian patients under age 45 years or with a strong family history of COPD.)

STAGES OF COPD (SYMPTOMS DO NOT CORRELATE DIRECTLY WITH STAGE. TREATMENT BASED ON SYMPTOMS)

GOLD STAGE	FEV ₁ /FVC	FEV ₁ % PREDICTED	SYMPTOMS
MILD COPD	< 70%	FEV ₁ ≥ 80%	May have no symptoms, can have cough ± sputum, mild dyspnea
MODERATE COPD	< 70%	50% ≤ FEV ₁ < 80%	Often have SOB ± wheezing on moderate exertion, cough ± sputum, can have general reduction in breath sounds, hypoxemia may be present
SEVERE COPD	< 70%	30% ≤ FEV ₁ < 50%	Dyspnea on exertion (DOE) or dyspnea at rest, wheeze and cough frequent, lung hyperinflation, cyanosis, peripheral edema & polycythemia. Advanced disease: ↓ pO ₂ and ↑ pCO ₂ common
VERY SEVERE COPD	< 70%	FEV ₁ < 30% predicted or < 50% predicted + (PaO ₂ < 60 mm Hg on room air (RA))	As above

FEV₁ = Forced expiratory volume in 1 sec; FVC = forced vital capacity; PaO₂ = arterial partial pressure of oxygen. PaCO₂ = arterial pressure of carbon dioxide

*GOLD: Global Initiative for Chronic Obstructive Lung Disease

TREATMENT OPTIONS FOR STABLE COPD

Medications For Step –Care Therapy of Stable COPD see page 5

Short-acting inhaled bronchodilator → add long-acting bronchodilator → add inhaled corticosteroids (if >1 exacerbation/yr and severe COPD)

Steroids: 7-10 day course of oral corticosteroid indicated for COPD exacerbation. NO role for chronic use of oral corticosteroids. (ICS see above)

Antibiotics: In outpatient exacerbation antibiotics indicated if ≥ 2 of the following: increase sputum purulence, increase sputum volume, dyspnea

Pulmonary Rehabilitation: self-directed pulmonary rehabilitation strategies including exercise program/conditioning. Provide education on proper medication use for symptomatic patients with severe COPD (FEV₁ < 50%). Education can be considered for symptomatic patients with FEV₁ >50%.

Continuous O₂ therapy if severe resting hypoxemia (PaO₂ ≤ 55 mm HG or SaO₂ ≤ 88%) Goal is baseline PaO₂ to ≥ 60 mm Hg or SaO₂ ≥ 90%.)

MONITORING

Follow-up as clinically indicated. Patients with mild-moderate COPD which is clinically stable may be rechecked every 180 days. Close follow-up is indicated after hospital discharge and after any exacerbation.

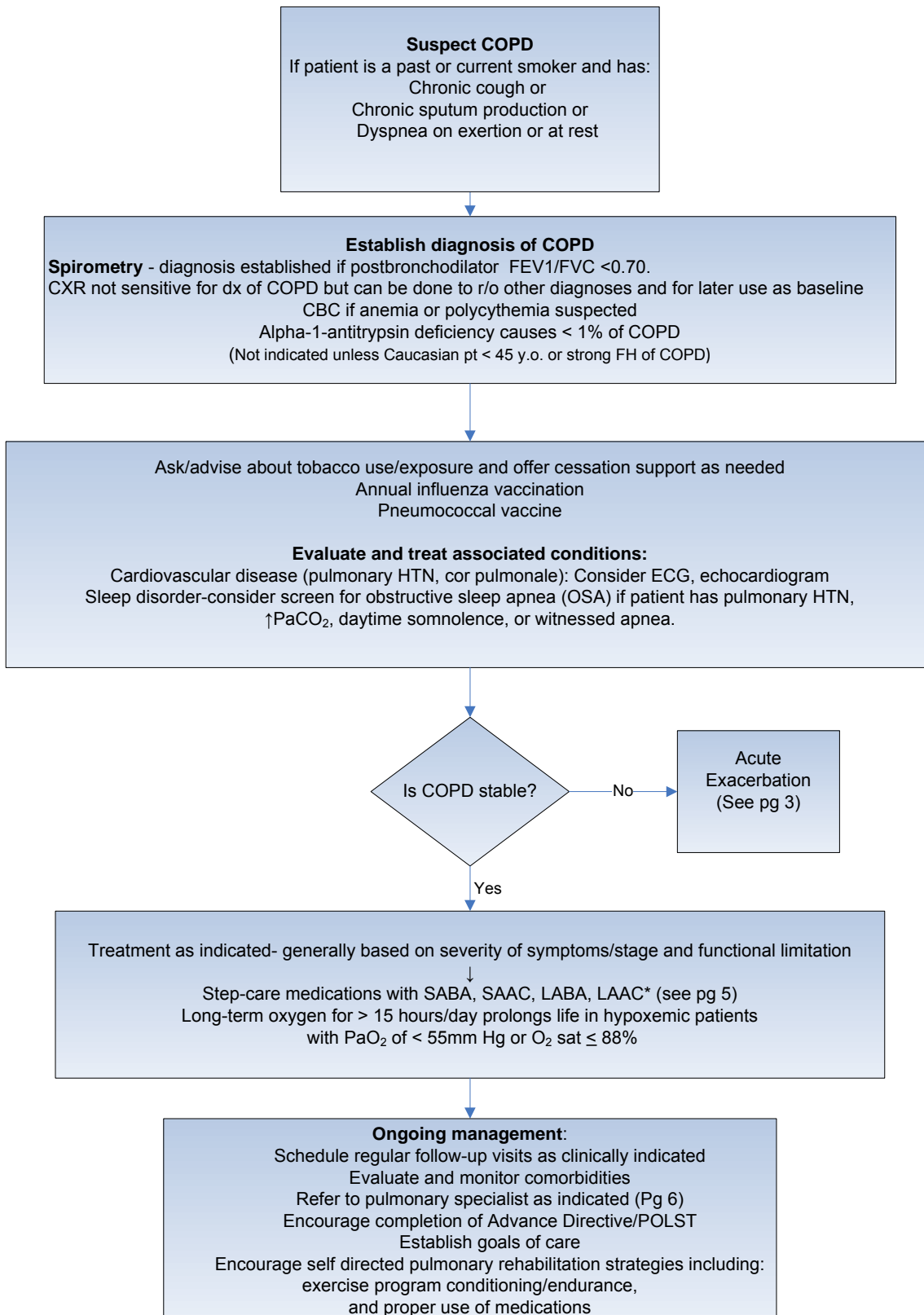
Pneumococcal vaccine and annual influenza vaccine. Ask/advise about tobacco use /exposure at every visit– offer help with smoking cessation.

Review medication adherence and inhaler technique if patient not responding to therapy.

Encourage completion of Advance Directive/POLST and establish and document patient's end of life goals.

Information contained in the guidelines is not a substitute for a health care professional's clinical judgment. Evaluation and treatment should be tailored to the individual patient and the clinical circumstances. Furthermore, using this information will not guarantee a specific outcome for each patient.

Diagnosis and Management of Stable COPD



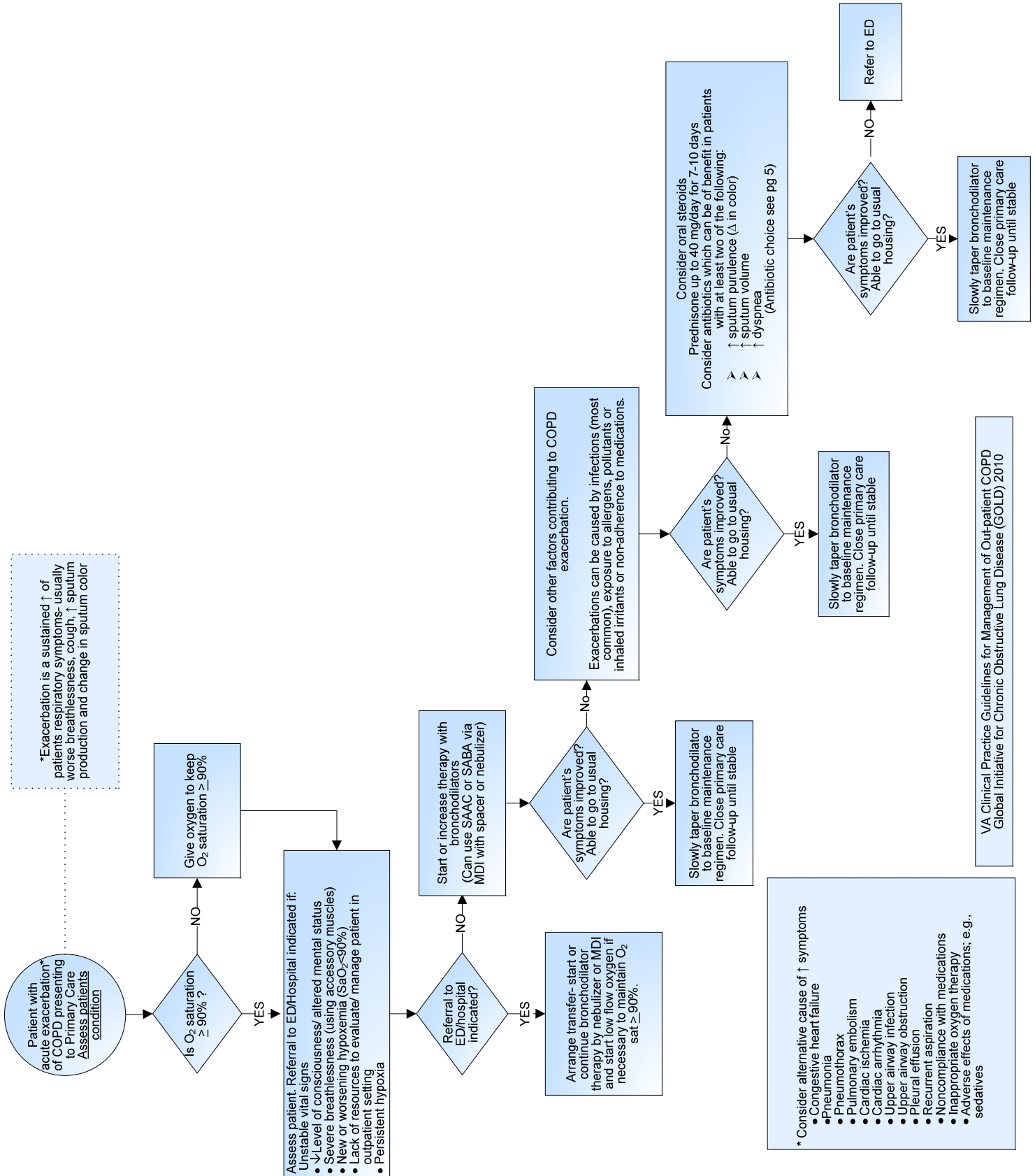
*LAAC-Long-acting anticholinergic
LABA-Long-acting beta-agonist
SAAC-Short-acting anticholinergic
SABA-Short-acting beta-agonist
Based on ICSI and VA

SUMMARY

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Management of COPD Exacerbation



SUMMARY		DECISION SUPPORT		PATIENT EDUCATION/SELF MANAGEMENT	
MEDICATION CLASS	MEDICATION	DOSE	SIDE EFFECTS	SPECIAL NOTES	
SHORT ACTING BETA-AGONIST (SABA)	Levalbuterol (XOPENEX HFA) (hydrofluoroalkane) 45 mcg/puff	Levalbuterol HFA dose: 1-2 puffs q4-6 hrs Aerosol solution dosing: Levalbuterol: 0.63 mg/3 ml – 1.25 mg/3 ml nebulized q6-8h prn Albuterol: (0.83%,2.5 mg/ml) 2.5 mg nebulized 3-4x daily	Tachycardia, palpitations, tremor, ↓K+, ↑ glucose, lactic acidosis Rare: paradoxical bronchospasm	Onset of bronchodilator effect 15 min Duration of action 4-6 hours Levalbuterol, albuterol (SABA's) and ipratropium (SAAC) are equipotent as bronchodilators, improving dyspnea and exercise tolerance equally well. SABAs are recommended as the first-line treatment for patients with symptoms of mild COPD because the onset of bronchodilator effect is more rapid Levalbuterol, use contraindicated with phenothiazines, use with care with sotalol and linezolid.	
LONG ACTING BETA AGONIST (LABA)	Salmeterol (SEREVENT DISKUS)-DPI (dry powder inhalation) 50 mcg /puff	50 mcg inhaled every 12 hrs	Headache, neuromuscular and skeletal pain, throat irritation, pharyngitis, tachycardia, palpitations	Use of LABA alone, without use of a long term asthma control medication (i.e. CTS) is CONTRAINDICATED LABAs should be viewed as maintenance therapy and should not be used as rescue therapy, they have not been shown to improve breathlessness. Black box warning long-acting beta-2 adrenergic agonists (LABA) increase risk of asthma-related death	
SHORT ACTING ANTICHOLINERGICS (SAAC)	Ipratropium bromide (ATROVENT HFA) 17 mcg/puff Sol 500 mcg/2.5mL	Ipratropium HFA COPD dose: 2 puffs every 6 hours (max 12 puffs/day) Ipratropium solution for aerosol (500 mcg/2.5 ml): 2.5 ml every 6-8 hrs by nebulizer	Anaphylaxis, angioedema, glaucoma (narrow-angle), hypersensitivity reaction, paradoxical bronchospasm, laryngospasm	Onset of bronchodilator effect is 30-90 minutes. Ipratropium should be used on a regularly scheduled basis rather than as needed because it's dose-response time is too long to titrate use to control symptoms.	
LONG ACTING ANTICHOLINERGICS (LAAC)	Tiotropium (SPIRIVA HANDIHALER)-NF 18 mcg/cap	1 capsule dry powder (inhaled) per day (Two inhalations of the punctured capsule to ensure full dose is taken)	Angioedema, glaucoma, rash, paradoxical bronchospasm, hypersensitivity reaction, blurred vision, chest pain, constipation, dry mouth, dyspepsia, edema, myalgia, tachycardia, urinary hesitancy or retention	Demonstrated to reduce exacerbations when added to COPD regimen in patients with moderate COPD Improves COPD symptoms and quality of life (more than Salmeterol) Has additive effects to LABA It is very important to counsel patient that capsule is to be punctured and inhaled, NOT swallowed.	
COMBINATION INHALER MEDICATIONS	Fluticasone/ Salmeterol (ADVAIR DISKUS) 100/50mcg, or 250/50mcg, or 500/50mcg puff	COPD dose: 250/50 mcg -one puff twice daily	Headache, upper respiratory tract infection, throat irritation, oral candidiasis, neuromuscular and skeletal pain	LABAs should be viewed as maintenance therapy and should not be used as rescue therapy, they have not been shown to improve breathlessness. Black box warning long-acting beta-2 adrenergic agonists (LABA) increase risk of asthma-related death	
	Albuterol/ Ipratropium (90 mcg /18 mcg) /puff (COMBIVENT) -NF	1-2 puffs four times daily	See individual medications above	Many studies show that the combination of ipratropium and albuterol provides greater bronchodilator effect compared to each alone; however, the same effect could probably be achieved by doubling the dose of either agent.	
INHALED CORTICOSTEROIDS (ICS)	Fluticasone MDI (FLOVENT HFA) 44, 110, or 220 mcg/puff (hydrofluoroalkane) Beclomethasone (Qvar)-NF, Budesonide DPI,(Pulmicort)-NF, Triamcinolone (Azmacort)-NF	88 to 440 mcg twice daily Start: 88 mcg inhaled bid; Max: 880 mcg/day; Info: titrate to lowest effective dose; rinse mouth after use	Headache, arthralgia, upper respiratory tract infection, throat irritation, oral candidiasis, Rare: adrenal suppression, paradoxical bronchospasm	Regular treatment with ICS does not modify the long-term decline in FEV1, but has been shown to reduce the frequency of exacerbations for patients with FEV1 < 50% and repeated exacerbations.	
ORAL CORTICOSTEROID	Prednisone-NF 5 mg tablets	Short term use only: up to 40 mg orally for 7-10 days	GI upset, bruising, psychiatric disturbances, hypertension, immunosuppression, fluid retention	To be used in burst fashion during acute exacerbation Insufficient evidence to demonstrate that long-term use of an oral corticosteroid provides benefits for patients w/ COPD	
METHYLXANTHINES	Theophylline 200 mg SR, 300 mg SR capsules	Start: 300-400 mg PO daily x3 days divided every 8-12 hours, then 400-600 mg PO daily, divided every 8-12 hours; Reduced clearance:(elderly, hepatic impairment, CHF, fever, sepsis w/ multi-organ failure, shock, and hypothyroidism): max dose: 400 mg/day	Levels < 20 mcg/ml: adverse effects rare Level> 20 mcg/ml: nausea, vomiting, diarrhea, headache, insomnia, irritability Level > 35 mcg/ml: palpitations, tachycardia, extrasystoles, hypotension, circulatory failure, life-threatening ventricular arrhythmias	Theophylline may be considered in combination with long-acting beta ₂ agonists in select patients with COPD Adjust dose based on serum levels, goal level 5-12 mcg/mL	
MUCOLYTICS	N-acetylcysteine Brand discontinued in US	600 mg orally two times a day		Use of the oral mucolytic N-acetylcysteine provides a small reduction in exacerbations in patients with severe COPD who are not using ICS. Not recommended for the purpose of cough suppression in patients with COPD	

Bold=Formulary, NF=Non Formulary

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CAUSES OF COPD		SYMPTOMS OF COPD
<ul style="list-style-type: none"> ◆ Cigarette smoking causes 80%-90% of all cases of COPD (a smoker is 10 times more likely to die of COPD than a non-smoker) ◆ Risk factors for COPD include: <ul style="list-style-type: none"> • age >45 • genetic factors (including alpha-1 antitrypsin deficiency) • passive exposure to cigarette smoke or environmental tobacco smoke • occupational dusts and chemicals (vapors, irritants, and fumes) 		<ul style="list-style-type: none"> ◆ Chronic cough (+/- productive) often first symptom of COPD. Patients often ignore this as the "typical smoker's cough." ◆ Progressive SOB limiting activities. Patients often adjust their activities to their exercise tolerance and assume these changes are a normal part of aging ◆ ↓ ability to exercise
STEP CARE THERAPY IN COPD (BASED ON VA GUIDELINES AND GOLD 2011)		
SYMPTOMS	MAINTENANCE THERAPY	RESCUE THERAPY
ASYMPTOMATIC	No medication indicated COPD education, pneumococcal and influenza vaccines, avoid risk factors (eg, smoking),	
SYMPTOMS LESS THAN DAILY (MANAGED WITH RESCUE SABA)	No scheduled medication indicated	SABA prn
SYMPTOMS NOT CONTROLLED WITH RESCUE THERAPY, <u>OR</u> DAILY SYMPTOMS	Multiple therapies are acceptable, choose specific therapy based on patient response, cost, and adverse effect profile. Scheduled or prn use of SAAC or combination of SAAC + SABA* or Monotherapy with LAAC or LABA *Note: For ongoing therapy long-acting formulations of beta-agonists and anticholinergics are preferred over short-acting.	SABA prn
SYMPTOMS STILL NOT CONTROLLED	Combination inhaled therapies with 2⁺ of the following: LABA+ ICS (first choice) or LABA + LAAC or LAAC+ ICS* *Use ICS if > 1 exacerbation/yr and severe disease (FEV1 <50%) If cannot use inhalers or if inhalers have not been effective consider adding theophylline (slow release preparation) adjusted to level of 5-12 mcg/ml. Use with caution due to side effects and drug interactions. Discontinue if not beneficial. Chronic oral corticosteroid use not recommended, but if used, the dose should be as low as possible, and patient monitored for osteoporosis and offered osteoporosis prophylaxis. Occasionally combination of all 3 is needed for adequate control. [GOLD 2011 (second line RX)]	SABA prn
SAAC -Short-acting anticholinergic LAAC -Long-acting anticholinergic SABA -Short-acting beta-agonist LABA -Long-acting beta-agonist ICS - Inhaled corticosteroid		

ANTIBIOTIC CHOICE IN COPD EXACERBATIONS (BASED ON VA GUIDELINES)		INDICATIONS FOR LONG-TERM O2 THERAPY IN COPD
PATIENT CHARACTERISTICS	ANTIBIOTIC AGENTS	
Uncomplicated Patients 1. Have experienced less than 3 exacerbations in the past 12 months 2. Have a baseline FEV1 of > 50% predicted 3. Do not have cardiac disease 4. Have not been exposed to antibiotics in the past 3 months	<ul style="list-style-type: none"> • Doxycycline • Sulfamethoxazole/trimethoprim • Second or third generation cephalosporin (No oral 2nd or 3rd gen cephalosporin on formulary) • Extended spectrum macrolide (azithromycin-restricted use) 	PaO ₂ ≤ 55 mm Hg or SaO ₂ ≤ 88%* in patients receiving optimal medical regimen for at least 30 days [†] PaO ₂ = 55 to 59 mm Hg or SaO ₂ ≤ 89%* for patients with cor pulmonale or erythrocytosis (Hct > 55%) Can be considered for PaO ₂ ≥ 60 mm Hg or SaO ₂ ≥ 90%* for patients whose room-air PaO ₂ is ≤ 55 mm Hg or SaO ₂ ≤ 88% during exercise or sleep. PaO ₂ = partial pressure of arterial O ₂ ; SaO ₂ = arterial O ₂ saturation.
Complicated Patients 1. Experienced 3 or more exacerbations in the past 12 months 2. Baseline FEV1 of < 50% predicted 3. Have cardiac disease 4. Have been exposed to antibiotics in the past 3 months	<ul style="list-style-type: none"> • Beta-lactam/beta-lactamase inhibitor (amoxicillin/clavulanate requires NF exception for this indication) • Fluoroquinolones 	*Arterial O ₂ levels measured at rest while breathing room air. †Patients who are recovering from an acute respiratory illness and who meet the listed criteria should be given O ₂ and rechecked while breathing room air after 60 to 90 days.

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COPD and asthma can usually be distinguished on the basis of history and examination. Features from the history and examination should be used to differentiate COPD from asthma whenever possible.

FACTORS THAT MAY HELP DIFFERENTIATE ASTHMA AND COPD		
FACTOR	ASTHMA	COPD
Age of onset	Typically < 30 yr	Typically > 40 yr
Atopy	Usual	Uncommon
Response to bronchodilators	Nearly complete	Partial
Body habitus	Variable, often obese	BMI usually low in patients with emphysema
Chest auscultation	Wheezing during exacerbations	Decreased breath sounds, particularly during exacerbations
Cough	Nonproductive with cold air or exercise or at night	Morning, productive
Diffusing capacity	Normal or increased	Normal or decreased
Dyspnea	Episodic	Persistent, predictable
Family history	Common	Uncommon
Nocturnal symptoms	Common	Uncommon
Progression	Usually nonprogressive	Progressive if smoking
Purulent sputum	Uncommon	Typical
Smoking history	20–30% prevalence, usually < 20 pack-yr	90–95% prevalence, usually > 20 pack-yr
Response to corticosteroids	Very responsive	Poorly responsive

Data from O'Donnell DE, Arron S, Bourbeau J, et al. Executive Summary: Canadian Thoracic Society recommendations for management of chronic obstructive pulmonary disease---2003. *Canadian Respiratory Journal* 10(Supplement A):11A–33A, 2003; Global Initiative for Chronic Obstructive Lung Disease (GOLD): Executive Summary: Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease, 2005. (Rev 2011)

CCHCS SPECIALTY REFERRAL GUIDELINES	
<p>Per InterQual consider referral/consultation:</p> <ul style="list-style-type: none"> ▶ COPD with complication/comorbidity InterQual 100 <ul style="list-style-type: none"> • Alpha-1 antitrypsin deficiency (consider if age 45 or younger or strong family history) • Chronic oxygen therapy • Required mechanical ventilation within past 5 years • Cor pulmonale • FEV1 < 1L at baseline • Pregnancy ▶ Continued symptomatic COPD after RX InterQual 200 <ul style="list-style-type: none"> • Worsening dyspnea, exercise tolerance, O2 saturation • FEV1 < 60% predicted, DLCO < 50% predicted ▶ Chronic corticosteroid use InterQual 300 <ul style="list-style-type: none"> • Oral steroid use (Use > 4 courses in past year) • Inhaled steroids > 2 weeks 	<p>Other potential indications for referral:</p> <ul style="list-style-type: none"> ▶ When patient has been hospitalized for COPD ▶ When patient has frequent respiratory infections or exacerbations ▶ When patient has a rapid decline in FEV₁ ▶ When pulmonary function tests show mixed restrictive and obstructive lung disease ▶ When patient with COPD has less than 10 pack-year smoking history

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SPIROMETRY- PULMONARY FUNCTION TESTS (PFTs)

Spirometry:

Spirometry is recommended for diagnosis of symptomatic patients at risk of COPD, particularly smokers > 45 years old. Patients with COPD have airflow obstruction that can be demonstrated by spirometry as a reduced FEV₁/FVC ratio (<70%). Full PFTs with lung volumes and diffusion capacity (DLCO) can be helpful but are not necessary to establish diagnosis or severity of COPD.

Pre- and Post-bronchodilator FEV₁:

Measurement of pre- and post-bronchodilator FEV₁ can assist with the differentiation between COPD and asthma.

- Generally performed only once at time of diagnosis, this test is useful to:
 - ◊ Establish diagnosis of COPD and help rule out asthma
 - ◊ Establish a patient's best attainable lung function
 - ◊ Gauge a patient's prognosis
 - ◊ Guide treatment decisions
- In asthma, the spirometric abnormality tends to return to normal with bronchodilators, although this distinction between COPD and asthma is not absolute.
- Significant reversibility of FEV₁ (increase of over 12% and 200 mL after inhaling a short-acting bronchodilator) suggests asthma
- If the FEV₁/FVC ratio improves to > 70% after bronchodilation, a diagnosis of COPD can be ruled out.

Peak Flow meters:

Although peak flow meters should not be used to diagnose or monitor COPD, monitoring of peak expiratory flow by the patient can be used in certain situations to determine reversibility, and variability, in airway obstruction.

SPIROGRAMS AND FLOW VOLUME CURVES

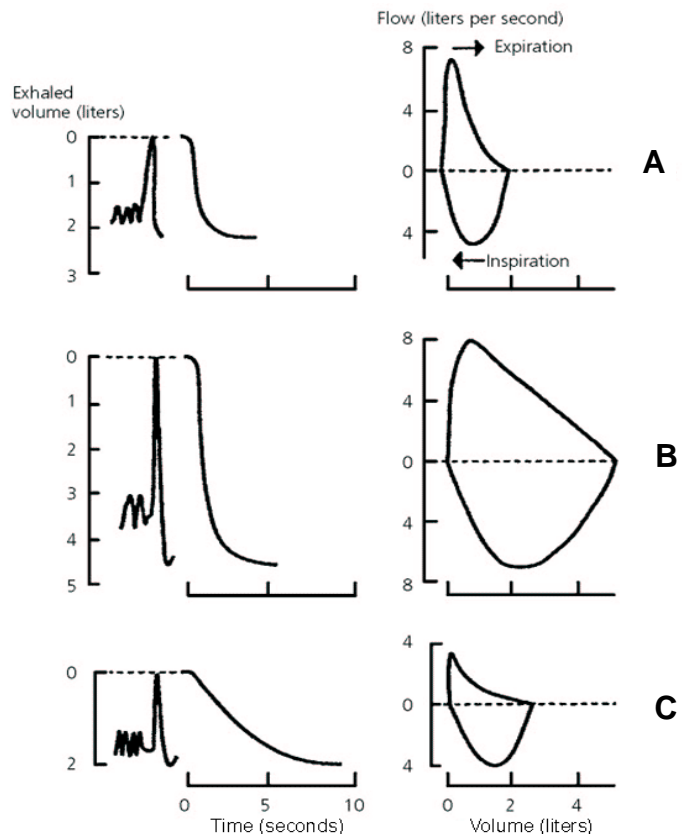
A) Restrictive ventilatory defect

B) Normal

C) Obstructive ventilatory defect

- Spirometry measures the rate at which the lung volume changes during forced breathing maneuvers.
- Spirometry begins with a full inhalation, followed by a forced expiration that rapidly empties the lungs.
- Expiration is continued for as long as possible or until a plateau in exhaled volume is reached.
- These efforts are recorded and graphed.
- **FVC**—Forced vital capacity; the total volume of air that can be exhaled during a maximal forced expiration effort.
- **FEV₁**—Forced expiratory volume in one second; the volume of air exhaled in the first second under force after a maximal inhalation.
- **FEV₁/ FVC ratio**—The percentage of the FVC expired in one second.

Pulmonary function testing. In: Murray JF, Nadel JA, eds. Textbook of respiratory medicine. 3d ed. Philadelphia: Saunders, 2000:805



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CRONIC OBSTRUCTIVE PULMONARY DISEASE: WHAT YOU SHOULD KNOW



Q: WHAT IS COPD?

A: Chronic Obstructive Pulmonary Disease (COPD) is a lung disease usually caused by smoking.

- **“Chronic”** means long lasting
- **“Obstructive”** means blockage of air flow
- **“Pulmonary”** means lungs

Q: ARE THERE DIFFERENT KINDS OF COPD?

A: YES, COPD is often a mix of two problems: EMPHYSEMA & CHRONIC BRONCHITIS

- ▶ In a healthy person, the tiny air sacs in the lungs are like balloons. As you breathe in and out, they get bigger and smaller to move air through your lungs.
- ▶ With emphysema, these air sacs are damaged and lose their stretch. Less air gets in and out of the lungs, which makes you feel short of breath.
- ▶ In chronic bronchitis, the airways that carry air to the lungs (bronchial tubes) get inflamed and make a lot of mucus. This can narrow or block the airways, making it hard for you to breathe.

Q: WHAT CAUSES COPD?

A: COPD is almost always caused by smoking.

- ▶ Over time, breathing tobacco smoke irritates the airways and destroys the stretchy fibers in the lungs.
- ▶ It usually takes many years for the lung damage to start causing symptoms, so COPD is most common in people who are older than 60.
- ▶ Other things that may put you at risk for COPD include breathing chemical fumes, dust, air pollution, and secondhand smoke.

Q: WHAT ARE THE SYMPTOMS OF COPD?

A: The main symptoms are:

- ▶ A long-lasting (chronic) cough.
- ▶ Mucus that comes up when you cough.
- ▶ Shortness of breath that gets worse when you exercise.
- ▶ As COPD gets worse, you may be short of breath even when you do simple things such as getting dressed or walking a short way. It gets harder to eat or exercise, and breathing takes much more energy. People often lose weight and get weaker.
- ▶ At times, your symptoms may suddenly flare up and get much worse. This is called a COPD exacerbation (say "egg-ZASS-er-BAY-shun").
- ▶ An exacerbation can range from mild to life-threatening. The longer you have COPD, the more severe flare-ups can be.

Q: HOW IS COPD DIAGNOSED?

A: To find out if you have COPD, your doctor will:

- ▶ Examine you and listen to your lungs.
- ▶ Ask you questions about your past health and whether you smoke or have smoked in the past or have been exposed to other things that can irritate your lungs.
- ▶ Have you do breathing tests, including spirometry, to find out how well your lungs work.

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COPD: WHAT YOU SHOULD KNOW (CONTINUED)

Q: HOW IS COPD TREATED?

A: There is no cure for COPD and the only way to slow COPD progression is to quit smoking. This is the most important thing you can do. It is never too late to quit. No matter how long you have smoked or how serious your COPD is, quitting smoking can help stop the damage to your lungs.
 Medicines can often be used to help you feel better and help you breathe easier.
 Most of the medicines used to treat COPD are inhaled so they go straight to your lungs.
 If you get an inhaler, it is very important to use it just the way your medical team shows you.
 (Ask how to use it if you are not sure).

Q: WILL I NEED TO USE OXYGEN?

A: If your COPD is severe, you may need oxygen some or most of the time.

Q: WHAT ELSE SHOULD I DO TO TAKE CARE OF MY LUNGS?

A: People who have COPD are more likely to get lung infections, so you will need to get a flu shot every year. You should also get a pneumonia shot. It may not keep you from getting pneumonia, but if you do get pneumonia, you probably will not be as sick.
 Take rest breaks during the day.
 Stay as healthy as you can by:

- ▶ Avoiding things that can irritate your lungs, such as smoke, pollution, and air that is cold and dry.
- ▶ Get regular exercise to stay as strong as you can.
- ▶ Eat as well as possible so you can keep up your strength. If you are losing weight talk to your medical team.

Q: HOW FAST WILL MY LUNGS GET WORSE?

A: This is different for each person. Stopping smoking is the best way to be sure your lungs don't get worse.

Q: WHEN SHOULD I CONTACT MY MEDICAL TEAM?

A: Contact your medical team if:

- ▶ Your medicine is not working as well as it had been.
- ▶ Your symptoms are slowly getting worse and you have not seen your Primary Care Provider recently.
- ▶ You have a cold and:
 - ▶ Your fever lasts longer than 2 to 3 days.
 - ▶ Breathlessness occurs or becomes noticeably worse.
 - ▶ Your cough gets worse or lasts longer than 7 to 10 days.
- ▶ You cough up any amount of blood.

Q: WILL COPD SHORTEN MY LIFE?

A: Treatment for COPD is helping people live longer. But COPD is a disease that keeps getting worse, and it can be fatal. Because COPD can be fatal it is important to talk with your doctor about end of life issues such as:

- ▶ What is your idea of the "ideal death"? Do you want to be kept alive at all costs? Do you want a calm, peaceful death?
- ▶ If you have sudden, life-threatening breathing problems, do you want mechanical ventilation, which means being put on a machine that helps you breathe?
- ▶ What other kinds of medical treatment do you want, or not want, when you are near the end of life?







You should complete an Advance Directive (CDCR Form 7421) where you can list who you want to speak for you if you can no longer speak for yourself. If you also fill out a POLST Form (CDCR 7465) you can tell your healthcare team if you want to be put on machines, have a feeding tube if needed, or if you simply want comfort care if you are near death.

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CHRONIC OBSTRUCTIVE PULMONARY DISEASE: WHAT YOU SHOULD DO



WHAT TYPE OF MEDICATION ARE YOU TAKING? (CHECK ONE)

Rescue	Short acting Medication	Long Acting Medication	Steroids/Combination Medication
<p>Levalbuterol (Xopenex)</p>  <p>These inhalers can relax the tight muscles surrounding the airways and “open” the airways for a short time, usually for 1-4 hours.</p> <p>In COPD the lungs are usually “stiff” and do not open as much with inhaler treatments as they do in asthma patients so this medicine must be used more often in patients with COPD.</p> <p>Warning: If you are using this inhaler every day and not getting relief you should talk with your Primary Care Provider.</p>	<p>Ipratropium (Atrovent)</p>  <p>This medication can be used up to 4 times a day. It can last 4-6 hours. Some people use this inhaler just when they are short of breath, others use it regularly, several times a day.</p>	<p>Tiotropium (Spiriva HandiHaler)</p>  <p>This is a long-acting bronchodilator which lasts 24 hours. It should be used once daily every day.</p> <hr/> <p>Salmeterol (Serevent)</p>  <p>This is a long-acting bronchodilator. It's effect will last about 12 hours or more and it should be used every day.</p>	<p>Fluticasone (Flovent)</p>  <p>Rinse mouth after use This inhaler prevents inflammation and swelling in the airways. It will take 3-7 days to work so you must use it every day. This inhaler will not help in a flare of COPD.</p> <hr/> <p>Salmeterol/Fluticasone (Advair Diskus)</p>  <p>Rinse mouth after use This inhaler prevents inflammation and swelling in the airways. It will take 3-7 days to work so you must use it every day. This inhaler will not help in a flare of COPD.</p>

TO PREVENT COPD **WHAT TO DO IF YOU HAVE A FLARE OF COPD**

<p>Don't smoke</p> 	<ul style="list-style-type: none"> • Take your “rescue” inhaler immediately • Sit down and loosen any tight fitting clothing. Do not lie down. • If you do not immediately improve during an attack, continue to take one puff of your “rescue” inhaler every minute for five minutes or until symptoms improve. <p>If your symptoms do not improve in five minutes seek medical attention IMMEDIATELY.</p>
<p>GET VACCINATED</p> <p>Be sure you have received a Pneumovax shot at least once. Be sure to get the flu shot every year.</p>	

TO KEEP YOUR INHALER CLEAN

Cleaning:

- Once a day clean the inhaler and cap by rinsing them in warm running water. Let the inhaler dry before you use it again.
- Twice a week wash the plastic mouthpiece with mild soap and warm water. Rinse and dry well.

HELPFUL HINTS

- Keep your rescue inhaler with you at all times. If you are going into an area where security concerns may prevent you from keeping your rescue inhaler with you, leave your inhaler with the custody staff that is in charge of that area. Inform them you may need your medication right away if a flare should occur.
- Plan ahead and refill prescriptions before they run out.
- Being depressed or anxious can make your COPD worse. Talk with your provider if you are experiencing symptoms of depression or anxiety.
- Stay well. Reduce your risk of colds and flu (which can trigger a flare of COPD) by washing your hands often and getting a flu shot every year.
- Remember, a big part of your COPD control depends on you. The medical staff is available to help you but you must do your part to help them.

SUMMARY	DECISION SUPPORT	PATIENT EDUCATION/SELF MANAGEMENT
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PULMONARY REHABILITATION FOR COPD: WHAT YOU SHOULD DO

WHAT IS PULMONARY REHAB? Pulmonary rehabilitation (rehab) includes self care that can help you improve how you feel if you have a chronic (ongoing) breathing problem such as COPD. It is used with medical therapy to help you understand your lung condition and find ways that you can help yourself breathe better. It includes stopping smoking, knowing about your medications and using them correctly, getting vaccinated against pneumonia and the flu, and seeking counseling if you are having trouble with stress, anxiety, or depression. In addition, the following are important:

Exercise training: Always check with your health care provider first. It is best to slowly increase your exercise to at least 20-30 minutes three or four days a week. As you improve your endurance and muscle strength you will be better able to carry out daily activities. Warming up by stretching your arms and legs is important. One of the easiest exercises is walking:

Walking guidelines

- Start with a short walk. See how far you can go before you become breathless. Stop and rest whenever you are short of breath.
- Count the number of steps you take while you inhale. Then exhale for twice as many steps. For example, if you inhale while taking two steps, exhale through pursed lips while taking the next four steps. Learn to walk so breathing in and exhaling out will become a habit once you find a comfortable breathing rate.
- Try to increase your walking distance. If you can set specific goals, you'll find you can go farther every day. Many people have found that an increase of 10 feet a day is a good goal.
- Set reasonable goals. Don't walk so far that you can't get back to your starting point without difficulty breathing. Never overdo it. Always stop and rest for two or three minutes when you start to become short of breath.

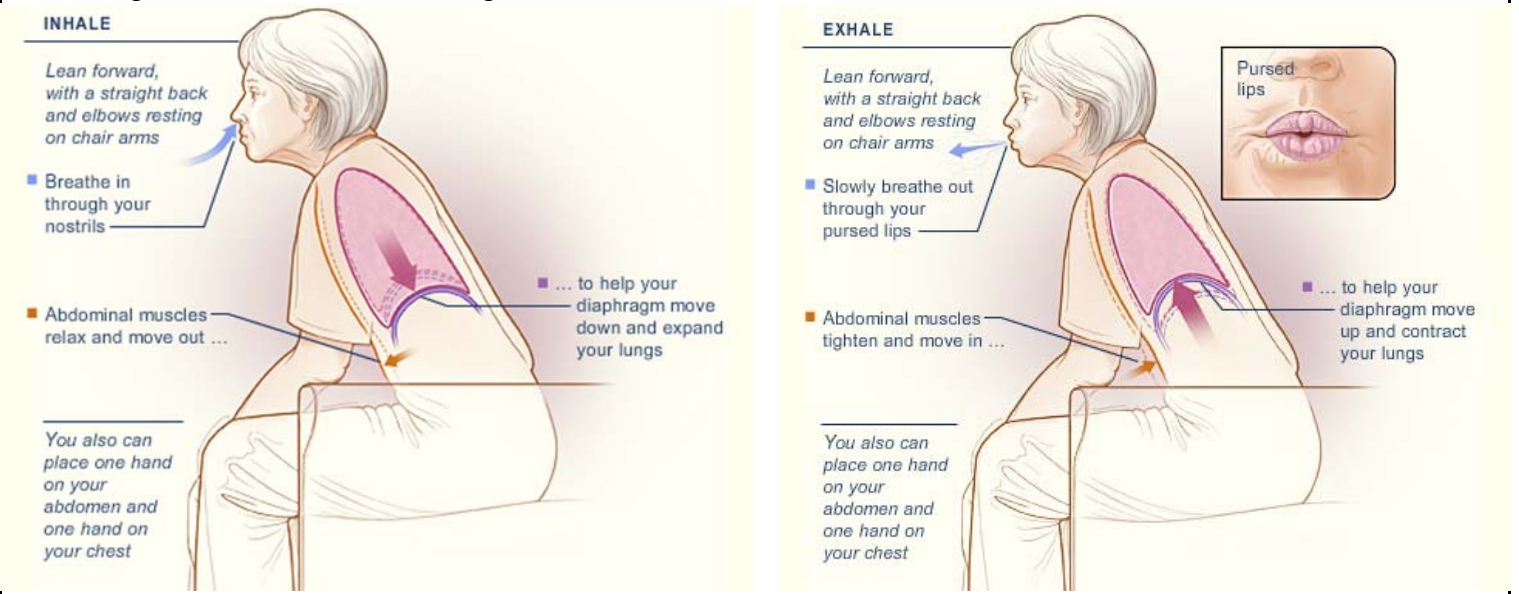
Nutritional information:

If you are **overweight**, fat around your waist can push up against your diaphragm (a muscle that helps you breathe). This will give your lungs less room to expand during breathing. Your team may recommend a healthy eating plan to help you lose weight. If you are **underweight**, your team may recommend a healthy eating plan to help you gain weight. Some people who have COPD have trouble keeping a healthy weight. If you lose too much weight, you can lose muscle mass which can weaken muscles used for breathing.

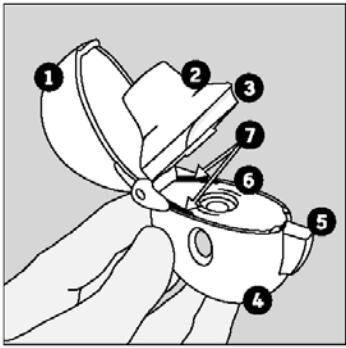
Breathing techniques: (From the National Heart, Lung, and Blood Institute)

There are some breathing techniques that can improve your breathing. For example taking longer, deeper, less frequent breaths help many people with COPD. One example of this is called "pursed-lip breathing".

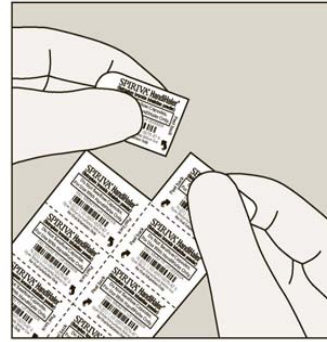
- ▶ Pursed-lip breathing decreases how often you take breaths and keeps your airways open longer with each breath. This allows more air to flow in and out of your lungs so you can be more physically active.
- ▶ To do pursed-lip breathing, you breathe in through your nostrils. Then you slowly breathe out through slightly pursed lips, as if you're blowing out a candle. Exhale two to three times longer than you inhale. Some people find it helpful to count to two while inhaling and to four or six while exhaling.



USING YOUR HANDIHALER 

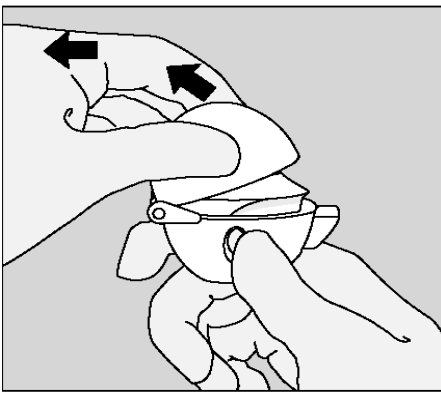


1. dust cap (lid)
2. mouthpiece
3. mouthpiece ridge
4. base
5. green piercing button
6. center chamber
7. air intake vents



A. Parts of HandiHaler

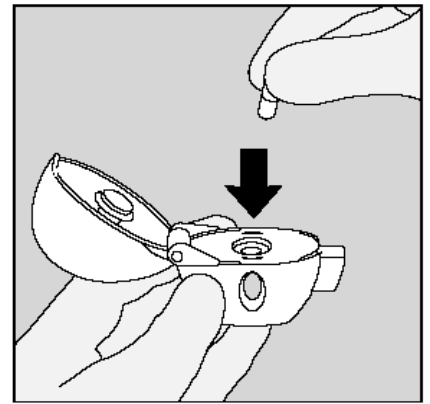
B. Unwrap one Spiriva capsule– do NOT put in mouth



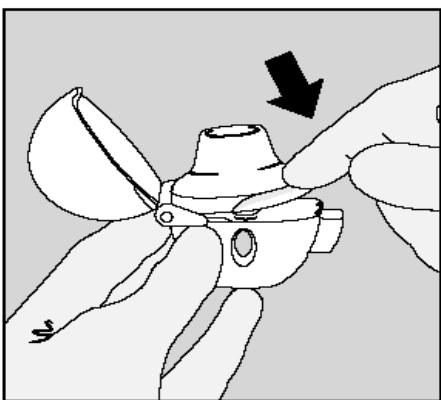
C. Pull dust cap (lid) open



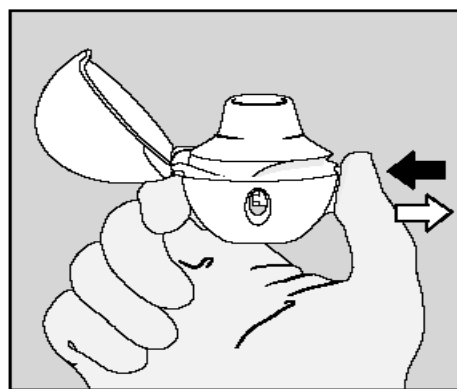
D. Lift mouthpiece to show center chamber



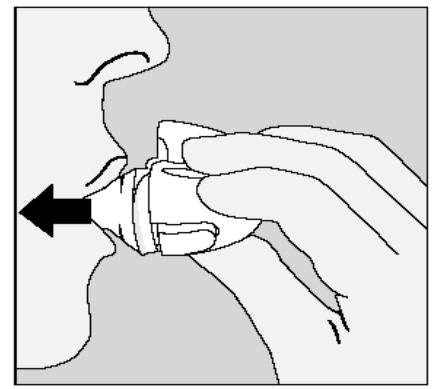
E. Insert capsule in center chamber



F. Close mouthpiece until you hear a click.



G. Hold HandiHaler with mouthpiece up. Then press green button down all the way once (only). This will release the medicine. Do not shake.



- H. Breathe all the way out into the air (exhale)**
- I. Holding HandiHaler on its side, place it in mouth, close lips and take a deep breath in (you should hear or feel the capsule vibrate).**
- J. Repeat the HandiHaler inhalation once more.**

Note: After using, tip out the used capsule into the trash. Do not touch the capsule except to insert into the chamber. Limit handling of capsule.



USING YOUR ADVAIR DISKUS



A. You may have a “counter” to let you know how many doses are left in the diskus



B. To open diskus place one thumb on the thumbgrip and push it away from you as far as it will go until you see the mouthpiece and feel a snap.



C. To get the diskus ready to use, hold it on its side as shown and slide the lever away from you until it clicks. **DO NOT TILT** the diskus. **DO NOT** close diskus or play with the lever.



D. First breathe out (exhale) into the air. (Do not breathe out into the diskus mouthpiece).

E. Now place diskus up to your mouth and take a quick and deep breath in.

F. Take diskus out of your mouth. Hold your breath for about 10 seconds.



G. When finished, close the Diskus by sliding the thumbgrip back towards you until it clicks shut. The lever will return to its original position when you close the diskus.

Note: Never breathe into the diskus. Never take the diskus apart. The diskus should always be flat on its side and flat when you use it. Never wash the mouthpiece, or any part of the diskus. Always keep it dry. Never take an extra dose, even if you did not taste or feel the medicine.

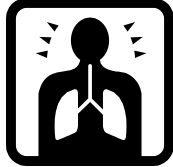
SUMMARY	DECISION SUPPORT	PATIENT EDUCATION/SELF MANAGEMENT
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ENFERMEDAD PULMONAR OBSTRUCTIVA CRÓNICA (EPOC): LO QUE DEBE DE SABER

P: ¿QUÉ ES LA EPOC?

R: La Enfermedad Pulmonar Obstructiva Crónica (EPOC) es una enfermedad pulmonar mayormente causada por el fumar.

- **“Crónica”** significa de larga duración o habitual
- **“Obstructiva”** significa caracterizada por bloqueo u obstáculo (al paso del aire)
- **“Pulmonar”** significa referente a los pulmones



Q: ¿EXISTÉN DIFERENTES CLASES DE EPOC?

R: Si, La EPOC es a menudo la combinación de dos problemas el ENFISEMA & la BRONQUITIS CRÓNICA

- ▶ En una persona saludable, los saquitos de aire (alvéolos) en los pulmones son como globos. Al respirar hacia dentro (inspirar) y fuera (exhalar), se hacen grandes y pequeños respectivamente.
- ▶ Con enfisema, estos saquitos de aire (alvéolos) se dañan y pierden su elasticidad.
- ▶ Menor cantidad de aire puede entrar y salir de los pulmones, lo cual puede hacerle sentir falta de aire.
- ▶ En la bronquitis crónica, las vías respiratorias que llevan aire dentro de los pulmones (tubos bronquiales) se inflaman y producen una gran cantidad de mucosidad. Esto puede estrechar u obstaculizar las vías respiratorias, haciéndole difícil el respirar.

P: ¿QUÉ CAUSA LA EPOC?

R: La EPOC es casi siempre causada por el fumar.

- ▶ A largo plazo, el respirar el humo del tabaco irrita las vías respiratorias y destruye las fibras elásticas de los pulmones.
- ▶ Frecuentemente pueden pasar años antes de que el daño pulmonar cause síntomas, por esa razón la EPOC es más común en pacientes mayores de 60 años.
- ▶ Otras cosas que le pueden poner a riesgo incluyen el respirar vapores químicos, polvo, aire contaminado y *“humo de segunda mano” (humo proveniente del extremo encendido del cigarrillo y del humo exhalado por los fumadores).*

P: ¿CÚALES SON LOS SÍNTOMAS DE LA EPOC?

R: Los síntomas mas comunes son:

- ▶ Una tos duradera (crónica).
- ▶ Tos productiva de gran mucosidad.
- ▶ Sensación de falta de aire, especialmente durante la actividad física y el ejercicio.
- ▶ A medida que la EPOC progresa, usted puede experimentar dificultad al respirar incluso al hacer cosas simples como vestirse o caminar cortas distancias. Sera más difícil el comer o el hacer ejercicio, y el respirar requerirá mayor esfuerzo y energía. Las personas usualmente pierden peso y se debilitan.
- ▶ A veces , sus síntomas pueden recrudecerse y hacerse peores. Esto se llama exacerbación aguda de la EPOC.
- ▶ Las exacerbaciones pueden variar de leves a graves con mayor riesgo de muerte. Contra más tiempo sufra usted de EPOC, las exacerbaciones pueden ser más serias.

P: ¿CÓMO ES LA EPOC DIAGNOSTÍCADA?

R: Para saber si usted tiene la EPOC, su proveedor de Atención Primaria le:

- ▶ Examinará y auscultará sus pulmones.
- ▶ Preguntará acerca de su salud pasada y si usted fuma o ha sido expuesto a otras cosas que hayan podido irritar sus pulmones.
- ▶ Hará exámenes respiratorios, incluyendo espirometría, para así averiguar que tan bien se encuentran sus pulmones.

SUMMARY	DECISION SUPPORT	PATIENT EDUCATION/SELF MANAGEMENT
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EPOC: LO QUE DEBE DE SABER (CONTINUACIÓN)

P: ¿CÓMO SE TRATA LA EPOC?

R: No existe cura para la EPOC y la única forma de disminuir su progreso es dejando de fumar. Esto es lo más importante que usted puede hacer. Nunca es demasiado tarde para dejar de fumar. No importa por cuánto tiempo ha fumado o que severa es su EPOC, el dejar de fumar puede parar el daño a sus pulmones.
 Las medicinas con frecuencia pueden ayudarle a sentirse mejor, y a respirar con mayor facilidad.
 La mayoría de las medicinas son inhaladas y van directamente a sus pulmones.
 Si usted tiene un inhalador, es muy importante que lo use como le fué indicado por su equipo médico. (Pregunte como usarlo si tiene dudas).

P: ¿NECESITARE USAR OXIGENO?

R: Si su EPOC es severa, usted podría necesitar oxígeno algunas veces o la mayoría del tiempo.

P: ¿QUÉ MÁS PODRÍA HACER PARA CUIDAR DE MIS PULMONES?

R: Las personas que sufren de EPOC pueden con mayor facilidad sufrir de infecciones pulmonares, por lo cual usted debe de vacunarse contra la gripe cada año. Usted también debería de recibir una vacuna contra la neumonía. Esta no puede protegerle por completo de padecer una neumonía, pero de ser así, no estaría tan enfermo.

- ▶ Manténgase lo más saludable posible:
 - ▶ Evite cosas/circunstancias que irriten sus pulmones, como el humo, la polución, y el aire frío y seco.
 - ▶ Tome periodos de descanso durante el día.
 - ▶ Haga ejercicio regularmente para mantenerse lo más fuerte posible.
 - ▶ Coma lo mejor posible para mantener su fortaleza. Si está perdiendo peso hable con su equipo médico.

P: ¿CON QUÉ RAPIDEZ PODRÍAN MIS PULMONES EMPEORAR?

R: Esto es diferente para cada persona. Dejar de fumar es la mejor forma de asegurarse que sus pulmones no empeoraran.

P: ¿CUÁNDO DEBO DE COMUNICARME CON MI EQUIPO MÉDICO?

A: Comuníquese con su equipo médico si:

- ▶ Su medicina no le hace sentir tan bien como antes.
- ▶ Sus síntomas poco a poco empeoran, y usted no ha visto a su proveedor de Atención Primaria recientemente.
- ▶ Usted sufre de un resfriado y:
 - ▶ Su fiebre dura más de 2 ó 3 días.
 - ▶ Sufre de dificultad al respirar (le falta el aliento) o ha empeorado visiblemente.
 - ▶ Su tos es peor o dura más de 7 a 10 días.
- ▶ No ha sido diagnosticado(a) con EPOC pero tiene los síntomas. Historia de fumar (aunque haya sido en el pasado) aumenta enormemente la posibilidad de que estos síntomas sean debidos a la EPOC.
- ▶ Usted tose cualquier cantidad de sangre.

P: ¿LA EPOC ACORTARA MI VIDA?

El tratamiento de la EPOC está ayudando a que personas vivan más tiempo. Pero la EPOC es una enfermedad progresiva que continúa agravándose, y que puede ser fatal. Debido a esto es muy importante que usted hable con su proveedor medico acerca de temas relacionados con el fin de vida, como:

¿Cuál es su opinión acerca de la “muerte ideal”? ¿Quiere usted ser mantenido con vida a cualquier costo? ¿Desea usted una muerte en calma y con paz?

¿Si usted tuviese repentinamente, problemas respiratorios que pusieran en riesgo su vida, desearía ventilación mecánica, lo que significaría ponerle en una maquina que le ayude a respirar?

¿Qué otros tipos de tratamiento médico *desearía*, o *no desearía*, al aproximarse el fin de su vida?







Complete el documento de Instrucciones Previas (Advance Directives-CDCR Forma 7421) donde usted puede nombrar un representante que hable por usted en caso de que no pueda usted hablar por sí mismo. Rellene también la Forma POLST (CDCR 7465) para informar a su equipo médico acerca de sus deseos al final de su vida, como el ser puesto en maquinas, tener un tubo de alimentación de necesitarlo, o simplemente recibir el cuidado necesario para aliviar su malestar y dolor.

SUMMARY **DECISION SUPPORT** **PATIENT EDUCATION/SELF MANAGEMENT**

ENFERMEDAD PULMONAR OBSTRUCTIVA CRÓNICA: LO QUE DEBE DE HACER



¿QUÉ TIPO(S) DE MEDICINA(S) ESTA USTED TOMANDO? [MARQUE LA(S)]

Rescate/Apertura	Acción Corta/Apertura	Medicación de Acción Prolongada	Medicación Combinación/Esteroidea
 <p>Xopenex: _____ Albuterol : _____ Otro: _____</p> <p>Estos inhaladores pueden relajar los duros músculos que rodean las vías respiratorias y “abrir” las vías por un pequeño periodo de tiempo, por lo general de 1-4 horas. En la EPOC los pulmones se encuentran usualmente “rígidos” y no se abren tanto como en pacientes con asma, así que esta medicina tiene que ser usada con más frecuencia por los pacientes con EPOC.</p> <p>Dosis: _____ Direcciones: _____</p> <p>Aviso: Si usted usa esta medicina todos los días y no siente alivio, usted debe de hablar con su proveedor medico</p>	<p>Ipratropium (Atrovent) :</p> <p>Dosis: _____</p>  <p>Esta medicina puede ser usada hasta 4 veces al día. Su duración es entre 4-6 horas. Algunas personas solo la usan cuando se sienten sin aliento, otras la usan regularmente, varias veces al día.</p>	<p>Tiotropium (Spiriva):</p>  <p>_____</p> <p>Salmeterol (Serevent):</p>  <p>_____</p> <p>Otro(a) _____</p> <p>Los broncodilatadores de acción prolongada duran 12 horas o más, y se usan a diario.</p>	<p>Fluticasone (Flovent):</p>  <p>_____</p> <p>Salmeterol/Fluticasone (Advair)</p>  <p>_____</p> <p>Estos inhaladores previenen la inflamación e hinchazón de las vías respiratorias. Estos inhaladores requieren entre 3-7 días para ser efectivos por lo tanto usted debe de usarlos a diario. Estos inhaladores no le ayudaran en caso de una reagudización de su EPOC.</p>

PARA PREVENIR LA EPOC



1. No Fume

VACUNESE

Asegurese de haber recibido la vacuna “Pneumovax” al menos una vez.
 Asegurese de recibir la vacunacion contra la gripe cada año.

QUE HACER EN CASO DE REAGUDIZACIÓN DE LA EPOC

- Use su inhalador de “rescate” inmediatamente.
- Siéntese y abrase cualquier vestimenta estrecha o tirante. No se acueste.
- Si no mejora inmediatamente durante una crisis/ataque, continúe tomando una inhalación de su inhalador de “rescate” cada minuto por 5 minutos o hasta que los síntomas mejoren.

Si sus síntomas no mejoran en 5 minutos solicite asistencia médica **INMEDIATAMENTE.**

COMO MANTENER SU INHALADOR LIMPIO

Limpieza:

- Una vez al día limpie el inhalador y su tapa enjuagándoles en agua tibia del grifo. Deje secar el inhalador completamente antes de usar de nuevo.
- Dos veces por semana lave la boquilla de plástico con jabón y agua tibia. Enjuáguela y seque bien.

CONSEJOS PRÁCTICOS

- Mantenga su inhalador de rescate con usted en todo momento. Si usted entra en un área donde por razones de seguridad le sea prohibido guardar con usted su inhalador de rescate, deje el inhalador con alguno de los oficiales de custodia a cargo de ese área. Infórmeles que usted podría necesitar su medicamento urgentemente en caso de una reagudización.
- Planee su futuro y rellene sus medicinas antes de que se acaben.
- Si usted está usando su medicina de “rescate” muy a menudo, su EPOC está empeorando. Esto puede producir una cicatrización permanente de sus tubos bronquiales o incluso la muerte. Comuníquese con personal médico inmediatamente.
- La depresión o la ansiedad pueden agravar su EPOC. Hable con su proveedor médico si esta experimentando depresión o ansiedad.
- Manténgase en buen estado de salud. Reduzca el riesgo de resfriados que puedan ocasionar un reagudización de su EPOC—lavándose las manos a menudo y vacunándose contra la gripe anualmente.
- Recuerde, una gran parte del control de su EPOC depende de usted. El personal médico estará siempre disponible para ayudarle pero usted debe de hacer de su parte para asistirles.

SUMMARY	DECISION SUPPORT	PATIENT EDUCATION/SELF MANAGEMENT
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REHABILITACIÓN PULMONAR DE LA EPOC: LO QUE DEBE DE HACER

¿Qué es la rehabilitación pulmonar? La rehabilitación pulmonar incluye medidas de *autocuidado* que le pueden ayudar a usted a sentirse mejor si tiene un problema respiratorio crónico (continuo/persistente) como es la EPOC. Se usa como terapia médica ayudándole a comprender el estado de sus pulmones, respirar mejor y regresarle a un estilo de vida más activo y placentero. Esta incluye el dejar de fumar, conocer bien sus medicinas y como usarlas correctamente, vacunarse contra la neumonía y la gripe. Si tiene usted problemas con estrés, ansiedad, o depresión, también puede ser útil hablar con un consejero profesional o psicólogo. Adicionalmente, lo siguiente es importante:

Ejercicios de entrenamiento: En primer lugar siempre consulte a su proveedor médico. Es mejor aumentar lentamente sus ejercicios a al menos 20-30 minutos tres o cuatro días por semana. A medida que su condición física y fortaleza muscular aumentan usted será capaz de hacer sus actividades diarias con mayor facilidad. Es importante hacer ejercicios de calentamiento estirando sus brazos y piernas. Uno de los ejercicios más fáciles es el caminar.

Guías para Caminar:

- Comience con una caminata corta. Observe cuánto puede caminar antes de sentir falta de aire al respirar. Pare y descanse cuando se sienta sin aliento.
- Cuente el número de pasos que usted toma mientras inhala. A continuación procure exhalar durante el doble número de pasos. Por ejemplo, si toma dos pasos mientras inhala, trate de exhalar con sus labios fruncidos (a manera de silbar) al tomar los siguientes cuatro pasos. Aprenda a caminar de tal forma que la inspiración (respirar hacia adentro) y la espiración (respirar hacia afuera) se le hagan un hábito una vez que usted encuentre una frecuencia respiratoria desahogada.
- Trate de aumentar la distancia de sus caminatas. Si usted establece metas específicas, se dará cuenta que puede caminar más lejos cada día. Muchas personas encuentran que el aumentar 10 pies al día es una buena meta.
- Establezca metas razonables. No camine tan lejos que no pueda regresar a su punto de partida sin sentir dificultades respiratorias. Nunca se sobrepase. Siempre pare y descanse por dos o tres minutos cuando comience a sentir que le falta el aire.

Información Alimenticia:

Si sufre usted de **sobrepeso**, la grasa alrededor de su cintura puede empujar su diafragma hacia arriba (un músculo que le ayuda a respirar). Dándole a sus pulmones menos espacio para expandirse durante su respiración. Su equipo de salud podría recomendarle un plan de comidas para ayudarle a perder peso.

Si tiene **peso bajo**, su equipo podría recomendarle un plan alimenticio para ganar peso. Algunas personas con EPOC tienen dificultades manteniendo un peso saludable. Si pierde mucho peso, usted puede perder masa muscular que a su vez puede debilitar los músculos usados para respirar.

Técnicas Respiratorias: (Del Instituto Nacional del Corazón, Pulmón y Sangre)

Existen técnicas respiratorias que pueden mejorar su respiración. Por ejemplo el tomar respiraciones más largas, profundas y como consecuencia menos frecuentes puede ser de ayuda a personas con EPOC. Un ejemplo es la llamada "respiración de labios fruncidos."

- ▶ El respirar con *labios fruncidos* disminuye la frecuencia de respiraciones y mantiene las vías respiratorias abiertas por mayor tiempo al respirar. Permitiéndole una mayor entrada y salida de aire en los pulmones y facilitando una mayor actividad física.
- ▶ Para respirar con los *labios fruncidos*, usted inhala aire por su nariz. Después lentamente exhala por la boca con sus *labios fruncidos*, como si fuese a soplar una vela (candela) o a silbar. Su exhalar debe de ser dos o tres veces más largo que su inhalar. Algunas personas encuentran de ayuda el contar hasta dos mientras inhalan y hasta cuatro o seis al exhalar.

INHALE

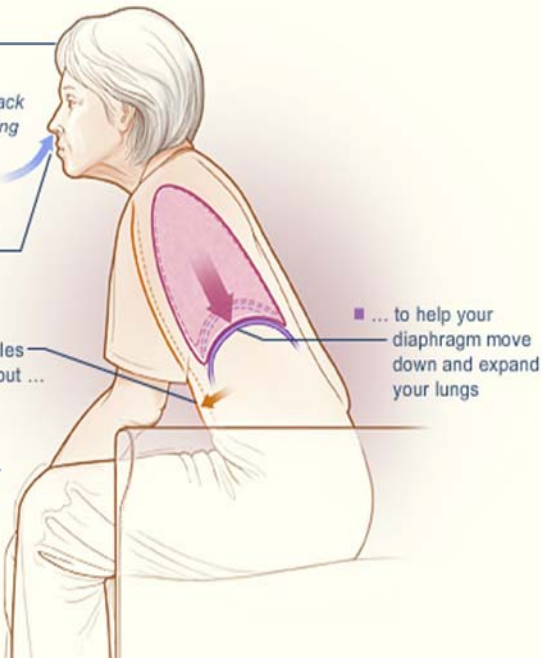
Lean forward, with a straight back and elbows resting on chair arms

Breathe in through your nostrils

Abdominal muscles relax and move out ...

... to help your diaphragm move down and expand your lungs

You also can place one hand on your abdomen and one hand on your chest



EXHALE

Lean forward, with a straight back and elbows resting on chair arms

Slowly breathe out through your pursed lips

Abdominal muscles tighten and move in ...

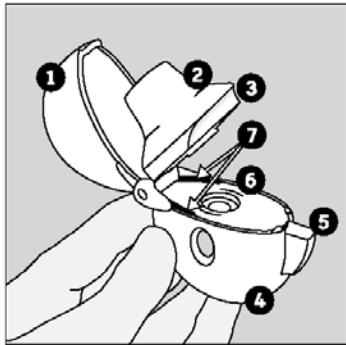
... to help your diaphragm move up and contract your lungs

You also can place one hand on your abdomen and one hand on your chest

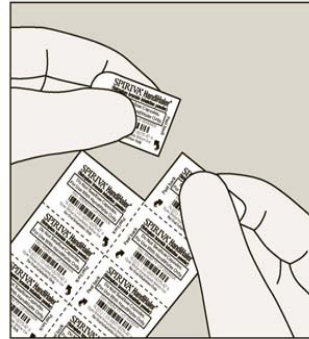




USANDO SU INHALADOR (HANDIHALER)

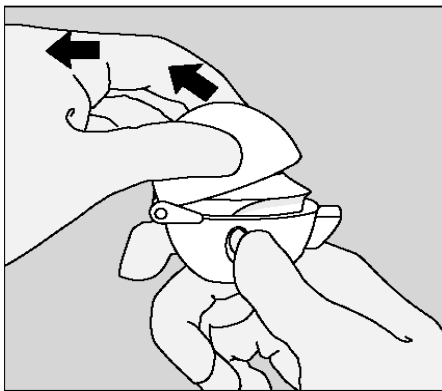


1. Tapa
2. Boquilla
3. Margen de la boquilla
4. Base
5. Pulsador perforador (verde)
6. Cámara central
7. Aperturas de toma de aire

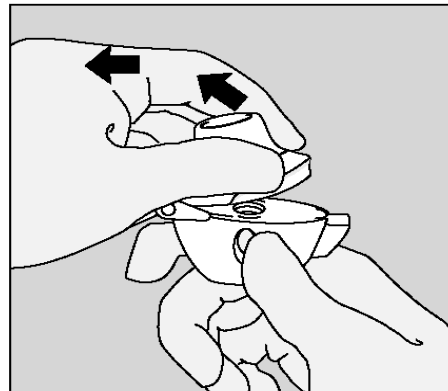


A. Partes del inhalador (HandiHaler)

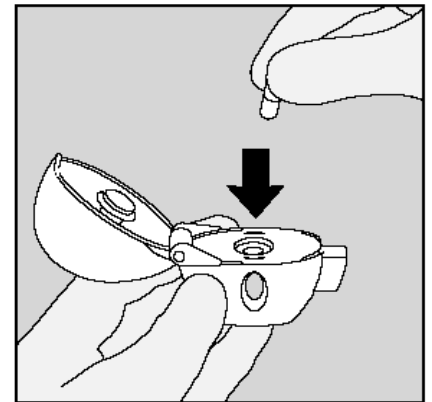
B. Tome una cápsula de Spiriva – no se la ponga en la boca



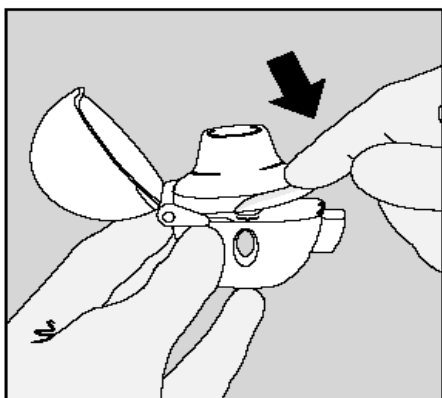
C. Abra la tapa



D. Levante la boquilla para exponer la cámara central

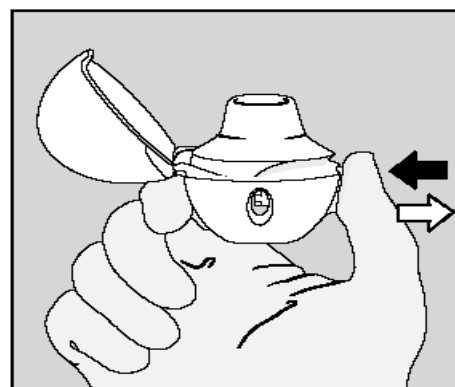


E. Introduzca la cápsula en la cámara central

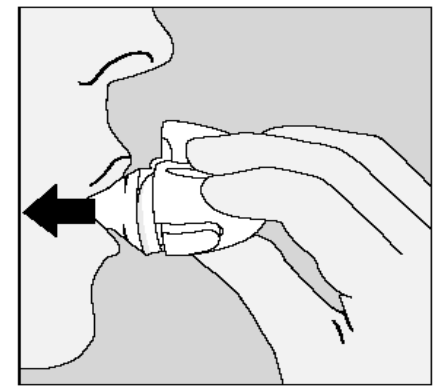


F. Cierre la boquilla hasta oír un “clic”

Nota: Después de usar. Abra el inhalador y arroje la cápsula en la basura. No toque la cápsula. Mantenga el inhalador seco.



G. Sostenga el inhalador con la boquilla para arriba. Apriete el pulsador perforador (color verde) hasta el fondo, rompiendo así la cápsula y dejando lista la sustancia activa para ser inspirada. No lo agite.



**H. Expulse el aire por la boca manteniendo el inhalador apartado de la misma (no mostrado).
I. Con el inhalador de lado coloque la boquilla en su boca, cierre sus labios y aspire profundamente (oírás sentirá la cápsula vibrar).**



USANDO SU INHALADOR (“DISKUS”):



A. El inhalador (“diskus”) tiene un “contador” que le informa de las dosis que aún contiene.



B. Para abrir el inhalador (“diskus”). Sostenga el inhalador con una mano y coloque el pulgar de la otra mano en el asa para el pulgar. empuje con el pulgar en dirección contraria a usted hasta que aparezca la boquilla y se trabe en posición con un chasquido.



C. Como preparar el inhalador (“diskus”) para su uso. Sostenga el inhalador en posición horizontal y nivelada, con la boquilla hacia usted. Mueva la palanca en dirección opuesta hasta escuchar un clic. No desperdicie las dosis inclinando, cerrando el inhalador o jugando con la palanca.



D. Primero exhale tan profundamente como pueda sin sentir incomodidad. (No exhale en la boquilla del inhalador)
E. Coloque la boquilla entre sus labios. Inhale de forma rápida y profunda a través de la boquilla del inhalador.
F. Retire el inhalador de su boca y contenga la respiración por 10 segundos o el tiempo que pueda



G. Al terminar cierre el inhalador. Coloque el pulgar en el asa para el pulgar y deslícela hacia atrás (hacia usted) hasta donde llegue. El inhalador hará un chasquido al cerrarse. La palanca volverá a su posición original.

Nota: Nunca exhale dentro del inhalador; tampoco lo desarme, ni lave la boquilla u otras partes del inhalador. El inhalador siempre debe de estar en posición horizontal al usarse. Nunca lave la boquilla u otras partes del inhalador. Siempre manténgalo seco. Nunca tome una dosis extra, incluso si no saboreo o sintió la medicina.