

WHAT YOU NEED TO KNOW ABOUT COPD



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Clinical Process Improvement Team



Prevent Acute Lung Attacks



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HOW THE LUNGS WORK

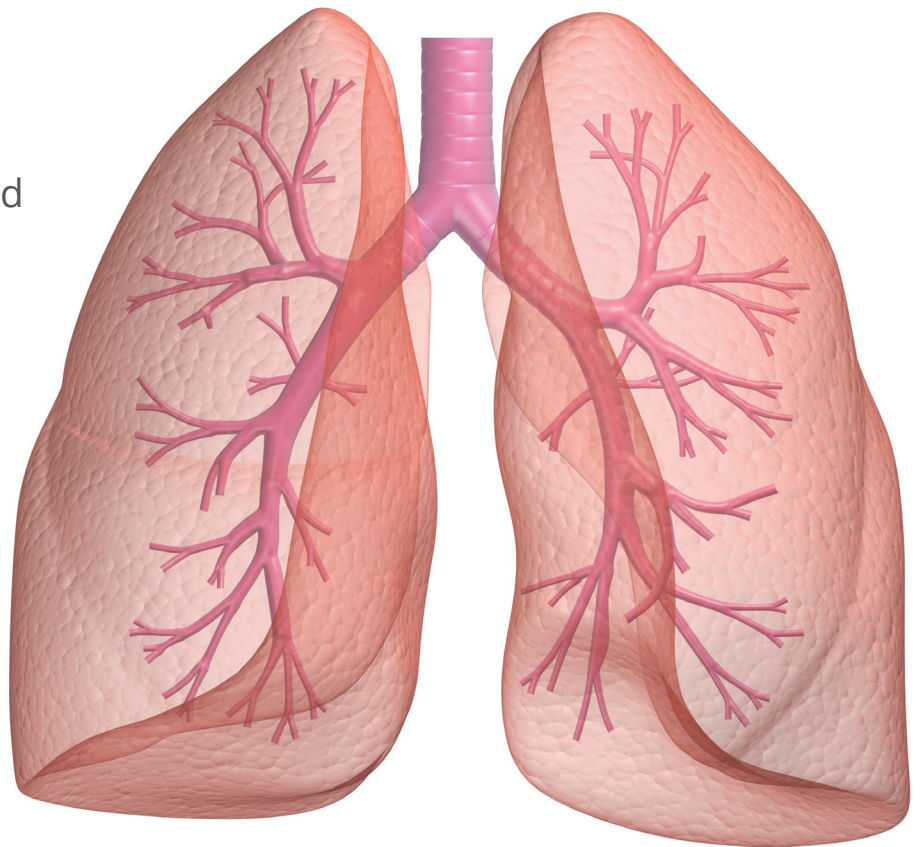
Your lungs are part of a group of organs and tissues called the respiratory system that all work together to help you breathe.

Every cell in your body needs oxygen, a gas, to live.

The air that comes into the body through the lungs contains oxygen.

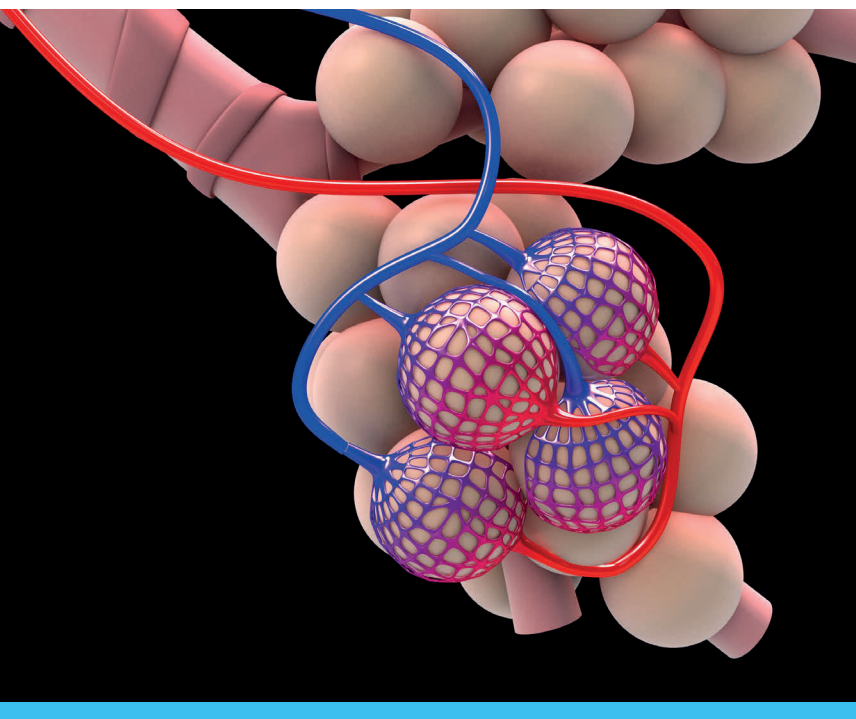
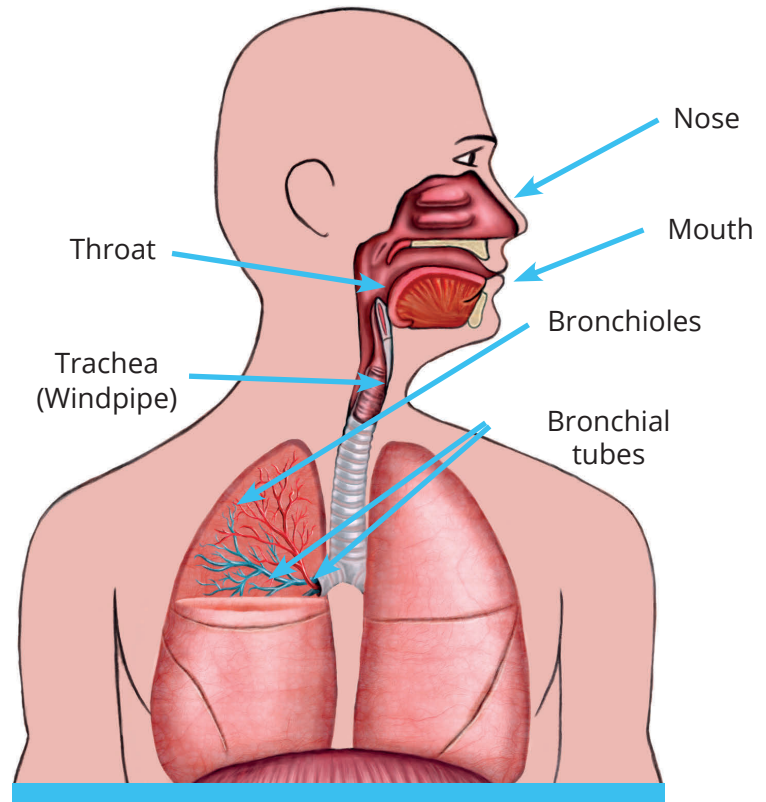
In the lungs, the oxygen is moved into the blood and carried through the body. At each cell in the body, the oxygen is replaced with carbon dioxide. The blood then carries carbon dioxide back to the lungs where it is removed from the body by breathing out.

This important process happens automatically by the lungs.



RESPIRATORY SYSTEM

Air enters through the nose or mouth and passes downward to the trachea (windpipe). The trachea is the passage leading from the throat to the lungs. The trachea divides into the two main bronchial tubes, one for each lung, which then subdivide into each lobe of the lungs. These divide further into the smallest parts of the bronchial tubes called bronchioles and end at the alveoli (air sac).



The alveoli are the very small air sacs that are the destination of air we breathe in. Oxygen is exchanged from the lungs to the blood and carbon dioxide is exchanged from the blood to the lungs.

WHAT IS COPD?

COPD (Chronic Obstructive Pulmonary Disease) is one of the most common lung diseases. The airways and lungs become damaged over time making it difficult to breathe.

COPD is a term that describes several diseases: chronic bronchitis, emphysema and sometimes asthma.

Chronic bronchitis involves the airways that carry air into the lungs. Less air flows in and out because the airway walls are inflamed and irritated. Sputum (mucus) increases and becomes thicker making the airways even narrower.

Emphysema involves the air sacs in the lungs. The walls of the air sacs are damaged which cause them to lose their elasticity. These damaged air sacs cannot fill up with or release air easily. The walls of the air sacs may even be completely destroyed leaving less lung tissue to exchange gases from air breathed in.

COPD develops slowly over time and gradually becomes worse. There is no cure for COPD because damage to the lungs cannot be reversed. However, you can slow or prevent some of the future damage by working with your healthcare provider to manage COPD.

NORMAL AND ABNORMAL AIRWAYS IN COPD

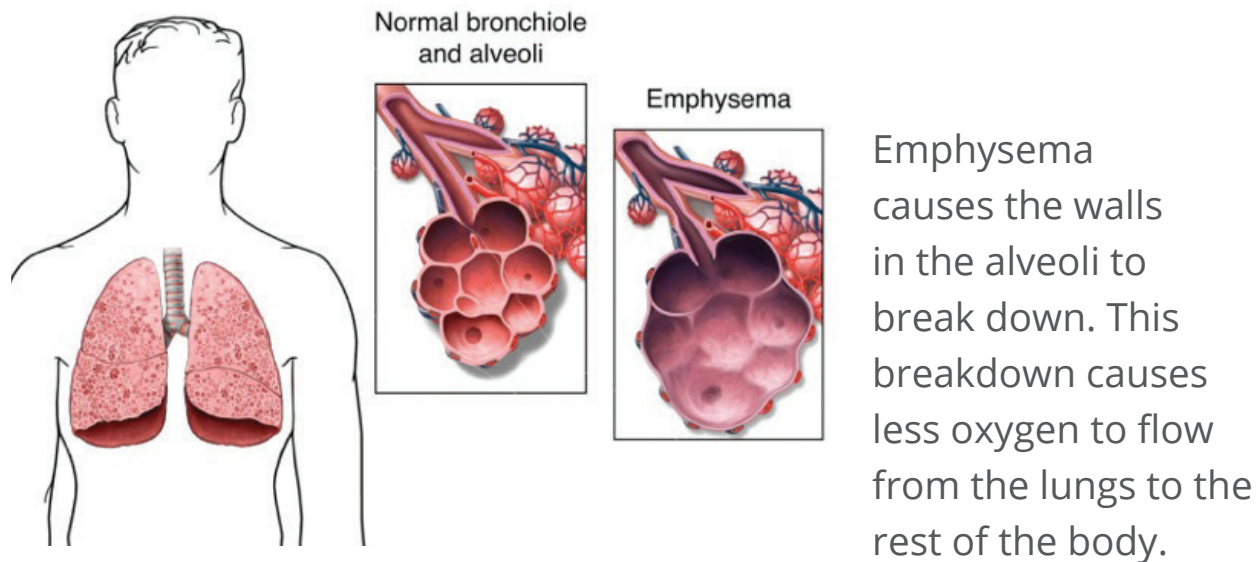
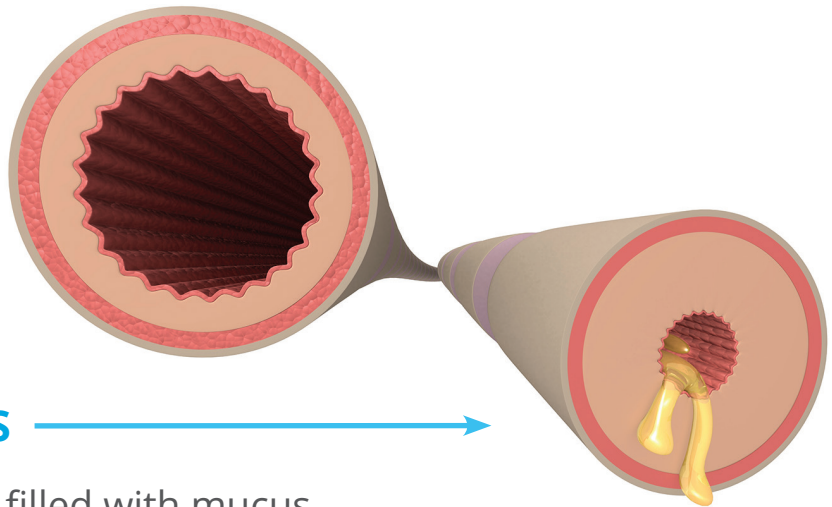


Image source: Sentara Healthcare Library Scientific and Medical ART Imagebase

NORMAL AIRWAY

Air flows freely in and out.



AIRWAY WITH BRONCHITIS

Airway is swollen, irritated and filled with mucus making it difficult for the air to flow freely in and out.



Lung Attacks can be life threatening and should be treated as an emergency!

CAUSES OF COPD



The leading cause of COPD is cigarette smoke. A person's risk of COPD increases the more and longer they smoke.

COPD is also caused by long-term exposure to irritants that damage the lungs and airways. Other irritants that cause COPD include other forms of tobacco smoke, secondhand smoke, chemical fumes, dust and air pollution.

In rare cases, COPD can be hereditary and usually diagnosed at a young age in patients who have no smoking history. The cause of this type of COPD is a low level of alpha-1-antitrypsin. If you are diagnosed with this type of COPD your healthcare provider will provide more information on symptoms and treatment.

SYMPTOMS OF COPD

- Frequent coughing
- Increase in mucus
- Shortness of breath
- Shortness of breath that increases with physical activity
- Chest tightness
- Wheezing
- Feeling tired
- Frequent respiratory infection

HOW COPD IS DIAGNOSED

The diagnosis of COPD is based on:

- Medical history
 - Physical exam
 - Medical tests
 - Medicines you currently take
 - Occupation
 - Lifestyle
-

Your healthcare provider will have you visit a lung specialist (pulmonologist) if you:

- Need special tests to help diagnose COPD or another illness
- Have problems controlling the symptoms of COPD
- Need more than one kind of medicine or higher doses to help control the symptoms of COPD
- Have had a life-threatening Lung Attack that required going to the hospital

The healthcare provider will ask you questions about:

- Difficulty breathing
- Coughing and mucus production
- Wheezing or tightness in the chest
- Clubbing of the fingers (tip of finger becomes enlarged)
- Tobacco use
- Exposure to pollution and other irritants
- Activity restrictions
- Sleeplessness
- Tiredness
- Poor appetite
- Difficulty eating
- Anxiety or depression



COMMON TESTS

	WHEN	WHAT
Spirometry	<ul style="list-style-type: none"> • Most common test <ul style="list-style-type: none"> - at time of diagnosis - with check-ups 	<ul style="list-style-type: none"> • A simple breathing test • Measures how much air you can breathe in and out • Measures how fast you can breathe out
Pulmonary Function Tests (PFTs)	<ul style="list-style-type: none"> • At time of diagnosis • Repeated as needed to monitor and adjust your treatment plan 	<ul style="list-style-type: none"> • Several breathing tests that measure how well the lungs move air in and out and how well air exchanges
Arterial Blood Gases (ABGs)	<ul style="list-style-type: none"> • As determined by your healthcare provider 	<ul style="list-style-type: none"> • A blood test to show how well your lungs are getting: <ul style="list-style-type: none"> - oxygen into your blood - carbon dioxide out of your blood
CBC-Complete Blood Count	<ul style="list-style-type: none"> • As determined by your healthcare provider 	<ul style="list-style-type: none"> • A blood test that will show if you have an infection and if the blood is carrying oxygen well to your body organs
Chest X-Ray	<ul style="list-style-type: none"> • As determined by your healthcare provider 	<ul style="list-style-type: none"> • A picture that shows any abnormalities due to emphysema or bronchitis.
Sputum Culture	<ul style="list-style-type: none"> • As determined by your healthcare provider 	<ul style="list-style-type: none"> • A sputum (phlegm) test that looks for infection

Smoke From
Outdoor Fires



Air Pollution And Smog



Chemical Gases



COMMON IRRITANTS

TIPS

- ✓ Quit smoking.
- ✓ Do not allow smoking in your home or car.
- ✓ Avoid being around irritants.
- ✓ Avoid exposure to people with colds, sore throat, flu or pneumonia.
- ✓ Get your flu and pneumococcal vaccine.
- ✓ Avoid cold weather exposure.
- ✓ Cover your nose and mouth with a scarf when outside in cold weather.

Brush Fires,
Burning
Leaves



Second
Hand
Smoke



Weather
Extremes
And Humidity



Dust



Sprays



Strong Smells Or Odors



MANAGING YOUR COPD

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

This questionnaire will help you and your healthcare professional measure the impact 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 get the greatest benefit from treatment.

For each item below, place a mark (X) in the box that best describes you currently. Be sure to only select one response for each question.

Example: I am very happy 0 ☒ 1 2 3 4 5 I am very sad

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

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COPD ASSESSMENT TEST™ - CAT

When you visit your healthcare provider, you may be asked to complete the COPD Assessment Test (CAT®).

The CAT® test and CAT® score are tools to help you and your healthcare provider manage your COPD.

COPD FLARE-UP

A COPD flare-up is a sudden worsening of COPD symptoms:

- Cough
- Shortness of breath
- Wheezing
- Increase in mucus
- Change in the color or thickness of mucus

Causes of COPD flare-up:

- Infections like cold or flu
- Environmental pollutants
- Smoking and being around smokers
- Irritants
- Other medical conditions
- Unknown reasons

Dangerous COPD symptoms:

You are experiencing an acute Lung Attack (exacerbation) if you:

- have blue or gray lips or fingernails
- have difficulty breathing or talking
- have a fast heart beat
- have difficulty focusing
- are feeling anxious

Air flow is so limited that your body is not getting enough oxygen to survive.

CALL 9-1-1

MY COPD ACTION PLAN

To help you manage your COPD you will work with your healthcare provider to complete your COPD Action Plan.

The plan will tell you how to treat your asthma each day. The COPD Action Plan is divided into three zones - green, yellow and red.

My Asthma Action Plan

Green Zone - means feeling GOOD
Peak Flow is above _____
No signs of asthma and breathing is easy
GO
I can:
✓ do my normal daily activities at work or play
✓ sleep through the night
I do not wheeze or cough, have chest tightness or shortness of breath during the day or night
Take your CONTROL medicines each day
Name _____ How much _____ Times/Day _____ w/Spacer ☐
_____ puff(s) MDI _____/day ☐
_____ nebulizer treatment(s) _____/day
by mouth at _____
☐ No control medicine needed
BEFORE exercise or sports take: _____ puff(s) MDI w/Spacer _____/day
ALWAYS USE YOUR SPACER

Yellow Zone - means CAUTION
Peak Flow is between _____
Not feeling good - Use rescue medicine
!
I have:
✓ a cough, wheezing, chest tightness, trouble breathing
✓ not sleep well and wake up at night
✓ trouble doing my usual activity
✓ to use more relief medicine
Take your RESCUE medicine(s)
Name _____ How much _____ puff(s)/puff(s) or nebulizer
If no relief after 20 minutes, repeat.
If no relief after another 20 minutes then _____
Continue to take your Control Medicines
Take your quick relief/ rescue medicine every _____ Hours for _____ Days
If you return to your GREEN Zone within an hour continue to monitor your symptoms and peak flows.
If you do not return to the GREEN Zone after 1 hour, Take _____ every _____
Add _____ (steroid) and call your health care provider.
If no steroid ordered, call your healthcare provider.
CALL your healthcare provider if ANY of the following:
✓ An increase in use of your rescue medicine(s)
✓ Need quick relief/rescue medicine(s) for > 24 hours OR > 2 times in 1 week
✓ Rescue medicine is not relieving symptoms for four hours.

Red Zone - means feeling BAD
Peak Flow is below _____
My rescue medicine is not helping
STOP
I am:
✓ very short of breath
✓ breathing hard
✓ having trouble walking
✓ having a constant cough
✓ experiencing symptoms after 24 hours
TAKE your RESCUE medicine(s) and CALL your healthcare provider
Name _____ How much _____ puff(s) every _____
Nebulizer: _____ How much _____ every _____
Steroid: _____
Call 911 and go to the Emergency Room
✓ still in RED Zone after 15 minutes
✓ struggling to breathe
✓ ribs show when breathing
✓ lips or fingernails are blue
✓ feeling very scared
✓ worse or not doing better
* Call healthcare provider if worsen while on oral steroid not lasting 4 hours.

SCHOOL MEDICATION CONSENT & HEALTH CARE PROVIDER ORDER
CHECK ALL THAT APPLY:
Student consented in grade use of their asthma medications, and in my opinion, CAN CHARGE AND SELF-ADMINISTER INHALER AT SCHOOL.
☐ Student is to notify designated school health official after using inhaler at school.
☐ Student needs supervision or assistance to use inhaler.
DATE _____
MONITORING SIGNATURES: I give permission for school personnel to follow this plan, administer medication and care for my child and contact my provider if necessary. I assume full responsibility for providing the school with prescribed medication and delivery/maintenance devices. I approve this Asthma Management Plan for my child. _____ Date _____
PARENT/GUARDIAN _____ Date _____
SCHOOL NURSE/DESIGNATE _____ Date _____
OTHER _____



GREEN ZONE: I am doing well today.

- Symptoms are under control
- Can do normal activities
- Control medicine is helping



YELLOW ZONE: I am having a bad day.

- Symptoms have changed or getting worse
- Increase in shortness of breath
- Control medicine is not helping



RED ZONE: I need urgent medical care.

- Having a Lung Attack
- Rescue medicine is not helping

CALL 9-1-1

MANAGING MY COPD IN THE GREEN ZONE



I am in the green zone when I:

- Breathe as I usually do
- Do my normal activities at work or play
- Can talk as I usually do
- Cough as I usually do
- Cough up clear white mucus

I will follow these steps of My COPD Action Plan:

- Stop smoking
- Walk or do some activity every day
- Know my medicines, symptoms, and triggers
- Know what to do for a COPD flare up, attack or emergency
- Always take my control medicines as prescribed
- Always keep a rescue inhaler on hand
- Keep all medical appointments even when feeling well



MANAGING MY COPD IN THE YELLOW ZONE



Even though I am following my COPD action plan, I may have days when my COPD symptoms are worse.

I know that my COPD symptoms are worsening when I am:

- More breathless than usual
- More tired than usual
- Having trouble doing usual daily activities
- Coughing more
- Coughing up yellow, green or brown mucus
- Feeling tightness in my chest
- Having trouble sleeping
- Adding more pillows to be able to sleep

I will follow these steps of my COPD Action Plan:

- Take my quick relief medicine(s) as directed
- Continue to take my daily control medicines as directed

I will call my healthcare provider if:

- My rescue medicine is not helping
- I take my rescue medicine for more than 24 hours
- I take my rescue medicine more than twice in one week
- I do not have a prescription for a steroid
- I have a fever greater than 100.4 or chills
- I have nausea and vomiting

MANAGING MY COPD IN THE RED ZONE



**I know that I am experiencing the COPD Danger
Signs of a Lung Attack (or exacerbation) when I have:**

- Severe shortness of breath
- Trouble walking or talking because I am out of breath
- Constant coughing
- Feelings of being scared, confused or very sleepy
- Symptoms that are the same or worse after 24 hours in the yellow zone
- Blue or gray lips or fingernails

Call 9-1-1

**Do not drive to the
emergency room**



If you have been treated at the emergency room, urgent care or hospital, follow up with your healthcare provider.



COPD MEDICINES

Medicines your healthcare provider may prescribe for short and long term relief of COPD symptoms are:

Types of Medicine	Medicine Classes		What They Do For You
Rescue (Short-acting)	<u>Bronchodilators</u> Albuterol <ul style="list-style-type: none"> • Proventil HFA® • Ventolin HFA® • ProAir HFA® Levalbuterol <ul style="list-style-type: none"> • Xopenex HFA® 	<u>Anticholinergics</u> Ipratropium <ul style="list-style-type: none"> • Atrovent® <u>Combination</u> <ul style="list-style-type: none"> • Albuterol + Ipratropium (Combivent) 	<ul style="list-style-type: none"> • Open your airways letting more air come in and out of your lungs • Relax the tight muscles in and around the airways
Controller (Long-acting)	<u>Bronchodilators</u> Formoterol <ul style="list-style-type: none"> • Perforomist® Arformoterol <ul style="list-style-type: none"> • Brovana® Salmeterol <ul style="list-style-type: none"> • Serevent® Indacaterol <ul style="list-style-type: none"> • Arcapta® Olodaterol <ul style="list-style-type: none"> • Striverdi® 	<u>Anticholinergics</u> Tiotropium <ul style="list-style-type: none"> • Spiriva® Aclidinium <ul style="list-style-type: none"> • Tudorza® Umeclidinium <ul style="list-style-type: none"> • Incruse® Glycopyrrolate <ul style="list-style-type: none"> • Seebri® 	<ul style="list-style-type: none"> • Open your airways letting more air come in and out of your lungs • Relax the tight muscles in and around the airways • May be combined with a corticosteroid

Types of Medicine	Medicine Classes	What They Do For You
Anti-inflammatory	<u>Oral Corticosteroids</u> Prednisone Methylprednisolone • Solumedrol®	<ul style="list-style-type: none"> • Reduce swelling and inflammation in your airways • Help make airways less sensitive to triggers • May be given for moderate or severe exacerbations • May be used with bronchodilators to speed recovery
	<u>Inhaled Corticosteroids (ICS)</u> <div> Fluticasone • Flovent® </div> <div> Budesonide • Pulmicort® </div> <div> Beclomethasone • Qvar® </div> <div> Ciclesonide • Alvesco® </div> <div> Fluticasone • Arnuity® </div> <div> Mometasone • Asmanex® </div>	<ul style="list-style-type: none"> • Reduce swelling and inflammation in your airways • Help make airways less sensitive to triggers
Combination	<div> <u>Combination-Long-acting bronchodilator + ICS</u> Salmeterol/fluticasone • Advair® </div> <div> Formoterol/budesonide • Symbicort® </div> <div> Vilanterol/fluticasone • Breo® </div> <div> Formoterol/mometasone • Dulera® </div> <div> Fluticasone/umeclidinium/vilanterol • Trelegy® </div> <div> <u>Combination-Long-acting bronchodilator + anticholinergic</u> Umeclidinium/vilanterol • Anoro® </div> <div> Glycopyrrolate/formoterol • Bevespi® </div> <div> Tiotropium/olodaterol • Stiolto® </div> <div> Glycopyrrolate/indacaterol • Utibron® </div>	<ul style="list-style-type: none"> • Open your airways letting more air come in and out of your lungs • Relax the tight muscles in and around the airways • ICS Reduce swelling and inflammation in your airways • Help make airways less sensitive to triggers
Other	<u>Phosphodiesterase-4 inhibitor (PDE-4 inhibitor)</u> Roflumilast • Daliresp®	<ul style="list-style-type: none"> • Reduces number of COPD flare-ups over time
	<u>Methylxanthines (bronchodilator)</u> Theophylline	<ul style="list-style-type: none"> • Open your airways letting more air come in and out of your lungs • Relax the tight muscles in and around the airways • May need blood levels checked

INFORMATION ABOUT MEDICINE DELIVERY DEVICES

USING MORE THAN ONE MEDICINE

Always follow your healthcare provider's direction on how long to wait between using two different inhalers and which inhaler to take first.



METERED DOSE INHALER (MDI)

An MDI consists of a pressurized canister of medicine and a mouthpiece. Pressing down on the MDI will release a mist of medicine that you breathe into the lungs.

How to use your MDI
(page 50)

How to prime your MDI
(page 57)



NEBULIZER

Used with a compressor, a nebulizer changes liquid medicine into fine droplets (in aerosol or mist form) that are inhaled thru a mouthpiece or mask.

DRY POWDER INHALER (DPI)

A DPI is similar to the MDI, but the medicine is in powdered form rather than liquid form. You will inhale a puff of powder instead of a mist of liquid.

See pages below for how to use your device:

Diskus	Ellipta	HandiHaler	Neohaler
			
page 51	page 51	page 52	page 52

Flexhaler	Twisthaler	ProAir Respiclick
		
page 53	page 53	page 53

SPACERS



A spacer is a chamber that attaches to your metered dose inhaler. It holds the medicine so you can breathe it in easier. Do not use with other inhalers.

How to use your spacer:

1. Warm your inhaler by holding in your hand for 20 seconds.
2. Shake your inhaler four to five times.
3. Remove the mouthpiece from your inhaler.
4. Attach the spacer to the mouthpiece.
5. Close your lips firmly around spacer mouthpiece and breathe out through your nose slowly.
6. Press the inhaler to allow one puff of medicine to flow into the spacer.
7. Breathe in through your mouth slowly and deeply. If the spacer whistles, you have taken your breath in too fast.
8. Hold your breath for 5-10 seconds.
9. Breathe out normally.
10. Repeat the steps 5 through 9 again for each puff of medicine you need.
11. Store your clean, dry spacer in a re-sealable bag.

How to clean your spacer:

- Wash with mild soap and then rinse
- Drain and air dry

When to clean your spacer:

- Before first use
- At least weekly
- If you have not used your spacer in a while



ALWAYS USE YOUR SPACER!

YOUR MEDICINES

BRING YOUR CURRENT MEDICINE AND SUPPLEMENT LIST EACH TIME YOU GO TO YOUR HEALTHCARE PROVIDER.

Be sure you have included any over-the-counter medicines, herbal or dietary supplements you are taking.

When your healthcare provider changes your medicines, ask for information on side effects and an updated medicine list.

AVOID FOODS THAT MAY INTERACT WITH ANY OF YOUR MEDICINES.



Quitting smoking and taking your COPD medicine are the most important steps you can take to prevent flare-ups and Lung Attacks.

HOW TO TAKE YOUR MEDICINES

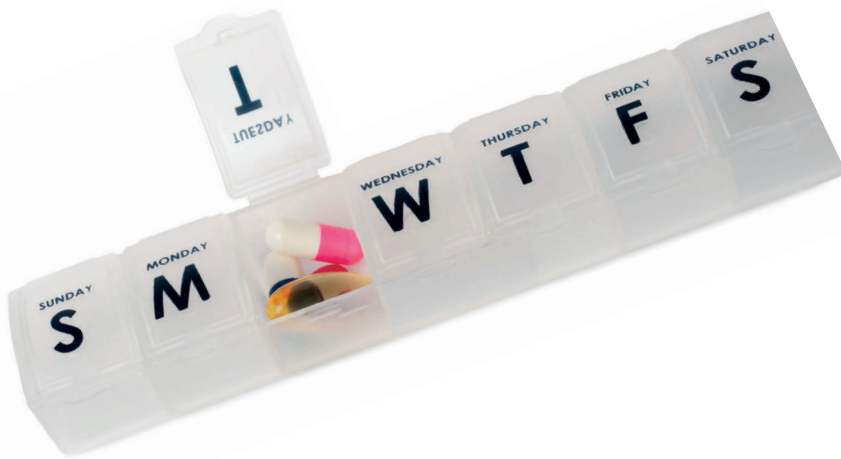
- ✓ Taking your medicine as prescribed is important in controlling your COPD. Your medicine will help you breathe easier and feel better.
- ✓ Use your rescue inhaler as your healthcare provider discussed with you.
- ✓ If you are using your rescue inhaler more than two times in one week, talk with your healthcare provider.
- ✓ Take each of your medicines every day at the right times.
- ✓ Do not skip doses of your medicines, even when you feel good.
- ✓ If you think you are having side effects from your medicines, call and talk with your healthcare provider or pharmacist immediately.
- ✓ Whenever possible, have all of your medicines filled at the same pharmacy. It is helpful to have one pharmacist review all of your medicines to avoid drug interactions that could be harmful to you.
- ✓ Make sure you always have enough medicine.
- ✓ If you are having trouble paying for your medicine, talk with your healthcare provider.

**DO NOT LET YOUR
MEDICINE RUN OUT.**



IF YOU ARE GOING TO BE AWAY...

Plan ahead to be sure you will have enough to last the trip and return home.



Some people like to use a pill box to put their medicines in for each day of the week. If you fill the box on Sunday then you will know each day if you have taken all of your medicine.

- When you travel, bring your medicine in the original containers to identify what medicine you are taking.
- When traveling by air, do not pack all of your medicines in your checked bags.

If you are going to be away from home when your medicine is due, take your medicine with you.



MEDICINE INTERACTIONS

Ask your healthcare provider and pharmacist about any food or drink that may interfere with your medicine.

Some medicines work together to provide a higher level of relief so it is important to take all of your medicine as prescribed.

Certain medicines may prevent your COPD medicines working effectively or worsen your COPD symptoms.

Speak with your healthcare provider or pharmacist to be sure you understand how your medicine may interact.



If you think you are having side effects from your medicines, call your healthcare provider or pharmacist immediately.

OTHER MEDICINE

Types of Medicine	What They Do For You
Oxygen	<ul style="list-style-type: none">• Helps you breathe easier• Increases the amount of oxygen in your blood
Antibiotic	<ul style="list-style-type: none">• Treats an infection <i>Take all of the medicine and do not skip any doses</i>
Expectorant	<ul style="list-style-type: none">• Helps to loosen and cough out the mucus



BETA BLOCKERS AND COPD

Beta blockers like propranolol (Inderal), metoprolol (Lopressor, Toprol XL), labetalol (Normodyne) and carvedilol (Coreg) have been shown to help people live longer who have conditions like heart failure, heart disease or high blood pressure.

One of the side effects of beta blockers is a narrowing of the blood vessels that carry oxygen to your lungs. Beta blockers may cause your COPD symptoms to become worse.

Your provider will determine if it is appropriate for you to be on a beta blocker. Do not stop taking your medicine without talking to your provider first.

**TALK TO YOUR HEALTHCARE PROVIDER
IF YOU ARE TAKING A BETA BLOCKER.**

VACCINATIONS AND COPD

Getting vaccinations is an important step you can take to prevent the spread of the flu and pneumonia.

Flu and pneumonia can be more serious when you have COPD and can make your COPD symptoms worse.

FLU VACCINE

- It is recommended to get the flu shot and not the flu nasal spray
- It is recommended that you get a flu vaccine every year.
- Flu vaccines are offered in many locations including healthcare providers' offices, clinics, health departments and your workplace.



PNEUMOCOCCAL VACCINE

- Vaccination can help protect you from pneumococcal disease. Pneumococcal disease can lead to serious infections of the lungs (pneumonia), blood (bacteremia), and brain (meningitis).
- There are 2 types of pneumococcal vaccine: PCV13 and PPSV23. You may need to receive one or both of these vaccines depending on your age and health conditions.
- If you are 65 years of age or older it is recommended you receive at least 1 dose of PCV13 and at least 1 dose of PPSV23.
- If you are 19 to 64 years old and have an underlying medical condition such as COPD, it is recommended that you receive at least 1 dose of PPSV23. If you have other medical conditions you may also need the PCV13 vaccine.

Ask your healthcare provider when you should receive these vaccines.



OXYGEN THERAPY



Oxygen is a drug prescribed by your healthcare provider.

Follow your healthcare provider order just like any other medicine.

Do not increase or decrease the flow without consulting with your healthcare provider.

The amount of oxygen you are prescribed depends on:

- blood tests
- pulmonary testing
- overall physical condition
- need for additional oxygen

Oxygen:

- helps you live longer
- improves your overall feeling of well being
- lessens shortness of breath
- improves your level of activity with use
- may be needed 24 hours/day or may only be needed for increased activity or during sleep

Oxygen is usually administered by:

- oxygen concentrator
- liquid oxygen
- cylinder
- nasal cannula
- sparing/conserving devices

Side effects:

The most common side effect of oxygen therapy is dry nasal passages and sometimes nosebleeds. If your nose becomes dry, use a water soluble lubricant such as Ayr, K-Y jelly or a saline nose spray.

Oxygen Don'ts:

- Do NOT use petroleum based lubricants (commonly known as Vaseline/lip balm) while you are using oxygen.
- Do NOT smoke or allow anyone to smoke in your house while you are on oxygen.
- Do NOT store your oxygen tank on or near any heat source, such as a space heater or stove.



Pure oxygen is highly combustible.

Smoking while on oxygen could lead to severe burns.

POWER OUTAGES - BE PREPARED

Oxygen concentrators are powered by electricity.

Contact your home health provider to be sure you have an H cylinder(s) adequate to provide oxygen in event of power outage.



OXYGEN EQUIPMENT SAFETY

CONCENTRATOR MAINTENANCE

- Remove the gray filter (this may be located on the front, back or side) from the concentrator.
- Wash the filter (in warm soapy water).
- Rinse the filter in running water.
- Dry the filter with a hand or paper towels as well as you can.
- Return the filter to the proper location.

Cleaning the filter is the **ONLY** maintenance required on your concentrator. Your oxygen provider will perform any additional maintenance.

NASAL CANNULA

- Your nasal cannula should be washed in warm soapy water on a daily basis. Use the same soap that you use to wash your dishes.
- Rinse the cannula well with tap water.
- Throw away your cannula and use a new cannula at least once per month.

EXTENSION TUBING

- The extension tubing used to connect your cannula to your oxygen source should be changed at least every three months.
- Your extension tubing should not exceed 50 feet in length per the manufacturer's recommendations.
- The small connectors that connect all of the tubing together should be replaced if they become cracked or appear to be damaged.

SAFETY RULES FOR OXYGEN

DO...

- ✓ Turn the oxygen equipment off when not in use.
- ✓ Keep your oxygen equipment in a well-ventilated area.
- ✓ Use a tank stand or cart to keep all oxygen tanks safe.
- ✓ Keep tanks in an upright/standing position when in use.
- ✓ Keep all oxygen equipment out of the reach of children
- ✓ Keep at least one fire extinguisher in the house, because of the fire hazard risk with oxygen.

DO NOT...

- ✓ Change the oxygen flow rate (amount of oxygen you get) without your healthcare provider's permission.
- ✓ Permit open flames or smoking in the room where oxygen is kept or used.
- ✓ Use or keep oxygen equipment within 8 feet of electrical appliances such as stoves, heaters, toasters and hairdryers.
- ✓ Keep/store oxygen tanks or concentrators in a confined area such as a closet or cabinet.
- ✓ Store oxygen tanks or concentrators near radiators, heat ducts, stoves, steam pipes or any other heat source.
- ✓ Use or store oxygen equipment near flammable materials such as oils, grease, aerosol sprays, lotions or solvents.
- ✓ Allow oxygen tubing to be covered by blankets or to be placed under carpeting or furniture.
- ✓ Allow untrained persons to use or adjust oxygen equipment.
- ✓ Transport oxygen tanks in an enclosed area such as the trunk of a car.
- ✓ Drag or drop oxygen tanks. When oxygen tanks are empty, they may be laid down on their side if not in a stand or cart.

BREATHING AND COPD

HOW TO BREATHE BETTER AND SAVE ENERGY

Breathing exercises can help you strengthen the breathing muscles, get more oxygen into your lungs, and breathe with less effort.

Here are two breathing exercises that you can do for five to ten minutes each, three to four times per day.

Pursed Lip Breathing:

step 1

Relax your shoulders and neck muscles.

step 2

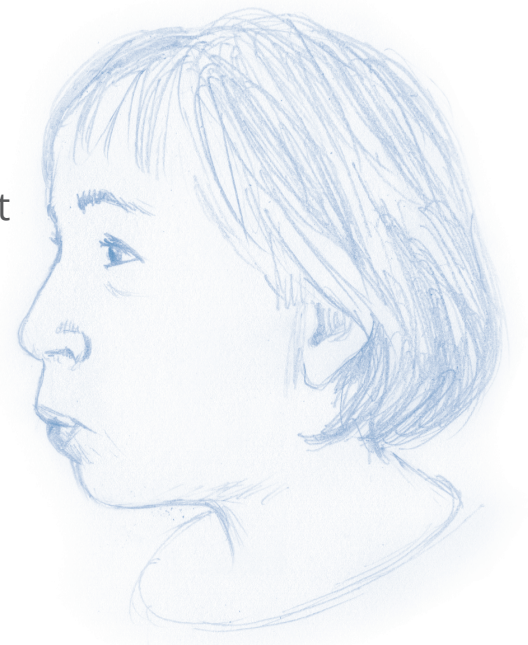
Breathe in for two seconds through your nose, keeping your mouth closed.

2 seconds

step 3

Breathe out for four seconds through pursed lips. If this is too long for you, you simply breathe out twice as long as you breathe in.

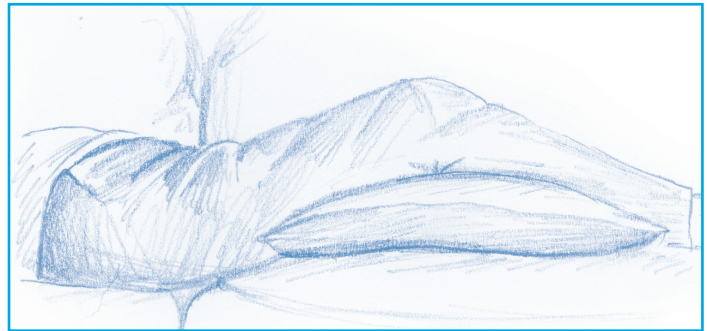
4 seconds



BELLY (DIAPHRAGMATIC) BREATHING

step 1

Lie on your back with knees bent. You can put a pillow under your knees for support.



step 2

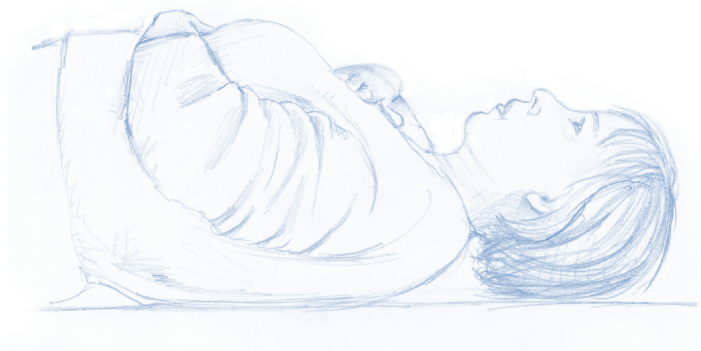
Place one hand on your belly below your rib cage. Place the other hand on your chest.



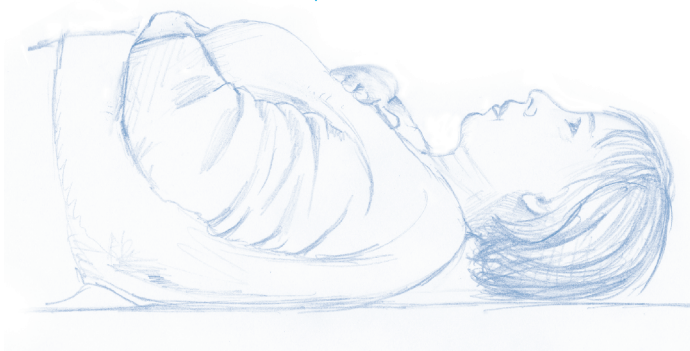
Stomach
moves out

step 3

Breathe in deeply through your nose for a count of three. Your belly and lower ribs should rise, but your chest should remain still.



Chest does
not rise or fall



step 4

Tighten your stomach muscles and exhale for a count of 6 through slightly puckered lips. Your belly and lower ribs should fall, but your chest should remain still.



steps 1 & 2

steps 3 - 6

step 7

CONTROLLED COUGHING

Coughing will help you clear the mucus from your lungs.

Follow the steps below.

1. Sit comfortably in a chair.
2. Place both feet on the floor.
3. Lean your head forward slightly.
4. Fold your arms across your stomach and breathe in.
5. Breathe in slowly and deeply through your nose.
6. Try to hold your breath for three seconds.
7. Keep your mouth slightly open and cough two times.
8. Take another deep breath and repeat coughing two to four more times.
9. Repeat several times every day.

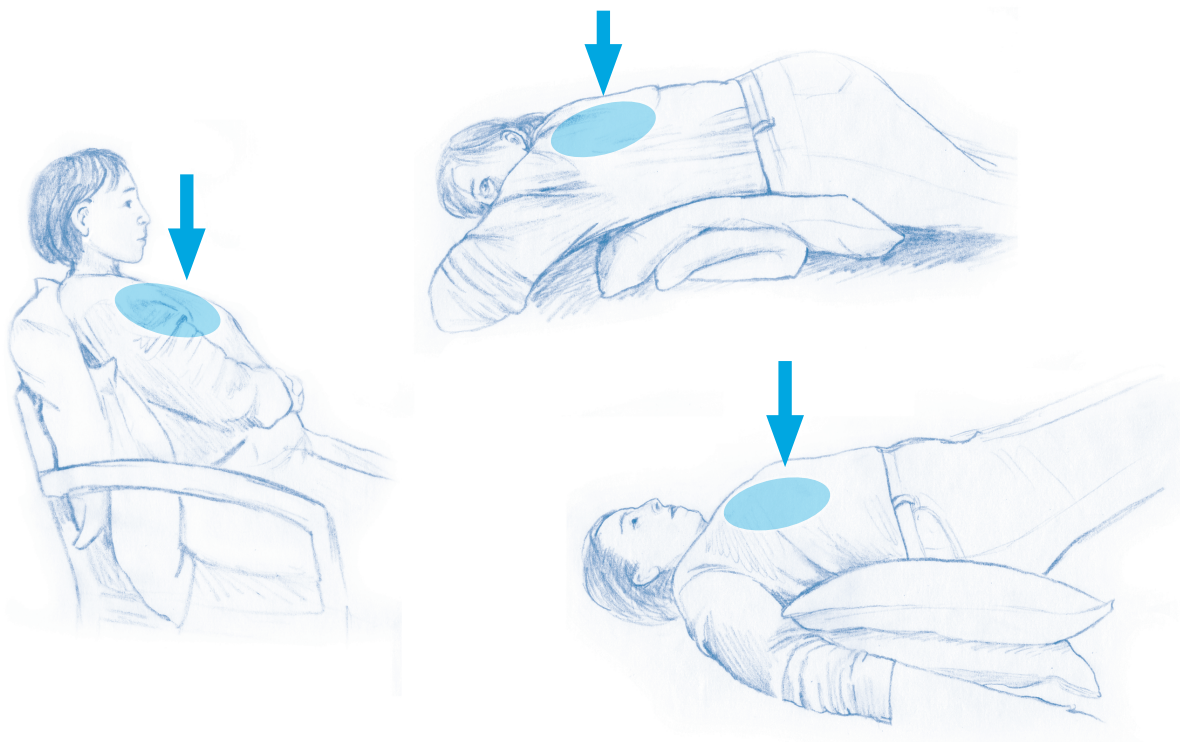
THE HUFF-COUGH TECHNIQUE

1. Sit comfortably in a chair.
2. Place one hand on your belly below your rib cage. Place the other hand on your chest.
3. Inhale deeply through your nose for a count of three. Your belly and lower ribs should rise, but your chest should remain still.
4. Place your hand over your stomach and breathe normally.
5. Tighten up your stomach and chest muscles with your mouth open.
6. Force air out while whispering the word "huff."

TECHNIQUES FOR MANAGING AIRWAY CLEARANCE

POSTURAL DRAINAGE

Placing yourself in different positions makes it easier for mucus to drain. One of the best times of the day to do postural drainage is in the morning to clear mucus that has accumulated overnight.



VEST/ CHEST PHYSIOTHERAPY

The VEST uses a rapid movement to the chest that mimics small, mini-coughs. This movement helps to loosen the mucus and makes coughing it out easier.



POSITIVE EXPIRATORY PRESSURE (PEP) THERAPY

These devices are small, portable breathing devices that aid in removing mucus. Blowing out into these devices prolong expiration and creates pressure in the lung that helps move the mucus up the airway, making it easier to cough mucus out.

LIVING BETTER WITH COPD

Many people manage their disease well, living full and active lives. Follow your COPD Action Plan and maintain a healthy lifestyle. With COPD you need to be especially aware of the ways in which your lifestyle affects your health.

The key is to plan ahead. Take time to prepare for what you may need. Daily activities such as walking, getting washed, dressed, and eating may take more effort.

Although there is no cure for COPD, there are many things you can do to relieve symptoms and keep the disease from getting worse. Below are things you can do to make your life easier, prevent flare-ups and improve your quality of life.

You may feel better and get more done if you:

- Pace yourself and do not rush.
- Do things slowly.
- Find easy ways to dress, cook, and do chores.
- Keep things in easy reach.
- Rest after meals.

GET ENOUGH SLEEP

COPD sometimes disrupts sleep for a variety of reasons, including sleep apnea, low levels of oxygen at night, medicines and coughing. Most bronchodilators are stimulants. Taking these medicines near bedtime can make it difficult to fall asleep. If you have trouble sleeping:

- Stay on a schedule – same bedtime and wake-up times.
- Do not stay in bed awake.
- Get out of bed and make yourself a cup of warm milk or herb tea.
- Do something relaxing like reading.
- Do not take naps.
- Try to get at least 30 minutes of exercise each day.
- Start relaxing two hours before you plan to go to bed.
- Do not drink anything with caffeine four hours before bedtime.

Ask for help from your family and friends.

SMOKING AND YOUR LUNGS

Smoking is a major risk factor for lung and heart disease.

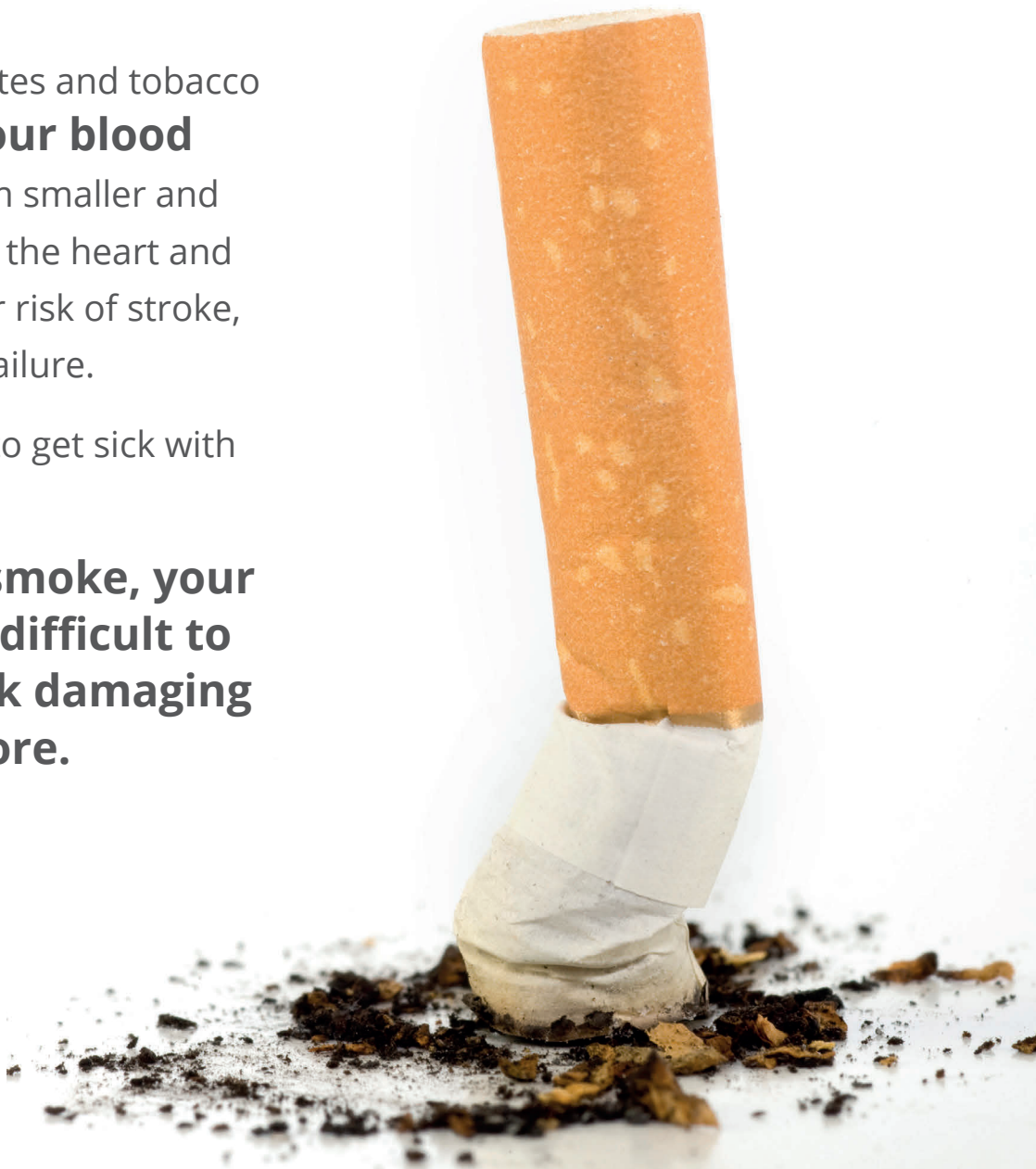
Cigarette smoke contains poisons and chemicals that damage your heart, lungs and other body organs.

The inhaled smoke **increases mucus** and damages the airway making it harder to cough out the mucus.

Nicotine, found in cigarettes and tobacco products, **damages your blood vessels** by making them smaller and slowing the blood flow to the heart and lungs. This increases your risk of stroke, heart attack and kidney failure.

Smokers are more likely to get sick with respiratory illness.

If you continue to smoke, your COPD will be more difficult to control and you risk damaging your lungs even more.



SMOKING AND YOUR LUNGS

By quitting now, you will:

- Reduce your risk of Lung Attacks
- Breathe easier
- Have more energy
- Improve the blood flow to your heart, lungs, brain and the other organs
- Lower your chance of having a stroke, heart disease, lung cancer, emphysema and chronic bronchitis
- Protect your family and friends from the effects of second hand smoke

DO NOT SMOKE OR USE TOBACCO!

It is NEVER too late to quit
even if you have smoked for many years.

Talk with your healthcare provider about quitting.

For more information and resources on smoking cessation call:

1-800-SENTARA (1-800-736-8272)

or

1-800-QUIT NOW (1-800-784-8669)

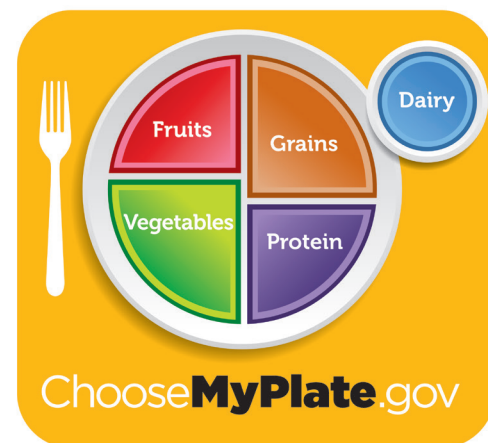
HEALTHY EATING

Weight loss with COPD may be caused by:

- The body's need for increased energy for the work of breathing
- Shortness of breath making it harder for you to prepare and eat foods
- Feeling upset or depressed causing a lack of interest in eating
- Medicine side effects can cause loss of appetite

Eating a healthy diet with fish, poultry, or lean meat, fruits and vegetables, whole grains, and low fat milk products may help you:

- Have the energy you need to do the work of breathing and staying active
- Improve how well your lungs work
- Help fight infections
- Keep a healthy weight to support your lungs as they work
- Feel better overall with a better quality of life



Ask your healthcare provider about:

- Losing or gaining weight
- Taking a multi-vitamin, calcium supplement
- Weighing yourself regularly
- Working with a registered dietitian to plan meals, reading food labels and eating away from home

TIPS FOR HEALTHY EATING

To help prevent shortness of breath when you eat or right after you eat:

- Ask a family member or friend to help with cooking if you are too short of breath.
- Rest just before eating.
- Eat more food early in the morning if you're too tired to eat later in the day.
- Eat six small meals instead of three big meals (small meals plus nutritious snacks) so you don't overfill your stomach and make breathing harder.
- Eat sitting up.
- Eat slowly and chew foods well.
- Drink liquids at the end of the meal.
- Stop eating once you start to feel full.
- Avoid eating too close to bedtime (lying down after eating puts pressure on your lungs and may make it harder to breathe).
- Limit salt intake (too much may cause you to retain fluids which may interfere with breathing).
- Limit caffeine which could interfere with medicines and make you jittery.
- Avoid soda, sugary and alcoholic drinks.
- Eat more protein and less simple sugars.
- Avoid foods that may produce gas (broccoli, beans, carbonated beverages).
- Use pursed-lipped breathing while eating.
- Eat foods that are easily prepared:
 - Cheese, milk, yogurt, ice cream, eggs
 - Sandwiches
 - Cereal/crackers
 - Tuna
 - Fresh or canned fruit
 - Liquid supplements (especially if you are short of breath in the morning)

If it is hard to keep your weight up, talk to a healthcare provider or dietitian about eating foods with more calories.

EXERCISE

Stay active for your physical and mental health.

Talk to your healthcare provider about what type and how much exercise you should do. Remember to warm-up and cool down before and after exercising.

Daily physical activity can:

- Help you feel less short of breath
- Give you more strength and endurance while you do your daily activities
- Improve your heart health
- Keep you in a better mood



TRY WALKING

- Do not get discouraged.
- Begin slowly.
- Walking will get easier.
- Start with five minutes of walking a day.
- After a couple of weeks, add five minutes. Continue to add five minutes until you can walk most days of the week.
- Set a goal to be able to walk for 20-30 minutes a day.
- Try not to talk when you walk if you get short of breath.
- Use facilities like the mall or your favorite store when the weather is hot, cold or stormy.

Follow the same guidelines above if you choose to start these activities.

- Riding a stationary bike
- Stretching or yoga
- Slow dancing



REDUCE AND CONTROL STRESS

Some people lose contact with their friends and family and participate less in social activities. These changes can be frustrating or make life seem worthless or boring. Many people with COPD have depression, which is often not recognized.

There are many possibilities for adapting to the disease and to the changes in daily activities it brings. They range from breathing and relaxation techniques to changing attitudes towards life.

Some people find it easier to cope with the disease when they adapt their lives to their physical needs. They replace physically demanding activities with less straining ones or they change priorities to have more energy to do things they enjoy.

ENJOY YOURSELF

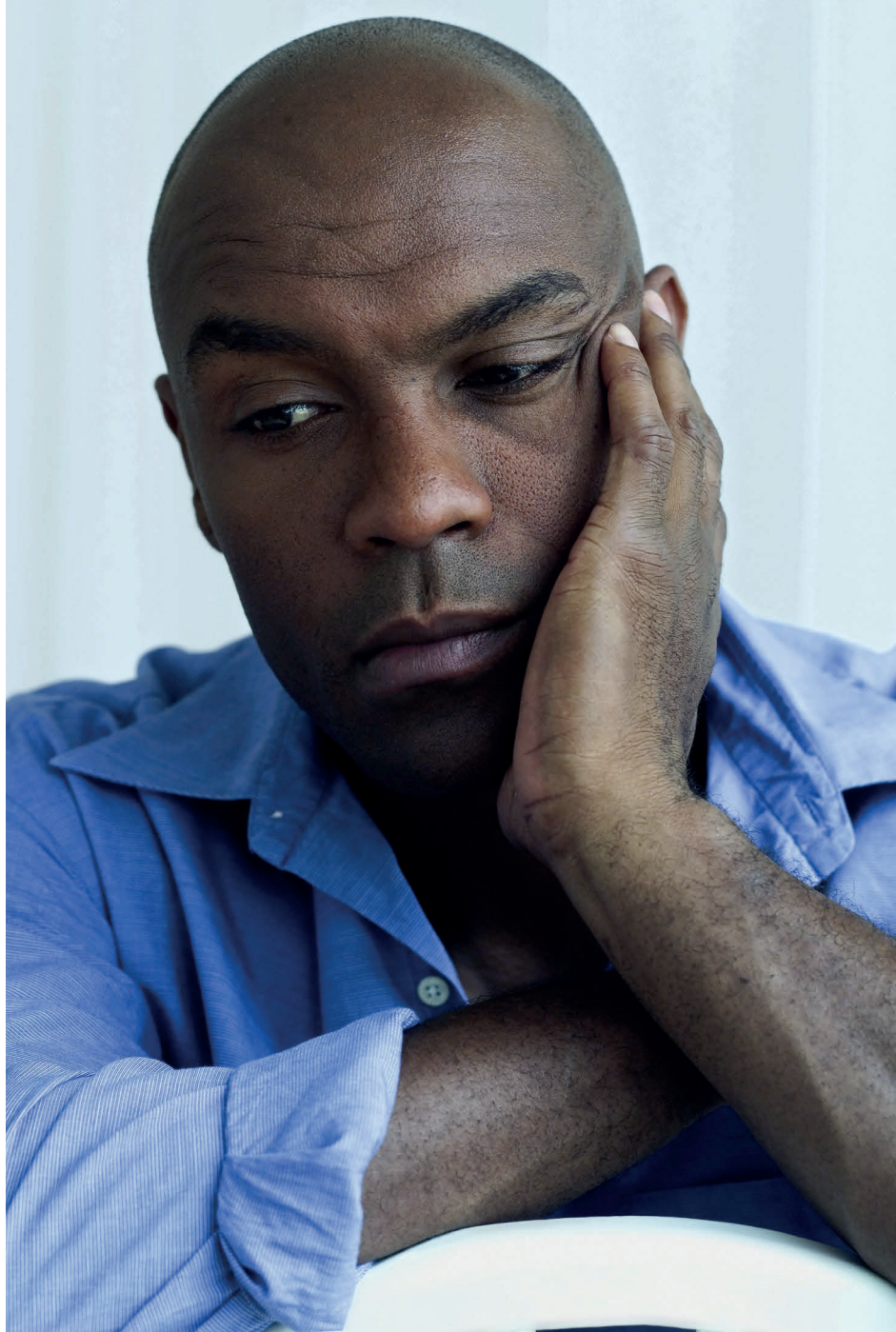
- Make the most of your leisure time.
Do things you enjoy.
- Do not worry about future things that may not happen.
- Find a hobby – paint, knit or do a craft project.
- Stay positive – appreciate what you have.
- Play cards.
- Listen to music.
- Learn new things on the computer.
- Meet a friend for lunch.
- Volunteer for your favorite cause.
- Learn a musical instrument or a foreign language.
- Look for humor in little things.

DEPRESSION

Depression can be treated. Counseling, medicine or both may help you feel better.

Talk with your healthcare provider if you:

- Have problems that do not respond to treatment, such as headaches, digestive problems or long-term pain
- Lose interest in hobbies or activities you used to enjoy
- Lose or gain weight
- Have less energy, feel tired
- Have trouble concentrating, remembering or making decisions
- Have problems falling asleep, staying asleep or oversleeping
- Feel hopeless
- Feel guilty, worthless or helpless
- Feel sad, nervous or empty



ANXIETY

Anxiety and even panic are natural reactions to breathlessness or serious breathing difficulties and may be due to a lack of oxygen.

There are different ways to deal with anxiety. These include psychological counseling, relaxation techniques, medicines, and rehabilitation programs. Talk with your healthcare provider.





COPD AND SEX

Tips:

- Make pleasure and affection your goal, whether or not you reach orgasm.
- Avoid alcohol.
- Plan to engage in sex when you are feeling most rested.
- Make sure the room is cool.
- Clear your bronchial secretions prior to sexual activity.
- You may need to use a bronchodilator prior to sexual relations.
- Avoid sexual activity immediately following a heavy meal.
- Don't rush. Give yourself plenty of time for foreplay in a relaxed atmosphere.
- If you start to get anxious, STOP, relax and cuddle.
- Choose sexual positions that conserve energy.
- If you regularly use oxygen, use the same amount during sexual activity
- Check that there is enough tubing to provide oxygen.

One of the ways of expressing love for your partner is through sexuality. COPD or any other chronic illness may change the way you are fulfilled. Avoiding sexuality and closeness is not the answer. Sex, like other physical activities, is not harmful to your lungs.

If you notice any sexual problems, seek medical help as soon as possible. Your health care provider may be able to help you stay fit and active, as long as you are willing to talk about what is bothering you.

- Be honest. Talk to your partner about your thoughts, feelings, fears and desires.
- Share your passionate feelings. Try holding each other, gentle touching, kissing and sensual massage.
- A healthy body will help you enjoy sex, no matter what your age. You will look and feel better.
- Talk to your healthcare provider to design a workout plan and stick to it. Stretching, light aerobics for your heart and strength training will all help you feel sexier and improve your stamina and flexibility.

TIPS FOR DAILY ACTIVITIES



1. Use pursed lip breathing with activities and tasks.
2. Exhale with effort or work.
Example: exhale when you lift a bag of groceries; inhale once you are holding the bag.
3. Keep a sturdy chair near your bed to help support you getting in and out of bed.
4. Keep clothes within easy reach. Drawers should be at midlevel and hangers in closet should be at an easy height to reach.
5. If you have stairs, organize your day to avoid multiple trips up and down.
6. Have furniture or handrails throughout your home for support.
7. Use a shower stool and a hand-held shower nozzle.
8. Have grab bars installed to assist you getting in and out of bath/shower.
9. Keep your soap, shampoo and other bath items within easy reach.
10. Put on a terry cloth robe to dry off instead of using a towel.
11. Use a mirror on a table and sit to put on makeup or shave.
12. Keep kitchen items within reach to avoid bending or reaching overhead.
13. When cooking or ironing, sit on a high stool rather than standing.
14. Use a stable shopping cart for support and ask the bagger to pack groceries in small, lighter bags. Ask for help loading the car.
15. Wear loose fitting clothes that do not restrict movement; avoid tight socks or stockings with elastic bands that restrict blood flow. Wear slip on shoes.

PULMONARY REHABILITATION

Pulmonary Rehabilitation will not cure lung disease. However, it can help improve your quality of life. Pulmonary Rehabilitation is a comprehensive exercise and education program designed specifically for individuals with a lung condition. This program is designed to reduce shortness of breath while increasing muscle strength and endurance through:

- Education
- Supervised and monitored exercise
- Individual and group instruction
- Breathing techniques
- Stress Management Strategies

The Pulmonary rehabilitation team consists of nurses, respiratory therapists, and exercise physiologists. This team will develop an individualized exercise and education program to help improve your quality of life. Many benefits of Pulmonary rehab include:

- Increased endurance and stamina
- Decreased anxiety
- Decreased hospital stays
- Improved confidence
- Greater independence



Talk to your healthcare provider about pulmonary rehabilitation.

SPECIAL CONSIDERATIONS

SLEEP APNEA AND COPD

Sleep apnea is an abnormal condition that causes you to stop breathing while you are sleeping. You may feel tired, irritable, and unable to concentrate. These symptoms may be worse if you have COPD. Talk with your healthcare provider about any problems you have sleeping. Your healthcare provider can provide more information on sleep apnea testing and may order a sleep study to further diagnose the problem.

ACID REFLUX, HEART BURN-GERD

Acid reflux is a condition where acid from the stomach flows back to the throat. This reflux is what causes the burning sensation of heart burn. Talk with your healthcare provider about any problems you are having with heartburn or if you think you may have acid reflux.

BIPAP

BiPAP is an acronym for Bilevel Positive Airway Pressure. Like CPAP, It's a form of Non-invasive Ventilation (NIV), meaning the pressure is applied by wearing a mask. BiPAP offers pressure above what is in room air to help you breathe easier while sleeping or during flare-ups. This works great for Flare-ups or long term because

it reduces the work you have to do to inhale, thereby making breathing easier. It also allows your muscles of inspiration and heart to relax, thereby preventing you from getting too tired. So, it is a very nice tool for treating COPD in the Hospital or at home. Not every person with COPD needs BiPAP; however, for those who do, there is increasing evidence to show that BiPAP may help people with COPD live well for a long time.

ILLNESS

Your COPD symptoms may change or your sensitivity to certain irritants may be different. Speak with your healthcare provider if COPD symptoms change or worsen. Follow your COPD Action Plan.

SURGERY

Take your COPD action plan to the surgeon and anesthesiologist. Tell your healthcare provider if you have ever had trouble with anesthesia.

Take your medication list with you so that your medicines can be continued while you are in the hospital. Follow your healthcare provider's orders for taking your medicine the day of surgery. If you use CPAP for sleep apnea ask if you should bring your machine with you.

TIPS FOR LIVING BETTER WITH COPD

1. Quit Smoking – Stay away from second-hand smoke.
2. Take all your medicines as directed.
3. Read and learn about your disease.
4. Avoid things that cause your COPD symptoms to increase.
5. Wash your hands often.
6. Do some physical exercise each day.
7. Use abdominal and pursed lipped breathing and coughing techniques.
8. Eat healthily.
9. Get enough sleep.
10. Manage stress.
11. Stay social by joining activities in your community.
12. Plan daily activities ahead of time.
13. Organize your home so you can do some things sitting down.
14. Get your influenza and pneumococcal vaccinations.
15. Talk to your healthcare provider about any needs you have.

PATIENT EDUCATION CHECKLIST

- ☐ I have received COPD education.
- ☐ I have a clear explanation of my diagnosis of COPD.
- ☐ I have reviewed my medicines and know how and when to take them.
- ☐ I understand the importance of keeping appointments with my healthcare provider, even when feeling well.
- ☐ I will follow my COPD Action Plan.
- ☐ I understand what to do if I am in the Green zone.
- ☐ I understand what to do if I am in the Yellow zone.
- ☐ I understand what to do if I am in the Red zone.
- ☐ I know how to avoid irritants that worsen my COPD symptoms.
- ☐ I know what a healthy diet is for me.
- ☐ I know how much exercise I need.
- ☐ I know how breathing techniques can aid in management of shortness of breath.
- ☐ I know how postural drainage and coughing can aid in management of COPD.
- ☐ I know what to do to keep my stress manageable.
- ☐ I know when to call my healthcare provider and what to tell them.

APPENDICES: DEVICE

APPENDIX

HOW TO USE YOUR NEBULIZER

- Albuterol
- Xopenex
- Atrovent
- Brovana
- Perforomist
- Pulmicort

1. Assemble tubing, nebulizer cup, and mouthpiece (or mask).
2. Connect to power source
3. Sit in an upright position.
4. Place specified dose/volume of medicine into the nebulizer cup
5. Lift nebulizer and seal lips around mouthpiece or apply mask
6. Breathe normally with occasional deep breaths until sputter or no more aerosol is produced.
7. Keep nebulizer vertical during treatment.
8. Clean nebulizer after each use as directed by package instructions.
9. Reorder when your supply gets low so that you do not run out.

CLEANING THE JET NEBULIZER (HOME USE)

- After each use:**
1. Remove the tubing from the compressor and set it aside – this tubing should not be washed or rinsed.
 2. Shake remaining solution from the nebulizer cup.
 3. Disassemble the nebulizer cup and mouthpiece with either sterile water or distilled water.
 4. Shake off excess water and air dry on an absorbent towel.
 5. Store the nebulizer cup in a zip lock bag.
- Once or twice a week:**
1. Disassemble the nebulizer cup and mouthpiece and wash it in a mixture of warm, soapy tap water.
 2. Soak the nebulizer cup and mouthpiece for 1 hour in a solution that is one part distilled white vinegar and three parts hot water. Discard the vinegar solution after use.
 3. Rinse the nebulizer parts with sterile or distilled water.
 4. Shake off excess water and air dry on a clean towel.
 5. Store the nebulizer in a zip lock bag.
 6. Clean the surface of the compressor with a damp cloth or sponge. An alcohol or disinfectant wipe can also be used. Never put the compressor into water.

Meter Dose Inhaler (MDI)



Pressair®



- MDIs:** Advair, Alvesco, Asmanex, Atrovent, Bevespi, Flovent, Proair/Proventil/Ventolin, Symbicort, Xopenex
- Pressair:** Tudorza
- How to Use Your Inhaler**
1. Remove the mouthpiece cap and inspect the mouthpiece for foreign objects.
 2. Shake the MDI well (three or four shakes). Do not need to shake Pressair.
 3. If the MDI is new or has not been used recently, you will need to prime your medicine by pressing the canister down to release test spray into the air away from your face. See page 54 for your medicine's specific priming instructions.
 4. Attach the spacer to your MDI, if applicable. (Page 20 for spacer use)
 5. Breathe out fully through your mouth, away from the MDI.
 6. Hold the MDI upright, with the mouthpiece aimed at the mouth and place the mouthpiece between the lips.
 7. As you breathe in slowly and deeply through the mouth, press the MDI canister or green button down once.
 8. Continue to inhale until the lungs are full.
 9. Move the mouthpiece away from the mouth and hold breath for five to 10 seconds (or as long as comfortable).
 10. Breathe out slowly. **Be sure not to exhale into the device.**
 11. Wait 1 minute between doses.
 12. Repeat for the prescribed number of doses.
 13. Recap the mouthpiece.
 14. If using a corticosteroid MDI, gargle and rinse the mouth with water or mouthwash after completing the dose. Spit out and do not swallow.
- Cleaning**
- Follow the directions specific to your device
 - Clean at least once a week
- REORDER when your supply gets low so that you do not run out.**

DRY POWDER INHALER

Diskus®



Ellipta®



Diskus: Advair, Flovent, Serevent

Ellipta: Anoro, Arnuity, Breo, Incruse, Trelegy

1. Open the device for mouthpiece to appear and snap into position.
2. Slide the lever from left to right to load dose. If using the Ellipta skip to number 3.
3. Breathe out normally; do not exhale into the device.
4. Hold the device horizontally and place the mouthpiece into the mouth with lips closed tightly around the mouthpiece.
5. Breathe in quickly and deeply through the device.
6. Remove the mouthpiece from the mouth and hold breath for 10 seconds (or as long as comfortable).
7. Be sure not to exhale into the device.
8. Store the device in a cool dry place.
9. Observe the counter for the number of doses remaining, and replace when appropriate.
10. If the diskus contains a corticosteroid, gargle and rinse the mouth with water or mouthwash after complete the dose. Spit out and do NOT swallow.

REORDER when your supply gets low so that you do not run out.

HANDIHALER®



For oral inhalation ONLY.
Do not swallow capsules.

NEOHALER®



Source: HandiHaler device insert. Boehringer Ingelheim; Pfizer. Boehringer Ingelheim Pharma GmbH & Co. KG; Ingelheim, Germany. Rev.

December 2007

HandiHaler: Spiriva

NeoHaler: Arcapta, Utibron, and Seebri

Prepare for use:

1. Open the device dust cap by pressing the piercing button. If using the NeoHaler, skip to number 2.
2. Pull the dust cap upwards or off to expose the mouthpiece.
3. Open the mouthpiece by pulling the mouthpiece ridge upwards. If using the NeoHaler, hold the base of the inhaler firmly and tilt the mouthpiece to open the inhaler.

Remove the medication capsule from the blister pack:

1. Separate one of the blister pack from the blister card by tearing along the perforation.
2. Bend back and forth one of the corners that has an arrow and then carefully peel back the printed foil with your fingers until the medication capsule can be seen.
3. Turn the blister upside down and tip the medication into your hand. DO NOT CUT THE FOIL OR USE A SHARP OBJECT TO OPEN THE BLISTER AS YOU MAY CUT THE MEDICATION CAPSULE.
4. Insert the capsule in the center chamber of the device. It does not matter which end of the capsule you insert.
5. Close the mouthpiece firmly until you hear a click, but leave the dust cap open.
6. Be sure that the mouthpiece is sitting firmly against the base.

Take your medication:

1. Hold the device with the mouthpiece up.
2. Press the piercing button until it is flush against the base and release.
3. DO NOT PRESS THE PIERCING BUTTON MORE THAN ONE TIME.
4. Breathe out completely **but do no breathe into the device.**
5. Hold the device by the base but do not block the air intake vents.
6. Raise the device device to your mouth and close your lips tightly around the device.
7. Keep your hand in an upright position and the device should be in a horizontal position.
8. Breathe in slowly and deeply so that you hear a whirring noise or feel the capsule vibrate.
9. Take a breath deep enough to inflate your lungs fully.
10. Hold your breath as long as comfortable and at the same time take the device out of your mouth.
11. Resume normal breathing.

REPEAT steps 4-10 again.

DO NOT PRESS THE PIERCING BUTTON AGAIN.

If you do not hear or feel the capsule vibrate, tap the device gently on a hard surface, like a table.

Closing:

1. Open the mouthpiece, tip out the used medication capsule and discard.
2. Close the mouthpiece and dust cap for storage of the device.
3. DO NOT STORE USED OR UNUSED CAPSULES IN THE device.

REORDER when your supply gets low so that you do not run out.

DEVICE APPENDIX

Flexhaler®



Flexhaler: *Pulmicort*

1. Hold inhaler in upright position (cover points upward)
2. Twist and remove cap.
3. If first time using, must prime. To prime: Use one hand to hold inhaler in the middle. Use other hand to twist the bottom as far as it will go in one direction, then fully back in the opposite direction, until it clicks. (See page 54 for your medicine's specific priming instructions.)
4. To prepare to take the medicine, repeat step 3.
5. Breathe out fully away from the device; do NOT blow into the Flexhaler.
6. Place the mouthpiece into the mouth and close lips tightly around the mouthpiece.
7. Breathe in quickly and deeply; inhaler may be held upright or horizontally when breathing in.
8. Remove the mouthpiece from the mouth and hold breath for 10 seconds (or as long as comfortable).
9. Breathe out slowly. Be sure not to blow into the device.
10. Replace the cover and twist to close.
11. Contains a corticosteroid, so gargle and rinse the mouth with water or mouthwash after completing the dose. Spit out and do not swallow.
12. Store the device in a cool, dry place.
13. When a red mark appears at the top of the dose indicator window, there are 20 doses remaining.

REORDER when your supply gets low so that you do not run out.

Twisthaler®



Twisthaler: *Asmanex*

1. Hold the inhaler straight up with the colored portion (the base) on the bottom.
2. While it is in the upright position, hold the colored base and twist the cap in a counter-clockwise direction to remove it.
3. As the cap is lifted off, the dose counter on the base will count down by 1. This action loads the dose.
4. Make sure the indented arrow located on the white portion (directly above the colored base) is pointing to the dose counter.
5. Breathe out fully away from the device; Do NOT exhale into the twisthaler.
6. Holding in a horizontal position, place the mouth piece into the mouth, with the mouthpiece facing toward you, and close the lips tightly around it.
7. Inhale the dose quickly and deeply while holding the Twisthaler horizontal. Do NOT cover the ventilation holes while inhaling.
8. Remove the mouthpiece from the mouth and hold breath for five to 10 seconds (or as long as comfortable).
9. Breathe out slowly. Be sure not to exhale into the device.
10. Wipe mouth piece dry and replace the cap, with indented arrow in line with dose counter.
11. Turning in a clockwise direction, gently press down and listen for "click" to assure that the next dose is properly loaded.
12. Contains a corticosteroid, so gargle and rinse the mouth with water or mouthwash after completing the dose. Spit out and do not swallow.
13. Store device in cool, dry place.
14. The dose counter displays the number of doses remaining. When the unit reads 01, this indicates the last remaining dose.
15. Throw away inhaler 45 days after removal from foil pouch or when dose counter reads "00" – whichever comes first.

REORDER when your supply gets low so that you do not run out.

DEVICE APPENDIX

ProAir Respiclick



Using Your Inhaler

1. Hold the inhaler upright and open the red cap fully until you feel and hear a “click”. Each time it “clicks” a dose is ready to be inhaled.
2. Breathe out (exhale) through your mouth and push as much air from your lungs as you can. Do NOT exhale into the inhaler mouthpiece.
3. Put the mouthpiece in your mouth and close your lips tightly around it. Do NOT block the vent above the mouthpiece with your lips or fingers.
4. Breathe in quickly and deeply through your mouth, to deliver the dose of medicine to your lungs.
5. Remove the inhaler from your mouth and hold your breath for 10 seconds or for as long as you comfortably can.
6. Do NOT take an extra dose from the inhaler even if you do not taste or feel the medicine. It is a very fine powder that you may not taste or feel.
7. Close the red cap firmly over the mouthpiece.
8. If you need another dose, repeat steps 1 through 7.

Storage

- Store at room temperature. Avoid exposure to extreme heat, cold or humidity.
- Keep the red cap on the inhaler closed during storage.

Cleaning

- Do NOT wash your ProAir Respiclick inhaler in water. It contains a powder and must be kept clean and dry at all times. If the mouthpiece needs cleaning, gently wipe it with a dry cloth or tissue.

Reordering

- REORDER when your supply gets low so that you do not run out.
- The counter on the back of your inhaler shows how many doses you have left.
- When there are 20 doses left, the counter color will change to red, and you should refill your prescription or ask your doctor for another prescription.
- When the counter displays “0” your ProAir Respiclick inhaler is empty, and you should stop using the inhaler and throw it away.
- Throw away ProAir Respiclick 13 months after removing it from the foil pouch for the first time, when the dose counter displays “0”, or after the expiration date on the package, whichever comes first.

Important Points

- Do not open the red cap unless you are taking a dose. Repeatedly opening and closing the cap without inhaling a dose will waste the medicine and may damage the inhaler.
- Your ProAir Respiclick inhaler contains a dry powder so it is important that you do not blow or breathe into it. It is also important to keep it clean and dry at all times.

REORDER when your supply gets low so that you do not run out.

DO NOT Clean the DPI

- The dry powder inhaler should not be cleaned.
- It is important to keep the device dry, as moisture will decrease drug delivery.
- If necessary, the mouthpiece can be wiped with a dry cloth.

DEVICE APPENDIX

Respimat® Inhaler



Respimat: *Combivent, Spiriva, Stiolto, Striverdi*

1. Ask your pharmacist to load medication Cartridge.
2. Keep Cap closed and Turn clear base in the direction of the arrows on the label until it clicks. (Half a turn)
3. Open the cap until it snaps fully open.
4. Breathe out fully away from the device.
5. Close your lips around the mouthpiece without covering the air vents.
6. While taking a slow deep breath through your mouth, Press the dose release button and continue to breathe in.
7. Hold your breath for 10 seconds or for as long as comfortable.
8. Repeat Turn, Open, Press (TOP) for a total of 2 puffs.
9. Close the cap until you use your inhaler again.

Cleaning

- Clean the mouthpiece, including the metal part inside the mouthpiece, with a damp cloth or tissue only, at least 1 time a week.
- Any minor discoloration in the mouthpiece does not affect your Combivent Respimat inhaler.
- If the outside of your Respimat inhaler gets dirty, wipe it with a damp cloth.

REORDER when your supply gets low so that you do not run out.

QVAR REDIHALER



Using Your Inhaler

1. Hold the inhaler upright and open the white cap.
2. Breathe out (exhale) through your mouth and push as much air from your lungs as you can. Do NOT exhale into the inhaler mouthpiece.
3. Put the mouthpiece in your mouth and close your lips tightly around it.
4. Breathe in quickly and deeply through your mouth, to deliver the dose of medicine to your lungs. Hold the inhaler upright as you take your inhalation.
5. Remove the inhaler from your mouth and hold your breath for 5-10 seconds. Then breathe out slowly away from the inhaler.
6. Close the white cap firmly over the mouthpiece, to prepare for your next inhalation.
7. If your health care provider has told you to take more than 1 inhalation per dose, make sure the white cap is closed and repeat steps 1 through 7.
8. After taking your prescribed number of inhalations, rinse your mouth with water without swallowing to help reduce the risk of a fungal infection (thrush) in your mouth.

Storage

- Store at room temperature. Avoid exposure to extreme heat, cold or humidity.
- Do not use or store near heat or open flames. Do not throw inhaler into fire or incinerator.

Cleaning

- Do NOT wash your inhaler in water. It contains a powder and must be kept clean and dry at all times.
- Clean the mouthpiece weekly with a clean, dry tissue or cloth.

Reordering

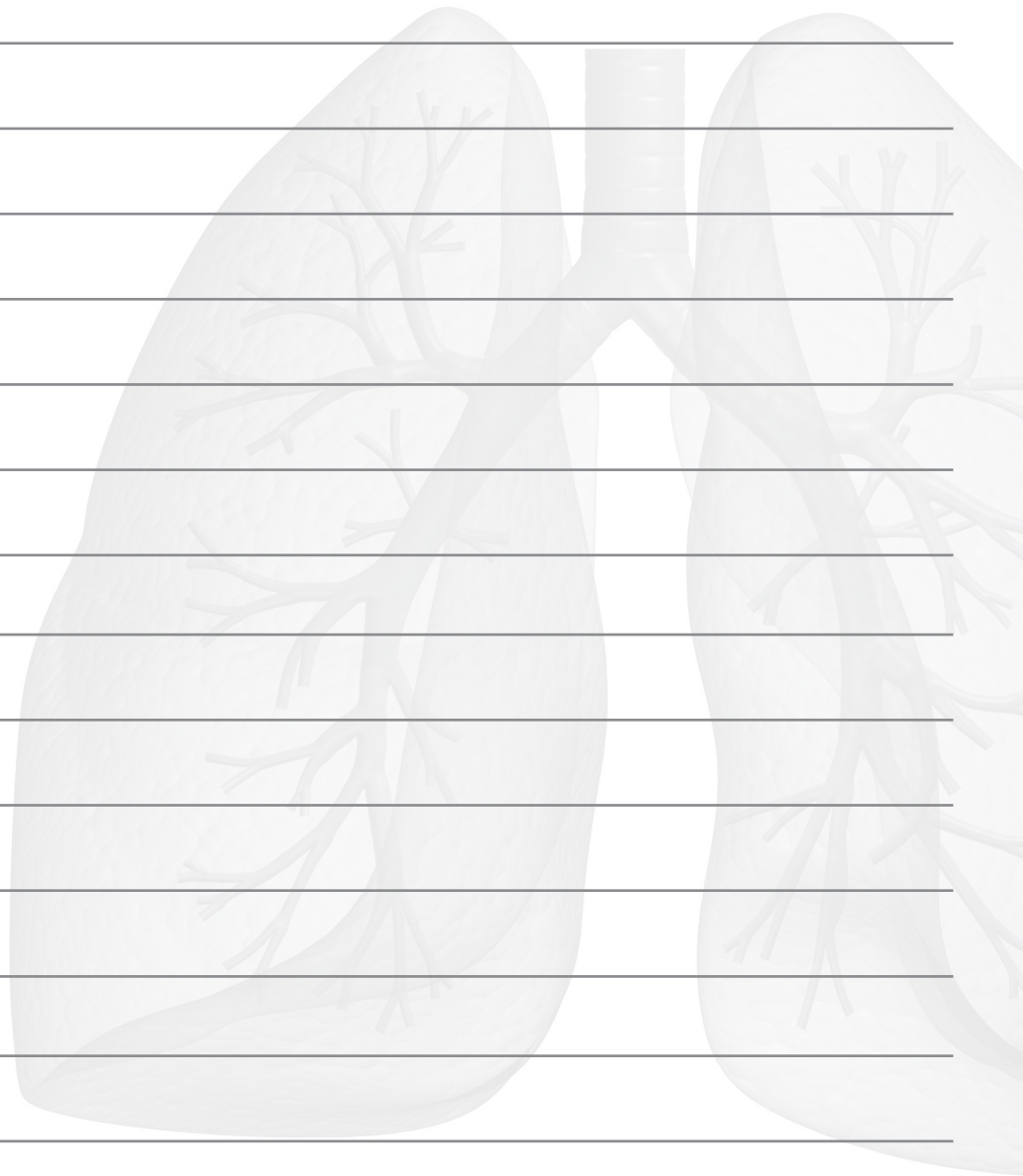
- REORDER when your supply gets low so that you do not run out.
- The counter on the back of your inhaler shows how many doses you have left.
- When there are 20 doses left, the counter color will change to red, and you should refill your prescription or ask your doctor for another prescription.
- When the counter displays "0" your inhaler is empty, and you should stop using the inhaler and throw it away. Do NOT put your inhaler into a fire or incinerator.

Important Points

- The white cap must be closed to prepare the inhaler before each inhalation or you will not receive your medicine.
- Do not open the white cap until you are ready to take your inhalation.
- Your inhaler contains a dry powder so it is important that you do not blow or breathe into it. It is also important to keep it clean and dry at all times.

REORDER when your supply gets low so that you do not run out.

NOTES:



MEDICINE/USUAL DOSING

Medication – Generic name (Brand name)	Common Dosing Regimen
Rescue/Short-Acting	
Albuterol (Proventil, Ventolin, ProAir) Levalbuterol (Xopenex)	2 puffs every 4 to 6 hours OR as needed for bronchospasm
Albuterol/Ipratropium (Combivent)	1 inhalation four times a day
Ipratropium (Atrovent)	2 puffs four times a day
Controller (Long-acting)	
Aclidinium (Tudorza)	1 puff twice a day
Arformoterol (Brovana)	1 vial via nebulizer twice a day
Formoterol (Perforomist)	1 vial via nebulizer twice a day
Glycopyrrolate (Seebri)	1 inhalation twice a day (1 capsule each)
Indacaterol (Arcapta)	1 inhalation once a day (1 capsule)
Olodaterol (Striverdi)	2 inhalations once a day
Salmeterol (Serevent)	1 inhalation twice a day
Tiotropium (Spiriva)	2 inhalations once a day (1 capsule)
Umeclidinium (Incruse)	1 inhalation once a day
Inhaled Corticosteroids (ICS) *Rinse mouth with water after each dose*	
Beclomethasone (Qvar)	1-4 inhalations twice a day
Budesonide (Pulmicort)	1-3 puffs twice a day
Ciclesonide (Alvesco)	1 puff twice a day
Fluticasone (Flovent)	1-2 puffs twice a day
Fluticasone (Arnuity)	1 inhalation once a day
Mometasone (Asmanex)	1 inhalation twice a day
Oral Corticosteroids	
Prednisone	Daily (doses and frequency may vary)
Methylprednisolone (Solumedrol)	Every 4 to 6 hours
Combination Inhalers	
Fluticasone/umeclidinium/vilanterol (Trelegy)	1 inhalation once a day
Formoterol/budesonide (Symbicort)	2 inhalations twice a day
Formoterol/mometasone (Dulera)	2 inhalations twice a day
Glycopyrrolate/formoterol (Bevespi)	2 inhalations twice a day
Glycopyrrolate/indacaterol (Utibron)	1 inhalation twice a day (1 capsule each)
Salmeterol/fluticasone (Advair)	1 inhalation twice a day
Tiotropium/olodaterol (Stiolto)	2 inhalations once a day
Umeclidinium/vilanterol (Anoro)	1 inhalation once a day
Vilanterol/fluticasone (Breo)	1 inhalation once a day
Other	
Roflumilast (Daliresp)	1 tablet once a day
Theophylline	Orally every 6 to 24 hours

Be sure to take inhalers as prescribed and read the dosing instructions that come with your medicine.

PRIMING THE INHALER

If you need to prime your device, spray the test sprays into the air away from your face.

Medicine	Time to Prime	# of Sprays when priming
Rescue/Short-Acting		
Albuterol (ProAir)	First use; two weeks of nonuse	3
Albuterol (Proventil, Ventolin)	First use; two weeks of nonuse	4
Albuterol/Ipratropium (Combivent)	First use; three weeks of nonuse	4
Levalbuterol (Xopenex)	First use; 3 days of nonuse	4
Ipratropium (Atrovent)	prior to first use; nonuse more than 3 days	2
Controller (Long-acting)		
Acclidinium (Tudorza)	No priming required	---
Glycopyrrolate (Seebri)	No priming required	---
Indacaterol (Arcapta)	No priming required	---
Olodaterol (Striverdi)	First use; 3 days of nonuse	1
Salmeterol (Serevent)	No priming required	---
Tiotropium (Spiriva) – <i>Respimat device</i>	First use; three weeks of nonuse	4
Tiotropium (Spiriva) – <i>Handihaler</i>	No priming required	---
Umeclidinium (Incruse)	No priming required	---
Inhaled Corticosteroids (ICS)		
Beclomethasone (Qvar)	No priming required	---
Budesonide (Pulmicort)	First use (see product info for specific directions)	1 click
Ciclesonide (Alvesco HFA®)16	Prior to first or nonuse of more than 10 days	3
Fluticasone (Flovent)	No priming required	---
Fluticasone (Arnuity)	No priming required	---
Mometasone (Asmanex)	No priming required	---
Combination		
Fluticasone/umeclidinium/vilanterol (Trelegy)	No priming required	---
Formoterol/budesonide (Symbicort)	First use; two weeks of nonuse	4
Formoterol/mometasone (Dulera)	First use; 5 days of nonuse	4
Glycopyrrolate/formoterol (Bevespi)	First use; 7 days of nonuse; after cleaning	4 after first use; 2 all other times
Glycopyrrolate/indacaterol (Utibron)	No priming required	---
Salmeterol/fluticasone (Advair)	No priming required	---
Tiotropium/olodaterol (Stiolto)	First use; three weeks of nonuse	4
Umeclidinium/vilanterol (Anoro)	No priming required	---
Vilanterol/fluticasone (Breo)	No priming required	---

NOTES:



GLOSSARY



Acute - A sudden, severe worsening of symptoms that usually lasts a short period of time

Allergy - An abnormal reaction by the body to something in the environment

Allergens - Something that causes an allergic reaction

Anti-inflammatory - Something that reduces swelling or inflammation. In asthma it may also reduce mucus production.

Beta agonist - The most common type of bronchodilator medicine. It helps by relaxing and opening the airways.

Chronic disease - A disease that lasts a long time and may progress to different stages (mild, moderate, severe)

Compressor - A device that powers the nebulizer with air to create a mist and deliver your medicine

Contagious - Capable of carrying and spreading a disease from one person to another through direct or indirect contact

Dietary supplements - A preparation that is added to a diet to provide additional nutritional or caloric support that may be lacking. They can be in the form of a vitamin, protein bar, nutrition shake, etc.

Heart palpitations - You feel like your heart is racing or pounding.

Inhaler - A device used to treat asthma that quickly delivers medication through the mouth to the lungs. Common inhalers are the MDI and DPI. It is effective if you are able to take a deep breath and hold for 5-10 seconds.

Mucus - Secretions from the lining of the mucus membranes help to lubricate the lungs and to trap inhaled particles so that they can be coughed out. In asthma, the mucus that is produced is excessive and can block the airways making it harder to breathe.

Prime (medicine) - Prepare your medicine device to deliver an accurate dose of medication when first using your inhaler or if you have not used it in some time. (see page 57 for how to prime your inhaler)

Reflux (GERD) - A chronic digestive disease that can cause stomach contents to back up into the esophagus irritating it. Heartburn and difficulty swallowing are some signs of GERD. It can worsen your Asthma symptoms.

Side effects - An undesirable effect of a medication

Steroids - Medicines that reduce inflammation

Support group - Groups of people who all share a certain problem or concern that meet regularly to provide support or practical advice to each other.

Virus - Causes illness (for example a cold) and is not treated with an antibiotic.

Wheeze - A high pitched whistling sound usually associated with difficulty breathing. The sound is made when air flows through narrowed breathing tubes.

PATIENT RESOURCES

American College of Chest Physicians

800-343-2227

Web site: www.chestnet.org

American Lung Association

800-586-4872

Web site: www.lungusa.org

Better Breathers Club

American Lung Association

Web site: <http://www.lung.org>

Breo Ellipta

<https://www.mybreo.com/copd/about-breo/how-to-use-breo-ellipta.html>

How To Use Inhalers

Web site: <https://use-inhalers.com>

National Jewish Medical and Research Center (LungLine®)

800-222-5864

Web site: www.njc.org

COPD Foundation

866-316 COPD (2673)

Web site: www.copdfoundation.org

DRIVE4COPD

Website: www.drive4copd.org

Glaxo-Smith-Kline

www.healthcoach4me.com

ACKNOWLEDGEMENTS & REFERENCES

National Heart Lung and Blood Institute NHLBI Guidelines for the Diagnosis and Treatment of Asthma

www.nhlbi.nih.gov > Clinical Practice Guidelines

GSK (GlaxoSmithKline)

<http://gsk.com>

AARC (American Association for Respiratory Care)

<http://www.aarc.org>

Centers for Disease Control

<http://www.cdc.gov/asthma>

American Lung Association

<http://www.lung.org/lung-disease/asthma>

National Jewish Health

<http://www.nationaljewish.org/healthinfo/conditions/asthma>

Mayo Clinic

<http://www.mayoclinic.com/health/asthma/DS00021>

National Library of Medicine

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001196/>

Pharmaceutical Inserts, Merck

<http://merck.com>

BI pharmaceuticals

<https://www.boehringer-ingelheim.com>

WHAT YOU NEED TO KNOW ABOUT COPD



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Revised January 2022
Clinical Process Improvement Team



Prevent Acute Lung Attacks



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