The Respiratory System

The respiratory system consists of the lungs and air passages. The lungs are the part of the body where gases are exchanged between the air and your blood. When you breathe in, air travels through the lung passages. This brings oxygen-rich air into the smallest airways. When you breathe out, you exhale carbon dioxide released from the blood.

Red blood cells deliver oxygen to all the cells in the body. The amount of oxygen that reaches the cells depends on several factors. These include the amount of oxygen in the blood and the amount of hemoglobin in the blood. Hemoglobin is the principal carrier of oxygen. If your lungs do not work well, it will affect how much oxygen gets to the red blood cells.

What is COPD?
Chronic obstructive pulmonary disease (COPD) is a slow, progressive lung disease that causes a gradual loss of lung function. It is preventable and treatable, and is caused by exposure to toxins in the air. The major cause of COPD is smoking. COPD causes difficulty in moving air in and out of the lungs. If the large airways are damaged, you may have chronic bronchitis. If the small airways or air sacs are damaged, you may have emphysema. Other types of airway diseases include asthma, pulmonary fibrosis and bronchiectasis.

Testing for COPD
Pulmonary functions tests will show how well your lungs are working. Chest X-rays will also help your doctor make a diagnosis. The doctor will spend a lot of time listening to your breathing through a stethoscope.

Most important are the symptoms you tell your doctor about.

Symptoms of COPD
• Shortness of breath, especially with exertion
• Coughing
• Wheezing
• Sporadic worsening of breathing, often with infection or exacerbations
• Mucous production
• Chest tightness
Changes in Your Signs and Symptoms
Knowing when your symptoms are changing is important. Treatment can begin quickly if you report these changes to your doctor. Almost all COPD patients have an increase in cough, mucus production and breathlessness from time to time. Being able to tell a bad day from an acute exacerbation is important.

Some factors that may cause a bad day include:
• Weather
• Barometric changes
• Emotions
• Allergies
• Higher altitude
• Using an empty inhaler

Signs of an Acute Exacerbation
An acute exacerbation of COPD is the term for symptoms of a “bad day” that last for more than one day and increase in severity as time goes by. Exacerbations most often require special medications that can be prescribed by your physician. Usually, if an exacerbation is untreated, you will continue to feel worse each day until you seek medical help.

If you have the following symptoms you should call your doctor or go to an emergency room for treatment:
• Worsening of your stable condition
• Increased difficulty breathing, even at rest
• The need to sleep sitting upright
• Increased wheezing
• Increased cough
• Increased mucous production or change in the color of the mucous
• Chest tightness
• Irritability, increased tiredness
• Fever
• Rapid breathing or heart rate
• Needing to use more oxygen or nebulizer treatments than normal
• Bluish color around the mouth or finger tips (called cyanosis)
Management of Stable COPD

Smoking and Tobacco Cessation
Smoking and tobacco use causes more than half of all deaths every year and illnesses such as cancer, heart disease, stroke, and lung disease. Quitting smoking will improve your overall health and increase your lifespan by up to 10 years.

How do I Quit?
Quitting takes hard work and a lot of effort, but you can quit smoking. Up to 3 million people a year quit smoking. Although it is hard, it is possible and it is worth it.

Talk to your doctor about how to stop smoking or using tobacco.

Ask friends and family to support you while you quit the use of tobacco.

Look for an educational/support program in your county. Many programs in your county and state are free. This will help you have a better chance at quitting.

Ask your doctor about using over-the-counter nicotine replacement therapy (NRT). Nicotine patches, gum, lozenges, nasal spray and inhalers are very helpful to use when quitting smoking. Ask your doctor about starting nicotine replacement while you are in the hospital. Your doctor may also prescribe medication.

How do I Stay Smoke Free?
Set your quit date and stick to it. Cut down on your number of cigarettes smoked or use of other tobacco leading up to your quit date.

Make a list of all the reasons you want to quit smoking and review it daily.

Throw away all smoking items such as ashtrays and wash the smoke out of your clothes. Air out your home. GET SMOKE FREE.

Find activities to do when you are tempted to smoke, like drinking water or chewing gum.

Plan how you will deal with tempting situations such as relaxing after a meal, emotional upsets, loneliness, boredom, depression, social situations that involve alcohol, anger or anxiety, or conflicts with people. These temptations will diminish with time; after a few weeks you will be feeling better.

Exercise every day. Walking can increase endorphins and make you feel better.

Learn and practice stress management techniques; slow, deep breathing will calm you.
Eat healthy. Choose snacks that are within your prescribed diet. Carrot sticks, celery sticks and sunflower seeds are good suggestions.

Mark your success on the calendar and reward yourself. Be proud that you are becoming a non-smoker and tobacco-free.

**Smoking/Tobacco Cessation Programs**
Baptist Medical Center-Nassau – Addicted to Life Program is a program that provides free nicotine replacement therapy, individualized counseling and Smoking Cessation classes to its employees, patients and their families. For more information call 904.321.3892 or go to www.addictedtolife.info.

- American Heart Association 1.800.242.8721 www.americanheart.org
- American Cancer Society 1.800.227.2345 www.cancer.org
- American Lung Association 1.800.586.4872 www.lungusa.org
- Florida Department of Health Quit for Life Line 1.850.245.4445 www.doh.state.fl.us/tobacco/quitline.html

**Know Your Medications and Use Them as Directed**
Inhalers are used to open airways (bronchodilators) and to lessen inflammation. Nebulizers are used to open airways. The treatments can be ordered “as needed” or on a routine basis.

Know how to recognize if your multi-dose inhaler is empty. Keep a list of your medications with you and up to date. Make sure to get a flu shot annually and a pneumonia vaccine every 5 years, or as directed by your doctor.

**Maintain Good Nutrition**
COPD can cause weight loss. This happens because your appetite changes and digestion slows from poor oxygen to your GI tract.

If you are overweight, your heart and lungs have to work harder. Talk to your doctor about losing weight. Also:

- Eat a balanced diet – lots of fresh fruits and vegetables, whole grains, high fiber foods. Drink lots of water.
- Foods rich in healthy fats like fish and vegetable oils help decrease inflammation.
- Foods rich in fiber and flavonoids, like apples, may help reduce chronic productive cough.
- Eat small, frequent meals.
- Add extra protein to your diet to prevent weight loss by using whole milk, eggs, and protein drinks.
- There is no evidence that milk or dairy products increase mucous production, so drink your milk.
Learn Effective Breathing Techniques

Pursed Lip Breathing:
Breathing in through the nose and out through the mouth with lips together like blowing out a candle.

Blow out twice as long as you breathe in. (Breathe in for a count of 2, breathe out for a count of 4). This breathing pattern will help when you are feeling anxious or particularly short of breath after exerting yourself. It will help empty your lungs of old air so there is room for new fresh air.

Diaphragmatic Breathing:
Using your diaphragm to breathe instead of your chest muscles; also known as belly breathing.

The diaphragm is the large muscle that separates your lungs from your abdomen. By using your diaphragm to breathe, you will get a large amount of air and oxygen into your lungs. Practice this by lying on your back and placing one hand on your chest (it should stay still) and one hand on your belly (this one should move).

Take a deep breath through your nose and push your stomach muscles out. When you breathe out through pursed lips, squeeze your belly muscles down toward your back. Practice this several times a day until it becomes your normal breathing pattern.

Exercise Helps
Do stretching exercises to help keep your neck, shoulders and chest relaxed. They often tighten up when you are working hard to breathe.

Stretch your other muscle groups too – arms, back and legs.

Add short walks when your condition and the weather allow.

Consider pulmonary rehabilitation for increasing strength and endurance. An order is needed from your doctor to participate in this.

Resources for COPD Patients
American Lung Association www.lungusa.org
COPD Foundation’s COPD Big Fat Reference Guide www.copdbfrg.org
Baptist Health provides a system of comprehensive care which includes four full-service adult hospitals and the region’s only children’s hospital, plus an extensive network of outpatient physician offices. To learn more about Baptist Health’s circle of care, visit ebaptisthealth.com.