A photograph of an older man with grey hair, wearing a light-colored sweater, and a young girl with blonde hair in a ponytail, wearing a pink shirt. They are both smiling and looking at an open book together. The background is a plain wall with a blue chair back visible.

YOUR LUNGS YOUR LIFE

INFORMATION ABOUT DIAGNOSING, TREATING
AND LIVING WITH LUNG CONDITIONS

ST. JOHN'S
Heart Institute



Dear Friend,

The fact that you have lung disease does not mean you cannot have a healthy and productive future. By adopting a few lifestyle changes, you can improve how you feel.

It is my strong hope that you will not become discouraged about your situation, but will take this opportunity to become a much healthier and happier person. If you follow the advice in this book, you can change your lifestyle to improve your health.

Good luck in your treatment and management and in your quest for a healthier lifestyle.

Sincerely,

Mark Grimm, M.D.
Medical Director
Pulmonary Rehabilitation
Hammons Heart Institute

Know the signs and symptoms of lung disease. Call your doctor if you believe you experience the following symptoms:

- Persistent cough that is productive or not productive.
- Dyspnea (shortness of breath)
- Wheezing
- Chest Pain
- Hemoptysis (coughing up blood)
- Cyanosis (bluish or purplish color of the skin, most apparent around the lips and nail beds)
- Swelling in the arms, legs and ankles

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INFORMATION ON LUNG ANATOMY & PHYSIOLOGY



Your Lungs & How They Work

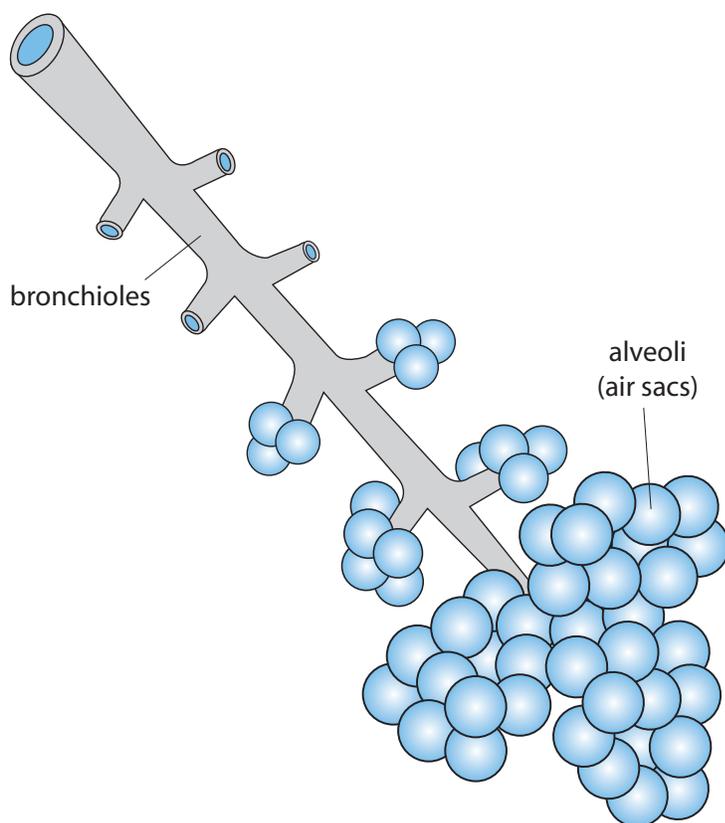
The lungs are an important organ that helps you breathe in good air and push out the bad. The lungs provide oxygen to the blood and remove carbon dioxide. The lungs are highly elastic and lie within the chest cavity.

The air you breathe contains oxygen, which helps provide energy for the cells in your body. The lungs are separated by the wind pipe (trachea). From the windpipe the lungs branch off into two parts, the right and left lung. The left side is slightly smaller having only two segments, the upper and lower lobes. The right lung is divided into three segments, the upper, middle and lower lobes.

As air enters your body through your nose or mouth it is warmed and moistened. The air then travels down a system of air tubes known as the tracheobronchial tree (resembles upside down tree). The bronchial tree begins with your windpipe (trachea) and moves down through two big air tubes called the left and right bronchi. These bronchi branch into your right and left lung and from there air travels into smaller and smaller air tubes called bronchioles. Attached to the end of these smaller air tubes are small air sacs called alveoli.

There are millions of tiny air sacs (alveoli) in your lungs and they look like a cluster of grapes. These air sacs are very elastic and inflate when you breathe in and deflate when you exhale. The exchange of oxygen and carbon dioxide takes place in the alveoli. The blood picks up oxygen and takes it to the left side of your heart and at the same time the right side of your heart sends blood to release carbon dioxide into the alveoli to be exhaled.

The lower part of your lungs rest above a muscle called the diaphragm, your main breathing muscle. When you breathe in, the diaphragm contracts and air can enter your lungs. When you breathe out, the diaphragm will rise to help push air out of your lungs. If you have lung disease, the diaphragm may not work as well as it should. Instruction on breathing techniques can improve air movement into and out of the lungs.



LUNG DESIGN AND PURPOSE AT A GLANCE

- The lungs exchange oxygen and carbon dioxide between the air we breathe and the blood.
- The tracheobronchial tree is the passageway from the mouth to the interior of the lung.
- Gas exchange occurs in the alveoli deep in the lungs.
- Breathing air in (inhalation) requires muscular effort.
- Air is warmed, humidified, and cleaned by the nose and lungs.

INFORMATION ON LUNG CONDITIONS & DIAGNOSIS



MEDICAL HISTORY

Your doctor will ask you questions that focus on how often you cough, what you cough up, if you are short of breath and if you wheeze while resting or with activities. Your doctor will look at your past smoking and work history. Your doctor will want to know if you have had contact to dust and/or other lung irritants.

A complete family history will be done. Your doctor may ask about family members with pulmonary disease and how old they were when symptoms appeared.

PHYSICAL EXAMINATION

Your doctor will do a complete examination of your chest. During this examination he/she will observe how fast you breathe, how deep you breathe and how hard you work to breathe. (He will listen to your chest to assess airflow in and out of your lungs and to your heart sounds.)

CHEST X-RAY

A chest X-ray is a picture that looks at the size of your lungs and heart. You will need to remove clothing and wear a hospital gown. Staff may request removal of jewelry from the upper body.

CHEST CT SCAN (COMPUTED TOMOGRAPHY)

This scan may be recommended to look inside the chest. The test may be done with contrast media (dye) or without. If dye is used, it is given in a small vein of the hand or arm.

During the test you will be asked to lie very still on a narrow table that slides into the center of a scanner. The complete scan only takes a few minutes. If dye is used, the scan will last longer.

■ **ELECTROCARDIOGRAM (ECG OR EKG)**

This test records electrical signals that travel through the heart. The ECG helps your doctor detect some heart abnormalities. You can eat and drink 10 minutes before this test. During the test you will be asked to rest quietly while several patches will be attached to your chest, arms and legs with wires that lead to the ECG machine. This test can be done in a variety of settings; in the home, in an ambulance, in the emergency department or your hospital room.

■ **PULMONARY FUNCTION TEST (PFT'S)**

This is a test that measures your breathing by blowing into a tube while sitting in a chair. It will measure how much air your lungs can hold and how quickly you can move air in and out of your lungs. It will also measure how well your lungs can move oxygen into the blood.

You will want to wear loose clothing that will not get in the way of your ability to breathe deeply. Avoid large meals before your test; this will make it more comfortable for you to breathe deeply. Check with your doctor before the test if you are using medications that may affect your test results.

■ **TREADMILL OR CYCLE EXERCISE TEST**

This test helps your doctor assess your breathing and your heart. The results can help in the planning of an exercise program that is safe for you. Check with your doctor before the test if you use medications that may affect your test results. The treadmill is like a moving sidewalk with a handle. As the test progresses, the speed and angle of the belt will be increased. A doctor and a trained technician will observe your pulse, blood pressure, oxygen levels and your ECG during the 5-15 minute test.

■ **PULSE OXIMETRY**

This test will estimate the percent of oxygen in your blood (SpO2). Normal values range from 90 to

100%. A probe is clipped on the finger or earlobe for measurement.

■ **ARTERIAL BLOOD GASES (ABG'S)**

This test will help your doctor determine if your lungs are getting enough good air in (oxygen) and bad air (carbon dioxide) out. A sample of blood is drawn from an artery, most often near the wrist.

■ **BRONCHOSCOPY**

This test will help your doctor look at the inside of your airways. A small tube (bronchoscope) is put through your nose or mouth into the air passage of your lungs. The bronchoscope is very thin, bends easily and has a small light in the tip.

Your doctor will give you specific instructions on how to prepare for this test.

■ **CT GUIDED LUNG NEEDLE BIOPSY**

This is an x-ray guided test. Small samples of lung tissue are taken through a needle.

Your doctor will give you specific instructions on how to prepare for this test.

■ **NOTES**

INFORMATION ON LUNG CONDITIONS



DISEASES OF THE AIRWAYS

■ COPD

What is COPD?

COPD stands for Chronic Obstructive Pulmonary Disease. Chronic means long term. Obstructive refers to a blockage or obstruction in the airways of the lungs. Pulmonary refers to the lungs. Disease is referring to sickness.

The most common obstructive lung diseases are Chronic Bronchitis, Emphysema, Asthma, Bronchiectasis, and Cystic Fibrosis. If you are diagnosed with COPD you may have one or a combination of any of these disorders.

What are the Symptoms of COPD?

With COPD you may have one or more of these symptoms:

- Shortness of breath.
- A chronic cough or heavy sputum (phlegm or mucus).
- Wheezing (a high pitched whistling sound caused by air trying to move in and out of your airways).
- Too much mucus in your lungs.
- Colds that last for weeks instead of days.
- Feeling out of breath doing daily activities (such as bathing, eating, or walking to your car).

Living with a chronic lung disease means learning to control it, and the best way to do that is to be an active participant in your treatment. You will be in control and feel better about yourself and your commitment.

IS THERE A CURE FOR COPD?

There is no cure for COPD. The damage to the airways and lungs cannot be reversed. Once COPD is diagnosed, there are many interventions and life style changes that can and should be made to help improve the symptoms and slow the damage to the lungs.

The single most important step to take once COPD is diagnosed is to STOP SMOKING. Stopping smoking allows your lungs to recover from years of smoke and air pollution. In most cases, lung function improves. Symptoms of cough, wheezes, breathlessness, and mucus production may not entirely disappear, but most get better. Even if you do not perceive improvement, the cause of continued damage to your lungs has been eliminated.

■ ASTHMA

What is Asthma?

Asthma is a chronic reversible lung disease in which the airways become inflamed or swollen. The airways become narrow and breathing becomes difficult. The airways are extra sensitive to certain triggers or irritants. If asthma is not treated or controlled, it can be a serious life-threatening condition.

What are the Symptoms of Asthma?

You may have all, some, or just one symptom. Symptoms can be mild or severe:

- Coughing – This may be the first sign that your asthma is not under control. People with asthma often cough at night, with exercise, in smoky areas, in cold air, after laughing or crying.
- Wheezing (a whistling noise when you breathe).
- Chest tightness (the feeling that someone is squeezing or sitting on your chest).
- Shortness of breath.
- Drop in peak flow reading.
- Headache.
- Itchy, watery, or glassy eyes.
- Itchy, scratchy, or sore throat.
- Stroking chin or throat.
- Sneezing.
- Restless.
- Runny nose.
- Change in face color.
- Dark circles under eyes.
- Breathing faster than normal.

Make note of what your most common warning signs of an asthma episode are.

What are the Asthma triggers?

A trigger is any object, act, or event that causes the airways to become inflamed or causes asthma symptoms. These triggers are different for different people. When you know what your trigger is, you will want to avoid that thing. These triggers can include:

- Dust mites.
- Animal dander, especially cats.
- Exercise.
- Viral infection (cold, bronchitis, pneumonia, flu).
- Cigarette smoke, smoke from a wood stove.
- Perfume.
- Pollens and molds.
- Cold air.
- Cockroaches.
- Grass.



Since animal dander, especially from cats, can be an asthma trigger, it is a good idea to keep animals out of the house, or at least away from the sleeping areas.

How do I avoid Triggers?

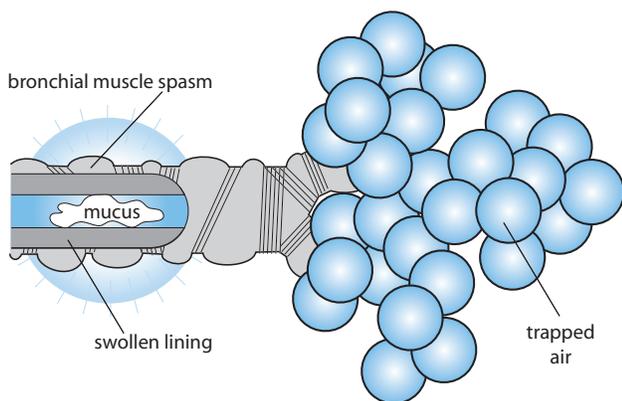
- Do not allow smoking in your house or car.
- Remove objects that collect dust (e.g. stuffed animals) from the bedroom.
- Consider using a HEPA air filter in the bedroom.
- Keep humidity in your house between 25 and 50 percent.
- Encase your mattress and box spring in an airtight cover.
- Wash bed covers, clothes, and stuffed toys once a week in very hot (130 degrees) water.
- Keep windows closed during seasons when pollen and mold are highest.
- Avoid sources of molds (wet leaves, garden debris).
- Keep animals out of the house, or at least away from the sleeping areas.
- Remove carpets from your bedroom.
- Do not use perfume or cologne.
- Eliminate roaches from the home.

Exercise is one trigger that you should not avoid. With the right asthma plan, almost every person with asthma should be fully active and be able to play any sport.

What can I do to Manage My Asthma?

There are several things you can do to live a normal, active life.

1. You should first work out an effective plan with your doctor. You may need to be evaluated by an allergist for testing and treatment of underlying allergies that can trigger asthma. Your doctor will recommend that you use a Peak Flow Meter. A Peak Flow Meter measures the fastest speed at which you can blow air out of your lungs. You will need to keep a daily diary of your Peak Flow readings. Your doctor will instruct you how often to perform a peak flow, and help you create a plan to treat your asthma based on your peak flow scores.
2. When you have an asthma plan worked out by your doctor, make sure to follow the plan and take all medications as prescribed. If you find you are using your rescue inhalers more than recommended, it is time to call your doctor to re-evaluate your treatment plan.
3. Watch for warning signs that an asthma episode may be on the way.



How do I use a Peak Flow Meter?

1. Remove gum or food from your mouth and move the pointer to zero
2. Stand up, and hold the meter horizontally with your fingers away from the vent holes and the marker
3. Take a deep breath
4. Put the mouthpiece inside your mouth on your tongue and close your lips snug around the mouthpiece – your doctor may recommend you use nose clips also
5. Blow out as hard and as fast as you can stand up (a short, sharp blast)
6. Note your number
7. Move the pointer to zero and wait at least 15 seconds
8. Repeat above steps two more times
9. Mark your best score on your peak flow diary

Children under the age of five may not be able to blow the peak flow reliably. They should use a diary that is based on signs of asthma.

What if I have an Asthma Episode (Attack)?

1. Stay calm and relaxed
2. Follow your emergency treatment plan
3. DO NOT drink a lot of water – just drink normal amounts
4. DO NOT breathe warm, moist air from a shower
5. DO NOT re-breathe into a paper bag held over the nose
6. DO NOT use nonprescription medicines without first calling the doctor

Prognosis and Expectations for Asthma

A person with asthma can expect to:

- Be active without having asthma symptoms – this includes exercise and sports.
- Prevent asthma episodes.
- Avoid side effects from asthma medicines.



ASTHMA: Living a Normal Life

A person with asthma can live a normal life with proper treatment. Following your asthma plan is very important as well as keeping a good line of communication with your doctor.

WHO GETS CHRONIC BRONCHITIS?

More than 11 million Americans are diagnosed with chronic bronchitis annually. The prevalence rate of chronic bronchitis has been consistently higher in females than in males. Chronic bronchitis affects people of all ages, but is higher in people over 45 years of age.

No matter what their occupation or lifestyle, people who smoke cigarettes are most likely to develop chronic bronchitis. Workers with certain jobs, especially those involving high concentrations of dust and irritating fumes, are also at high risk of developing this disease.

Higher rates of chronic bronchitis are found among coal miners, grain handlers, metal molders, and other workers exposed to dust.

Symptoms of chronic bronchitis worsen when atmospheric concentrations of sulfur dioxide and other air pollutants increase. These symptoms are intensified in individuals who smoke.

CHRONIC BRONCHITIS

What is Chronic Bronchitis?

Chronic Bronchitis is an inflammation of the lining of your bronchial tubes. They become inflamed (swollen) and this causes them to make too much mucus.

This can be brought on by:

- Cigarette smoke (the most common cause).
- Air pollution.
- Industrial dust and fumes.
- Allergens.

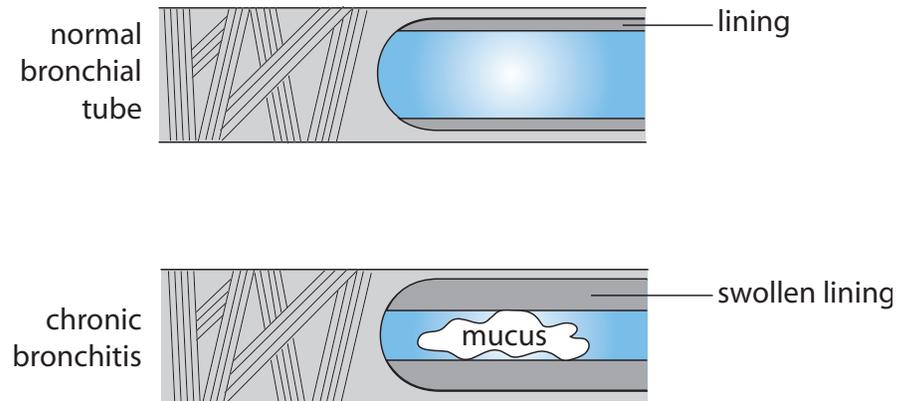
What Causes Chronic Bronchitis?

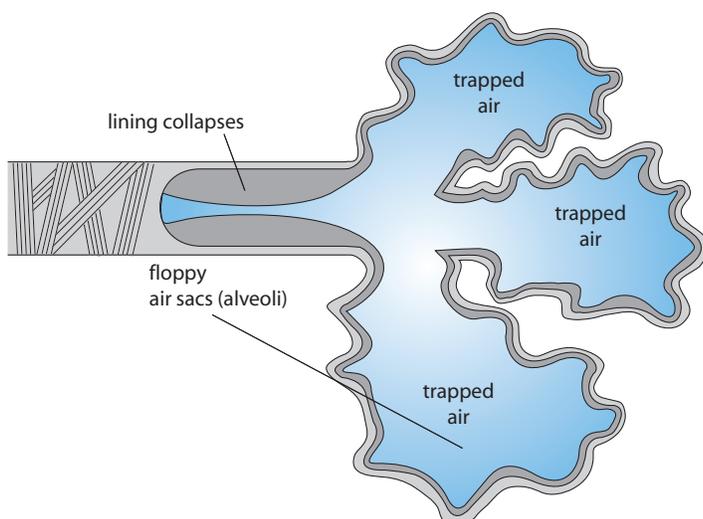
Once the bronchial tubes have been irritated over a long period of time it becomes harder to breathe, and the extra mucus causes chronic coughing and wheezing. Some airways may even be blocked by extra mucus causing an obstruction. When this happens you are more likely to have lung infections.

Treatment for Chronic Bronchitis

Antibiotics can cure bacterial infections but they can't cure chronic bronchitis. The best way to stop the progression of chronic bronchitis is to:

1. Avoid the irritant causing the disease (especially cigarette smoke) **QUIT SMOKING!**
2. Drink plenty of fluids.
3. Keep your lungs cleared of mucus.
4. Take the medications you are prescribed.





EMPHYSEMA

What is Emphysema?

Emphysema is a disease usually caused by smoking or second hand smoke, but sometimes it can be genetic. Emphysema destroys the air sacs in your lung (SEE PICTURE AT RIGHT) causing airway blockage.

Several things happen with Emphysema:

1. The transfer of oxygen and carbon dioxide does not exchange evenly throughout your body.
2. Extra pressure is needed to exhale. Your body has to work harder to exhale due to the damaged lung sacs that do not snap closed, causing air to be trapped and breathing to be difficult. It is easy for air to enter into your lungs, but not so easy for it to get out.
3. Thick mucus may be trapped making it easy for infections to develop.
4. Shortness of breath is the hallmark of, or primary symptom of emphysema.

CYSTIC FIBROSIS (CF)

What is Cystic Fibrosis?

Cystic Fibrosis is a chronic, inherited disease that causes the body to make thick, sticky mucus. Cystic Fibrosis primarily affects the respiratory and digestive systems in children and young adults.

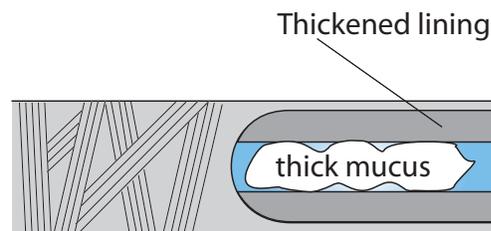
On average, individuals with Cystic Fibrosis have a lifespan of approximately 30 years.

What are the Symptoms of Cystic Fibrosis?

Cystic Fibrosis does not follow the same pattern in all patients. It affects different people in different ways and degrees. Poor growth, malnutrition, frequent respiratory infections, persistent diarrhea, bulky foul-smelling and greasy stools, chronic cough with thick mucus, salty-tasting skin or frequent wheezing are some of the symptoms a person with Cystic Fibrosis may experience.

POINTS TO REMEMBER ABOUT CYSTIC FIBROSIS

- Parents should treat their children with CF as normally as possible.
- Family and friends should remember that CF is not contagious.
- CF parents should not feel guilty or responsible for causing their child's disease; they could not have prevented it.
- In families with CF, brothers, sisters, and first cousins of the CF patient should be tested to see if they carry the defective gene.
- Patients and families should work closely with doctors and other medical specialists to develop self-management skills that can improve quality of life.
- Above all, CF patients and their families should keep a positive attitude. Scientists continue to make advances in understanding CF. The outlook is bright for further improvements in the care of CF patients and even for the discovery of a cure.



cystic fibrosis

How is Cystic Fibrosis Diagnosed?

The most common test for Cystic Fibrosis is called the sweat test. It measures the amount of salt (sodium chloride) in the sweat. An area of skin (usually the forearm) is made to sweat using a chemical and applying a mild electric current. After 30-40 minutes, the sweat is collected and analyzed. Higher than normal amounts of sodium and chloride suggests cystic fibrosis. Additional test may include:

- The IRT test may be used on newborns – this is a blood test.
- Chest X-rays.
- Lung function tests.
- Sputum cultures.
- Stool examinations.

How is Cystic Fibrosis Treated?

Currently, there is not a treatment for the basic cause of CF, though several drug-based approaches are being investigated. The goal of treatment is to keep the lungs clear of mucus and free of infection.

- Antibiotics.
- Chest therapy with postural drainage.
- Exercise.
- Aerosol medications: bronchodilators and mucolytics – also, an aerosolized enzyme or other medications may be used.
- Decongestants.
- Diet of well-balanced, high-caloric foods, low in fat and high in protein.
- Vitamins A, D, E, and K supplements.

Prognosis of Cystic Fibrosis

Cystic Fibrosis was once fatal in childhood. Better treatment methods have increased the average lifespan to nearly 30 years.

■ BRONCHIECTASIS

What is Bronchiectasis?

Bronchiectasis is an abnormal stretching and widening of the large airways. A person may be born with it (congenital bronchiectasis) or may acquire it in life later due to chronic infections.

What are the Symptoms of Bronchiectasis?

Symptoms may include:

- Chronic cough with large amounts of foul smelling sputum production.
- Coughing up blood.
- Cough worsened by lying on one side.

- Shortness of breath worsened by exercise.
- Weight loss.
- Fatigue.
- Clubbing of fingers may be present (abnormal amount of tissue in the fingernail beds).
- Wheezing.
- Skin discoloration, bluish.
- Paleness.
- Breath odor.

How is Bronchiectasis Diagnosed?

Tests may be done which include:

- Chest x-ray.
- Sputum culture.
- Blood test may reveal anemia and differential may show evidence of fungus infection.
- Serum immunoglobulin analysis.
- Serum precipitins (testing for antibodies to the fungus, aspergillus).
- PPD (purified protein derivative) skin test for prior TB infection.

Treatment and Prognosis for Bronchiectasis

Diagnosis may be done by a variety of test including chest x-ray and a sputum culture.

Treatment is designed to prevent complications. The most important part of treatment can be done at home by learning to use gravity to help drain lung secretions. This can be done by using pillows on the bed to position your lungs below the rest of your body. You can get a family member to assist with chest percussion by hand or a mechanical precursor. A doctor or respiratory therapist can instruct you on how to do this.

Early treatment of infections with antibiotics can also prevent complications. Daily postural drainage and chest clapping, antibiotics, with a back-up of appropriate medical care can prevent most complications.

■ OBSTRUCTIVE SLEEP APNEA

What is Sleep Apnea?

Sleep apnea is a disorder in which a person stops breathing for short periods during sleep. This may happen frequently.

Warning signs include:

- Loud snoring, pauses in breathing followed by gasps.
- Falling asleep at inappropriate times such as while driving, at movies or at work.
- Early morning headaches.
- Trouble concentrating, forgetfulness, irritability, depression, loss of interest in sex.

Left untreated, people are at risk for high blood pressure, heart attack, heart failure stroke, depression and car accidents.

If you or your sleep partner suspects you have sleep apnea, see your physician. Treatments are available.

DISEASES OF THE INTERSTITIUM

In interstitial lung disease, lung tissues are damaged, become inflamed and eventually become scarred or fibrotic, resulting in stiff lungs. The lung tissues may have been damaged in known or unknown ways. This fibrosis impairs the lungs ability to provide oxygen to the body's tissues.

Classifying Pulmonary Fibrosis

There are six categories to describe the causes of pulmonary fibrosis. The first category is occupational and environmental exposures to dusts, chemicals, gases, fumes, vapors, paraquat and irradiation. Exposure of certain drugs and poisons, such as chemotherapeutic agents, antibiotics and miscellaneous medications is the second category. The third category involves Connective Tissue Diseases and the fourth category is Other Systemic Diseases. Infections, the fifth category, includes the residual of active infection of any type. Idiopathic Pulmonary Fibrosis, the final and most common of the categories, originates from unknown factors.

Facts

Equal numbers of men and women are diagnosed with pulmonary fibrosis and most are between 40 and 70 years of age. Survival rate averages between 4 to 6 years after diagnosis.

Symptoms

Symptoms of pulmonary fibrosis include shortness of breath, increased shortness of breath with activity or exercise, a dry cough, and low oxygen levels in the blood. It may be easier for the person to get an infection; they may develop clubbed finger nails and heart failure with swelling of their legs and hands.

Diagnosis

A doctor may diagnose this problem with a careful patient history and physical and may order several tests and procedures to help confirm the diagnosis. The tests and procedures include blood tests, chest x-rays and CT scans, pulmonary function tests, bronchoalveolar lavage, and open lung biopsy.

Treatment

While there is no cure for pulmonary fibrosis, this serious condition can be treated in several ways. The physician may prescribe medications, such as prednisone to decrease inflammation of the lung tissue, or other drugs. The person will be encouraged to get vaccinations against influenza and pneumonia regularly. Wearing oxygen may be prescribed to help maintain adequate oxygen levels in the blood. Exercise is necessary to keep muscles at their most efficient. Quite often, enrolling in Pulmonary Rehabilitation as an outpatient is encouraged so that the person may get the needed pulmonary education and exercise in a safe, monitored environment while receiving the proper amounts of oxygen. The physician may order an evaluation at a transplant center for possible lung transplantation.

Risk Factors

Certain habits, conditions, practices or exposures may increase the risk of developing pulmonary fibrosis. Cigarette smoking, taking certain medications, exposure to certain infections, environmental and occupational risk exposure, chronic aspiration from gastro esophageal reflux disease (GERD) and family genetics may contribute to an increased risk for pulmonary fibrosis.

Research

Research into the causes and treatment of pulmonary fibrosis is going on all the time in university medical centers all around the world. Both older and newer medications are being studied to see if they can lessen the severity and the symptoms of this serious lung condition.

Resources

Further detailed information about pulmonary fibrosis is available in many places, including libraries and websites on the internet. Ask your physician or your health educator about the best and most current information available.

Suggestions for websites to review:

- Medline Plus of The National Institute of Health, www.nlm.nih.org
- The Pulmonary Fibrosis Foundation, www.pulmonaryfibrosis.org
- The Coalition for Pulmonary Fibrosis, www.coalitionforpf.org
- American Lung Association, www.lungusa.org

Also available at the National Institutes of Health is a website, www.clinicaltrials.gov, to search for active or pending research on pulmonary fibrosis, and other serious conditions.

DISORDERS OF GAS/BLOOD EXCHANGE

■ RESPIRATORY FAILURE

Normally we breathe oxygen into the lungs and exhale carbon dioxide out of the lungs. Respiratory failure happens when one or both of these functions are hindered and the oxygen in the blood becomes dangerously low or the level of carbon dioxide becomes dangerously high.

■ PULMONARY EDEMA

Pulmonary edema is usually caused by heart failure that results in increased pressure in the pulmonary (lung) veins. Symptoms may include shortness of breath and coughing up pink tinged or white frothy sputum.

■ PULMONARY EMBOLUS

Pulmonary embolus is a condition in which the pulmonary artery is blocked. This blockage can occur from a blood clot, a fatty deposit, an air bubble that travels from another location in the body. Symptoms include: sudden, increased shortness of breath and fast heart rate. Treatments include giving medication to dissolve the clot, and at times surgically removing the blockage.

■ ACUTE RESPIRATORY DISTRESS SYNDROME

Acute Respiratory Distress Syndrome (ARDS) is diagnosed based on symptoms, such as severe shortness of breath, low oxygen in the tissues or infiltrate lung markings on a chest film. Numerous underlying conditions can lead to ARDS and can range from blood-borne infections to major trauma. This syndrome is usually managed by providing oxygen and proper ventilation to the patient by means of a mechanical ventilator.

■ PULMONARY HYPERTENSION

Pulmonary Hypertension is a disorder in the lungs, in which the arteries in the lungs have narrowed, making it difficult for blood to flow through. It is essentially high blood pressure in the arteries that supply the lungs. The blood vessels that supply the lungs constrict and the vessels cannot carry as much blood. The continuous high pressure causes the heart to work harder; less blood goes through the

lungs to pick up fresh oxygen. Symptoms are fatigue, dizziness, and shortness of breath. Supplemental oxygen and other medications help treat this condition.

■ COR PULMONALE

Cor pulmonale is a disorder that slows or blocks blood flow in the lungs. This raises blood pressure and leads to congestive heart failure. Cor pulmonale is right-sided heart failure caused by other lung diseases. Cor pulmonale differs from left-sided heart failure in that the lungs do not fill with fluid. Symptoms include: shortness of breath (specifically with exertion, fatigue, fainting, chest pain, and swelling in the legs). Treatment often includes diuretics (medicine to reduce swelling) and other cardiac medications.

DISEASE OF THE PLEURA

■ PLEURAL EFFUSION

Pleural effusion is the abnormal accumulation of fluid between the chest wall and the lining that covers the lungs. Shortness of breath is a common symptom. A thoracentesis is a procedure using a needle to drain the abnormal fluid. Fluid can be collected and sent to a lab for testing. If a large amount of fluid is present, the physician can place a tube into the chest wall to drain the fluid over time. Pleural effusions may result secondary to other medical conditions, such as pneumonia, congestive heart failure, tuberculosis, or lung tumors.

■ EMPYEMA

Empyema is an infection in the membranes that surround the lungs. Symptoms include fever, lethargy, fatigue, weight loss, chest pain and shortness of breath. Treatment may include antibiotics or surgery.

■ PNEUMOTHORAX

Pneumothorax is the presence of air in the membrane that surrounds the lungs. When punctured or pierced, air from the lungs will enter the space. Symptoms include shortness of breath and chest discomfort. Pneumothorax can occur after a surgical procedure or chest trauma. A pneumothorax can develop from unknown reasons, as well. Treatment involves assessing the air leak from a chest film, or placement of a tube into the chest to relieve the trapped air.

INFECTIONS

■ PNEUMONIA

Pneumonia is a serious infection of the air sacs of the lungs. This infection can be caused by bacteria, viruses, fungi or protozoa. The lungs fill with infection and can make getting enough oxygen from the air difficult.

Contact your doctor if you have chills, fever, persistent cough, sputum production that may be yellow, green, or rust color, chest pain or shortness of breath. These are some of the most often seen signs.

The diagnosis of pneumonia is made by chest X-ray, sputum culture for bacterial growth, and a thorough examination and history by your doctor.

The treatment for bacterial pneumonia is early antibiotics. Viral infections are not treated with antibiotics. Other treatments are rest, fluids to prevent dehydration from fever, medication for severe cough, chest pain, fever, and supplemental oxygen if blood oxygen is low. Often, breathing treatments to open the airways with an inhaled form of medication will be ordered.

Prevention is often possible with a yearly influenza shot given in the fall. A pneumonia vaccine is available to fight pneumococcal pneumonia for high-risk patients. The most important preventive measure is good health habits, proper diet and hygiene, plenty of rest, regular exercise and stress management.

During flu season, it is wise to avoid large crowds and people who are coughing frequently. Always wash your hands frequently.

If you develop symptoms, don't wait. Call your doctor and get treatment early. Follow his orders and take all of your medication until it is gone to prevent relapse.

■ TUBERCULOSIS

Tuberculosis is a bacterial infection, usually in the lungs, caused by the *Mycobacterium tuberculosis* bacteria. It is airborne, and spread by an infected person sneezing or coughing, then unknowingly inhaled by others they contact. The disease usually infects the lungs, but can spread to other parts of the body. It is a worldwide health problem, but is better controlled in the United States because of our accessibility to health care, testing and treatment.

The skin test for TB is done frequently for health care workers and people traveling outside of the country. It is also done for people who exhibit symptoms or have been exposed to the disease. If the skin test is positive, it does not always mean an active infection of tuberculosis.

Some people carry inactive tuberculosis germs from a previous exposure, but have no active disease. If the PPD skin test is positive, you will need a physical examination, chest X-ray, and sometimes sputum cultures to determine if you have an active disease. The symptoms are usually cough, fatigue, weight loss, low-grade fever, night sweats, or chest pain. Some infected patients have only mild or no symptoms, and are not aware they have the disease.

A patient diagnosed with active disease is usually treated with a medication called Isoniazid for six months or more, and followed up with regular check-ups. There are other medications also available that may be used.

■ OTHER INFECTIONS

A common respiratory infection is influenza, or flu. There are many different virus strains that cause the flu, and most occur in the winter months. Most people recover from the flu quickly, but those with chronic diseases will often develop complications, which lead to further illness.

Histoplasmosis infection comes from exposure to infected birds, bats, or chicken droppings. It is more common in warm, moist environments and is usually a mild disease, but may leave scars on the lungs, which will show on X-rays.

LUNG MASSES & LUNG CANCER

Tumors in the lung can be benign or malignant. The factors that contribute to lung cancer are cigarette smoking, occupation, heredity and environment.

Benign tumors (or non-cancerous lung tumors) account for only about 10% of the occurrences. The cancerous lung tumors are either primary (those which originate in the lung) or metastatic (a result of the spread of a malignancy from another site in the body). The incidence of primary lung cancer is 10 times higher in cigarette smokers. Unfortunately, most lung masses are not discovered until late in the disease.

The treatment for lung cancer depends on the type of cell causing the disease and the stage of advancement. Surgery, chemotherapy, or radiation is the most common type of treatment.

INFORMATION ON MEDICINES



Medicine is important in the treatment and control of many types of heart, blood vessel and lung problems. Sometimes medicine alone can control symptoms so that no other procedures are necessary. To achieve control, you must follow your physician's instructions accurately and faithfully. Your medicine helps you, so continue to take it as directed.

Talking with Your Doctor

Keep your doctor notified of any changes in your health which may be related to a medicine you are taking. If you develop diarrhea, vomiting, nausea, loss of appetite, fatigue, dizziness, rash, sore throat, or any other prolonged symptom, tell your doctor. The doctor may be able to change the dose or prescribe a different medicine to relieve the problem. Do not change your dosage or medicine without talking to your doctor.

Your doctor should also be aware of any other medicines you are taking, including non-prescription drugs. Even antacids can have harmful interactions with other medicines. Never suffer in silence. Tell your doctor of any problems that might be adverse reactions to medicines.



Bring ALL medicines—even non-prescription ones—to EVERY visit in the doctor's office for a review of your overall medication plan.

Talking to Your Pharmacist

Your pharmacist can give you information concerning when and how to take your medicines, any side effects or reactions they may cause, and how to purchase and store them. When you fill all your prescriptions at one pharmacy, your pharmacist will be able to keep track of your "drug profile" and help you avoid harmful interactions. You should inform your pharmacist if you are allergic to any drugs or if you have any health problems such as heart disease, diabetes, high blood pressure, asthma or COPD. This information will become part of your medicine record.

GENERIC VS. BRAND NAME MEDICINES:

A “brand name” is a product name that a manufacturer has registered for copyright protection. The term “generic” refers to the chemical substance of the product without reference to the manufacturer. St. John’s carries only generics that the United States Food and Drug Administration has determined to be equivalent for all practical purposes to the trade-named product. For some brand name products, no suitable substitutes are available.



Taking Your Medicine the Right Way

Learn the names of all of your medicine and always check prescription labels carefully. Sometimes different companies manufacture the same drug, so your prescription may not always look the same. You should always check the name of the drug on the prescription label and consult your pharmacist if you have a question.

Understanding Directions

Taking your medicine on time ensures a steady supply of the drug to your system. Be sure you know what the directions on the container label mean. For example, if a medicine is to be taken three times daily, find out if that means after meals, between meals, or every eight hours throughout the 24-hour period.



If the directions confuse you, always ask for an explanation! Call your doctor.

Taking It All

Never stop taking a medicine just because you are feeling better. Stopping in the course of the medicine can cause adverse reactions. Call your doctor, who will advise you whether or not to continue taking it.

About Running Out

Never assume it is alright to go for a few days without your medicine. Plan ahead to make sure you have enough to last until your next appointment with the doctor. If you run out, call your doctor for instructions.

If You Cannot Afford Your Medicines

Tell your nurse if you cannot afford to have your prescriptions filled and they can determine if a generic version may be available.

YOUR DOCTOR MAY BE ABLE TO PRESCRIBE A LESS EXPENSIVE MEDICINE.

About Missing a Dose

If you forget to take your medicine, do not automatically double the next dose. Use the guidelines below if you forget a dose of medicine.

If you have any questions or concerns, your doctor and nurse want to help you. Please ask for any information you need or call St. John’s Health Information at 417-888-8888 or 1-800-909-8326. Your health is our vital concern, and we want to answer all of your questions.

Staying On Schedule

Maintaining the schedule your doctor has prescribed can be a challenge, especially when your medicines and dosages changes. Keep your medicines where you will see them often. Some people write their schedule on the calendar; others use pill boxes that hold medicines for a week. Other people get family and friends to help them stay on schedule. Talk to your nurse about ways to make sure you take the right medicine at the right time.



QUICK RELIEF BETA2-AGONIST

Medications

- **Albuterol HFA (ProAir, Proventil, Ventolin, Maxair (pirbuterol), Xopenex HFA (levalbuterol), Combivent HFA (ipratropium bromide and Albuterol sulfate)**

How Do These Medicines Work

Beta2-agonists are bronchodilator medicines that open airways by relaxing the muscles in and around the airways that tighten during an attack of shortness of breath.

How Are They Prescribed

Beta2-agonists come in many forms. There are also many ways to take them.

Beta2-agonists can be:

- Inhaled using a metered dose inhaler
- Inhaled using a nebulizer
- A powder-filled capsule that is inhaled by using a device called a dry powder inhaler
- Swallowed as a liquid or tablet, or
- Taken as shots

Inhaled beta2-agonists stop symptoms of COPD and asthma episodes. They are sometimes used in small doses (no more than three to four times a day) to keep daily symptoms under control.

Side Effects

Side effects include rapid heart beat, tremors, feeling anxious, and nausea. These side effects tend to leave as the body adjusts to the medicine. Serious side effects are rare, but may include chest pain, fast or irregular heart beat, severe headache or feeling dizzy, very bad nausea, or vomiting. Call your doctor right away if you have any of these symptoms.

Notes

- Inhaled medicines are the first choice. They begin to work within five minutes and have fewer side effects. The medicine goes right to the lungs and does not easily go into the rest of the body.
- Liquids or tablets begin to work within 30 minutes and last as long as four to six hours.
- A holding chamber or spacer device (a tube attached to the inhaler) can be attached to the inhaler to make it easier to use and can help arthritic or elderly patients use a metered dose inhaler.

- Using a nebulizer to take the medicine works the same way as using an inhaler. A nebulizer is easier to use than an inhaler. It is good for a child under age 5, for a patient who has trouble using an inhaler, or for a patient with severe shortness of breath.
- Beta2-agonists relieve symptoms, but they cannot reduce or prevent the swelling or inflammation that causes the symptoms. When you have to use a beta2-agonist to relieve symptoms every day or if you use it more than three or four times in a single day, your COPD may be getting much worse. You may need another kind of medicine, and you need to discuss this with your doctor right away.



LONG-ACTING BETA2-AGONIST

Medications

- **Serevent® Diskus® (salmeterol xinafoate), Brovana (arformoterol tartrate), Foradil (formoterol fumarate), Serevent is also contained in Advair Discus (fluticasone propionate and salmeterol) and in Advair HFA**

How Do These Medicines Work

It lasts up to 12 hours and may be particularly useful for people with COPD who have nighttime breathing problems. It is important to note that, unlike the short-acting beta2-agonists described above, all long acting beta2-agonists should NOT be taken to relieve an attack of shortness of breath. It does not provide rapid relief of your COPD symptoms. Instead, they should be used on a regular basis, all currently available long-acting beta2-agonist's are dosed twice daily).

Side Effects

Side effects from long-acting beta2-agonists may include shakiness, headache, nervousness, high blood pressure, flushing, and palpitations.



ANTICHOLENERGICS

Medications

- **Atrovent (ipratropium bromide), Spiriva (tiotropium bromide)**

How Does This Medicine Work

Atrovent (ipratropium) and Spiriva (tiotropium) another type of bronchodilator. They open up the air passages by relaxing the smooth muscles in the wall of the breathing tubes (bronchi) and makes the airways wider just like the beta bronchodilators (Proventil, Ventolin, albuterol) do. This allows air to move in and out of the lungs more easily. Anticholinergics works in a different way than the beta bronchodilators so its effects are not as quick as the beta bronchodilators. However, they begin to work within about 15 to 30 minutes. Atrovent is a reliever, lasting 4–6 hours. Spiriva is a maintenance medication lasting a day and a half for each dose. They are usually used in people who have smoking-related diseases of chronic bronchitis and emphysema. As a rule, they are not useful in asthma.

How They Are Prescribed

Anticholinergics are prescribed as metered dose inhalers, powder inhaler or as a solution for a nebulizer.

Side Effects

Side effects may include dryness of mouth, cough, dizziness, headache, feeling anxious or nervous, nausea, heart palpitations and temporary blurring of vision if sprayed into eyes.

Notes

- Anticholinergics will cause temporary blurring of vision if it accidentally gets sprayed into the eyes.
- Anticholinergics may be used alone or in combination with other bronchodilator inhalers
- Since Anticholinergics have a slower onset than many other inhaled bronchodilators, they are generally NOT used in an emergency. Combivent (Atrovent and Albuterol combined), may be used as well.



CROMOLYN (PREVENTER)

Medications

- Intal (cromolyn sodium)

How Do These Medicines Work

Cromolyn stabilizes the airways and aids in preventing swelling of the airways. Because of this action, it is sometimes called a preventer medicine. Since it is a preventive medicine, it will not help immediately in an

asthma episode. It needs to be given regularly to be effective.

What Form Does It Come In

It comes in a metered dose inhaler (puffer), a solution for a breathing nebulizer machine or a spinhaler.

What Are The Advantages and Disadvantages of the Different Forms

There is no oral form of cromolyn or nedocromil. Metered dose inhalers require exact coordination and can be used in adults and older children. Spinhalers deliver cromolyn in powder form. The difference between the spinhaler and metered dose inhaler (MDI) is that the MDI delivers a pre-set amount of medicine when pressed. You must start a breath and press the canister at the same time. The spinhaler doesn't start delivering the medicine until you start your breath. The spinhaler is sometimes easier to use and actually delivers a higher dose of medicine than the MDI. Serevent, Foradil, Advair and Spiriva are dry powders as well.

Side Effects

There are virtually no side effects with cromolyn or nedocromil. Occasionally, there may be dry cough, hoarseness or a bad taste in the mouth. This can be eliminated by drinking orange juice or a carbonated beverage after you take your dose. Using a spacer device also will help decrease the taste.



STERIODS (PREVENTERS/CONTROLLERS)

How Do These Medicines Work

These medicines act on the surface of the airways. Over a period of time, they reduce swelling and inflammation and allow other medicines to work better. It is important to use these medications regularly as directed in order to be effective. Inhaled steroids are preventive medicines and will not help during a sudden attack of tightness or wheezing. Inhaled steroids are also called "preventers" or "controllers" of asthma or bronchospasm.

Oral Steroids

- **Liquipred, Deltasone, Pelone, Medrol, Prednisone, Decadron**

In What Form Do They Come

Tablet, oral liquid, and solution for injection.

Are Oral Steroids Safe

Oral steroids can safely be given for short intervals up to twice a year with little or no side effects. However, long use over a period of months to years can produce some side effects in the body.

Side Effects

Short term use: Upset stomach, swelling, weight gain, fluid retention, mood swings, rounding of the face, sleep difficulties and better appetite. These will go away after the medicine has stopped.

Long term use: Cataracts, brittle bones, stunted growth, high blood pressure, muscle weakness. You should not stop taking this medicine without first talking to your health care provider.

Notes

- Follow your health care provider's directions about how to take (or give your child) the "burst" or short term dosing of steroids.
- When oral steroids are used to treat an asthma attack, they take about three hours to work and are most effective in six to 12 hours.
- Take oral steroids with food to decrease stomach irritation
- Try eating high fiber, low calorie food, (carrots, celery, etc..) if you crave food while on oral steroids. Limit your intake of salt or sodium which causes you to retain water if fluid retention is a problem while taking oral steroids.
- These steroids are not the same as steroids used by some athletes. Short term side effects do not damage your liver.

Inhaled Steroids

- **Azmacort (triamcirolone acetonide), Aerobid (flunisolide), Aerobid M, Pulmicort (budesonide), Flovent (fluticasone propionate), Qvar (beclomethasone dipropionate), Advair (fluticasone propionate and salmeterol), Asmanex (mometasone furoate)**

In What Form Do They Come

They come in metered dose inhalers or dry powder.

Side Effects

Because the inhaled steroids act on the surface of the airways, far fewer side effects occur than with the oral steroids. However, some less severe side effects can

occur. These include cough, hoarseness, and thrush, which is a yeast infection of the mouth and throat that appears as white patches.

What Can Be Done To Prevent The Side Effects

To prevent the hoarseness and thrush, it is important to rinse your mouth and spit after each use. A spacer device is recommended for all who take inhaled steroids. These devices allow the larger particles of medicine to settle and only the smaller ones remain which are then carried into the lungs. Azmacort comes with its own spacer device.



LEUKOTRIENE INHIBITORS & ANTAGONISTS (PREVENTERS)

Medications

- **Zafirlukast (Accolate), Montelukast (Singulair), Zileuton (Zyflo)**

How Do These Medicines Work

Unlike steroids which block the entire inflammatory process, leukotriene inhibitors and antagonists block a specific inflammatory pathway in asthma. Leukotrienes are one of the chemicals produced when the body has an inflammatory response. When a person with asthma is exposed to a trigger, these chemicals are responsible for the airway tightening and swelling and the increased production of mucus. The leukotriene inhibitor antagonist medications block or inhibit the action of these chemicals.

How Are They Prescribed

One of the big advantages of these medications is that they are taken orally, usually a single tablet one to two times per day. They need to be taken every day whether you are having symptoms or not. These medications prove to be more beneficial when used in combination with inhaled steroids for asthma management. These medications are approved by the FDA for the treatment of asthma. They are not approved by the FDA for the treatment of COPD, however, your doctor may evaluate you for the usefulness of these drugs on an individual basis.

Notes

- Take medication on a daily basis, even if you feel good. It can be taken safely with other asthma medicines.

- Accolate should be taken one hour before or two hours after meals. Singulair should be taken in the evening and may be taken without regard to food.
- Accolate affects the levels of the blood thinner, Coumadin. If you are taking this medication, the dosage of Coumadin may need to be adjusted by your health care provider.
- Bloodtests need to be checked when on Zylflo as it may effect liver function.

Side Effects

All medications can cause unwanted side effects in some people. In clinical trials where tests were performed on patients taking these drugs, the leukotriene inhibitors and antagonists were usually well tolerated. The most common side effects reported were headache and nausea.



THEOPHYLLINE BRONCHODILATOR (LONG-ACTING RELIEVER)

Medications

■ **Slo-bid, Theo-Dur, Theo-24, Slo-phyllin (liquid)**

How Does This Medicine Work

These medications are a weaker bronchodilator compared to the Beta agonist and Anticholinergics. In some cases, your doctor may want to add these medications to a regime to obtain better control of bronchospasm. Theophylline comes in tablet, capsule, liquid, and intravenous forms. Do not chew theophylline tablets or capsules because too much of the time-released medicine will be released all at once. Theophylline capsules may be opened and sprinkled on a small amount of sweet, soft food, such as yogurt, jelly, or honey to disguise the taste, but do not chew the beads that are in the capsule. Do not mix theophylline with hot food. This will dissolve the medicine and release too much in the body. It is best to take theophylline on an empty stomach (one hour before or two hours after a meal) with a full glass of water. However, if it upsets your stomach, ask your health care provider if you may take it with food. The dosages on each will vary depending on your needs. Follow the dosage your health care provider ordered for you.

Side Effects

Side effects are more common than for the other inhalers, and may include restlessness, nervousness, upset stomach, nausea, vomiting, loss of appetite, headache, insomnia, fast heartbeat and seizures.

Notes

- Theophylline must be taken regularly and spaced evenly over a 24-hour period. It usually takes about three days for the medication to reach the ideal level in your blood. Your health care provider may find it helpful to monitor the levels of theophylline. Keep your appointments for blood work. Never take extra doses of theophylline unless instructed to do so by your health care provider.
- Avoid large amounts of coffee, tea, colas, cocoa and chocolate. These foods may increase the stimulant effect of the medications since they all contain a chemical with effects similar to theophylline.
- Excessive side effects may mean there is too much medicine in your blood. Call your health care provider.
- Certain medications increase the amount of theophylline in your blood. Such medications include Tagamet, erythromycin, Cipro, and others. Always discuss the medication you are taking (including over-the-counter and “natural” medicines) with your health care provider when new medicines are being prescribed.
- If you have a fever, flu, or a lot of swelling in your feet or legs, notify your health care provider. In these situations, your health care provider may want to adjust your theophylline dosage.
- Do not change brands of theophylline (like switching to a generic brand) without first checking with your health care provider.
- Avoid smoking since it can make your asthma worse and can affect the amount of theophylline in your blood. Contact your health care provider if you start or stop smoking while taking theophylline.



CORRECT USE OF A DRY POWDER INHALER (DPI)

Medications

■ **Pulmicort Turbuhaler, Asmanex, Sprivia, Handihaler, Foradil Aerolizer**

Using an inhaler seems simple but it is more difficult than it looks. In fact, most patients do not use it the right way at first. With incorrect use, less medicine gets into your lungs and you won't be getting the full benefit of your medication.

Follow these simple suggestions if you are not familiar with the steps. Read them aloud as you do them or have someone read them to you. This helps you remember all the steps. Once you are more comfortable with the steps, have your health care provider check to make sure you are using your inhaler the right way. Foradil and Sprivia require the insertion of a capsule, containing dry powder, into the inhaler.

GENERAL STEPS FOR USING THE INHALER

1. Remove the cap and hold the inhaler upright
2. Turn base to right and return back to left until you hear a “click”
3. Tilt your head back slightly to open your airway
4. Take a deep breath in and then breathe all the way out
5. Inhale deeply and forcefully one to three seconds – hold in an upright or horizontal position when inhaling
6. Hold breath for 10 seconds
7. Repeat as directed, waiting 60 seconds between puffs.
8. Rinse mouth after administration to reduce side effects

Notes

- The medicine may taste slightly sweet because of the dry powder carrier for the drug
- A “low-dose” indicator will appear on the side of the device when 20 doses remain (for some of these only).



USING A METERED DOSE INHALER

Using a metered dose inhaler is a good way to take asthma medicines. There are few side effects because the medicine goes right to the lungs and not to other parts of the body. It takes only five to 10 minutes for the medicine to have an effect compared to liquid asthma medicines, which can take one to three hours. Inhalers can be used by all asthma patients age five and older. A spacer or holding chamber attached to the inhaler can help make taking the medicine easier for even younger children. These devices are helpful to people having trouble using an inhaler. The inhaler must be cleaned often to prevent buildup that will clog it and reduce how well it works. The guidelines that follow will help you use the inhaler the right way. Ask your doctor or nurse to show you how to use the inhaler.

Using the Inhaler

1. Remove the cap and hold the inhaler upright
2. Shake the inhaler
3. Tilt your head back slightly and breathe out
4. Use the inhaler in any one of these ways (A is the best way, but C is okay if you are having trouble with A or B.)
 - A. Open mouth with inhaler one to two inches away
 - B. Use spacer
 - C. In the mouth
5. Press down on the inhaler to release the medicine as you start to breathe in slowly

6. Breathe in slowly for three to five seconds
7. Hold your breath for 10 seconds to allow the medicine to reach deeply into your lungs
8. Repeat puffs as prescribed – waiting one minute between puffs may permit the second puff to go deeper into the lungs

Note: Dry powder capsules are used differently. To use a dry powder inhaler, close your mouth tightly around the mouthpiece and inhale very fast.

CLEANING

1. Once a day clean the inhaler and cap by rinsing it in warm running water. Let it dry before you use it again. Have another inhaler to use while it is drying
2. Twice a week wash the plastic mouthpiece with mild dishwashing soap and warm water. Rinse and dry well before putting it back

CHECKING HOW MUCH MEDICINE IS LEFT IN THE CANISTER

1. If the canister is new, it is full
2. An easy way to check the amount of medicine left in your metered dose inhaler is to place the canister in a container of water and observe the position it takes in the water

Spacers

Unless you use your inhaler the right way, much of the medicine may end up on your tongue, on the back of your throat, or in the air. Use of a spacer or holding chamber can help this problem.

A spacer or holding chamber is a device that attaches to a metered dose inhaler. It holds the medicine in its chamber long enough for you to inhale it in one or two slow deep breaths. The spacer makes it easy for you to use the medicines the right way (especially if your child is young or you have a hard time just using an inhaler). It helps you not cough when using an inhaler. A spacer will also help prevent you from getting a yeast infection in your mouth (thrush) when taking inhaled steroid medicines.

There are many models of spacers or holding chambers that you can purchase through your pharmacist or a medical supply company. Ask your doctor about the different models.

How to Use a Spacer

1. Attach the inhaler to the spacer or holding chamber as explained by your doctor or by using the directions that come with the product.
2. Shake well
3. Press the button on the inhaler – this will put one puff of the medicine in the holding chamber

- Place the mouthpiece of the spacer in your mouth and inhale slowly. (A face mask may be helpful for a young child.)
- Hold your breath for few seconds and then exhale. Repeat steps 4 and 5 two more times
- If your doctor has prescribed two puffs, wait between puffs for the amount of time he or she has directed and repeat steps 4 and 5

Use and Care of a Nebulizer

A nebulizer is a device driven by a compressed air machine. It allows you to take medicine in the form of a mist (wet aerosol). It consists of a cup, a mouthpiece attached to a T-shaped part or a mask, and then plastic tubing to connect to the compressed air machine.

IT IS USED MOSTLY BY THESE TYPES OF PATIENTS:

- Young children under age five.
- Patients who have problems using metered dose inhalers.
- Patients with severe lung disease.

A nebulizer helps make sure they get the right amount of medicine.

A routine for cleaning the nebulizer is important because an unclean nebulizer may cause an infection. A good cleaning routine keeps the nebulizer from clogging up and helps it last longer.

Directions for using the compressed air machine may vary (check the machine's directions), but generally the tubing has to be put into the outlet of the machine before it is turned on.

How to Use a Nebulizer

- Measure the correct amount of normal saline solution using a clean dropper and put it into the cup. If your medicine is premixed, go to step 3
- Draw up the correct amount of medicine using a clean eyedropper or syringe and put it into the cup with the saline solution. Once you know your number of drops, you can count them as a check on yourself
- Fasten the mouthpiece to the T-shaped part and then fasten this unit to the cup OR fasten the mask to the cup. For a child over the age of two, use a mouthpiece unit because it will deliver more medicine than a mask
- Put the mouthpiece in your mouth. Seal your lips tightly around it OR place the mask on your face
- Turn on the air compressor machine
- Take slow, deep breaths in through the mouth
- Hold each breath one to two seconds before breathing out
- Continue until the medicine is gone from the cup (approximately 10 minutes)
- Store the medicine as directed after each use

Cleaning the Nebulizer

Don't forget: Cleaning and getting rid of germs prevents infection. Cleaning keeps the nebulizer from clogging up and helps it last longer.

After Each Use

- Remove the mask or the mouthpiece and T-shaped part from the cup. Remove the tubing and set it aside. The tubing should not be washed or rinsed. Rinse the mask or mouthpiece and T-shaped part—as well as the eyedropper or syringe—in warm running water for 30 seconds. Use distilled or sterile water for rinsing, if possible
- Shake off excess water – air dry on a clean cloth or paper towel
- Put the mask or the mouthpiece and T-shaped part, cup, and tubing back together and connect the device to the compressed air machine. Run the machine for 10 to 20 seconds to dry the inside of the nebulizer
- Disconnect the tubing from the compressed air machine. Store the nebulizer in a ziplock plastic bag
- Place a cover over the compressed air machine

Once Every Day

- Remove the mask or the mouthpiece and T-shaped part from the cup. Remove the tubing and set it aside. The tubing should not be washed or rinsed
- Wash the mask or the mouthpiece and T-shaped part—as well as the eyedropper or syringe—with a mild dishwashing soap and warm water
- Rinse under a strong stream of water for 30 seconds. Use distilled (or sterile) water if possible
- Shake off excess water. Air dry on a clean cloth or paper towel
- Put the mask or the mouthpiece and T-shaped part, cup, and tubing back together and connect the device to the compressed air machine. Run the machine for 10 to 20 seconds to dry the inside of the nebulizer
- Disconnect the tubing from the compressed air machine. Store the nebulizer in a ziplock plastic bag
- Place a cover over the compressed air machine

Once or Twice a Week

- Remove the mask or the mouthpiece and T-shaped part from the cup. Remove the tubing and set it aside. The tubing should not be washed or rinsed. Wash the mask or the mouthpiece and T-shaped part—as well as the eyedropper or syringe—with a mild dishwashing soap and warm water
- Rinse under a strong stream of water for 30 seconds
- Soak for 30 minutes in a solution that is one part distilled white vinegar and two parts distilled water. Throw out the vinegar water solution after use; do not reuse it

4. Rinse the nebulizer parts and the eyedropper or syringe under warm running water for 1 minute. Use distilled or sterile water, if possible.
5. Shake off excess water. Air dry on a clean cloth or paper towel
6. Put the mask or the mouthpiece and T-shaped part, cup, and tubing back together and connect the device to the compressed air machine. Run the machine for 10 to 20 seconds to dry the inside of the nebulizer thoroughly
7. Disconnect the tubing from the compressed air machine. Store the nebulizer in a ziplock plastic bag
8. Clean the surface of the compressed air machine with a well-wrung, soapy cloth or sponge. You could also use an alcohol or disinfectant wipe. **NEVER PUT THE COMPRESSED AIR MACHINE IN WATER**
9. Place a cover over the compressed air machine



Medications

■ Serevent, Advair

Using an inhaler seems simple, but it is more difficult than it looks. In fact, most patients do not use it the right way at first. With incorrect use, less medicine gets into your lungs and you won't be getting the full benefit of your medication.

Follow these simple suggestions if you are not familiar with the steps. Read them aloud as you do them or have someone read them to you. This helps you remember all the steps. Once you are more comfortable with the steps, have your health care provider check to make sure you are using your inhaler the right way.

STEPS FOR USING THE INHALER

1. Slide cover to right to expose mouthpiece
2. Load the dose by sliding the green lever to right until you hear a "click"
3. Tilt your head back slightly to open your airway
4. Take a deep breath in and then breathe all the way out
5. Inhale deeply and forcefully one to three seconds. Hold in an upright or horizontal position when inhaling
6. Hold breath for 10 seconds
7. Rinse mouth after administration to reduce local adverse effects



Why Get Vaccinated?

Influenza ("flu") is a serious disease caused by a virus that spreads from infected persons to the nose or throat of others. Influenza can cause fever, sore throat, chills, cough, headache and muscle aches. Anyone can get influenza. Most people are ill with influenza for only a few days, but some get much sicker and may need to be hospitalized. Influenza causes an average of 36,000 deaths each year in the U.S., mostly among the elderly. Influenza vaccine can prevent influenza.

Influenza Vaccine

Two types of influenza vaccine are now available. Inactivated (killed) influenza vaccine, given as a shot, has been used in the United States for many years. A live, weakened vaccine was licensed in 2003. It is sprayed into the nostrils. Influenza viruses change often. Therefore, influenza vaccine is updated every year. Protection develops about two weeks after getting the shot and may last up to a year. Some people who get flu vaccine may still get flu, but they will usually get a milder case than those who did not get the shot.

Flu vaccine may be given at the same time as other vaccines, including pneumococcal vaccine. Some inactivated flu vaccine contains thimerosal, a form of mercury, as a preservative. Some contains only a trace of thimerosal. There is no scientific evidence that thimerosal in vaccines is harmful, and the known benefits of the vaccine outweigh any potential risk from thimerosal. If you have questions about thimerosal or reduced-thimerosal flu vaccine, ask your doctor.

Who Should Get Inactivated Influenza Vaccine

People six months of age and older at risk for getting a serious case of influenza or influenza complications, and people in close contact with them (including all household members) should get the vaccine.

AN ANNUAL FLU SHOT IS RECOMMENDED FOR:

- All children 6-23 months of age.
- Household contacts and out-of-home caretakers of infants from 0-23 months of age.
- People 50 years of age or older.
- Residents of long-term care facilities housing persons with chronic medical conditions.
- People who have long-term health problems with:
 - heart disease
 - kidney disease
 - lung disease
 - metabolic disease, such as diabetes
 - asthma
 - anemia, and other blood disorders
- People with a weakened immune system due to:
 - HIV/AIDS or another disease that affects the immune system
 - long-term treatment with drugs such as steroids
 - cancer treatment with x-rays or drugs
- People six months to 18 years of age on long-term aspirin treatment (these people could develop Reye Syndrome if they got the flu).
- Women who will be pregnant during influenza season.
- Physicians, nurses, family members, or anyone else coming in close contact with people at risk of serious influenza.
- Anyone else who wants to reduce their chance of getting influenza.

AN ANNUAL FLU SHOT SHOULD BE CONSIDERED FOR:

- People who provide essential community services.
- People at high risk for flu complications who travel to the southern hemisphere between April and September, or who travel to the tropics or in organized tourist groups at any time.
- People living in dormitories or under other crowded conditions, to prevent outbreaks.

When Should I Get Influenza Vaccine

The best time to get a flu shot is in October or November.

Some people should get their flu shot in October or earlier. This includes:

- Younger people at high risk from flu and its complications (including children six through 23 months of age).
- Household contacts of persons at high risk,
- Health care workers, and
- Children under nine years of age getting the flu shot for the first time.

Most people need only one flu shot each year to prevent influenza. Children under nine years old getting flu vaccine for the first time should get two doses. With the inactivated vaccine, these doses are given one month

apart. Children in this age group who got one dose the previous year, even if it was the first time they got the vaccine, need only one dose this year.

Some People Should Talk With a Doctor Before Getting Influenza Vaccine

TALK WITH A DOCTOR BEFORE GETTING A FLU SHOT IF YOU:

- ever had a serious allergic reaction to eggs or to a previous dose of influenza vaccine, or
- have a history of Guillain-Barre' Syndrome (GBS).

If you have a fever or are severely ill at the time the shot is scheduled, you should wait until you recover before getting the influenza vaccine. Talk to your doctor or nurse about whether to reschedule the vaccination.

What Are the Risks From Inactivated Influenza Vaccine

A vaccine, like any medicine, could possibly cause serious problems, such as severe allergic reactions. The risk of a vaccine causing serious harm, or death, is extremely small.

Serious problems from inactivated flu vaccine are very rare. The viruses in inactivated influenza vaccine have been killed, so you cannot get influenza from the vaccine.

MILD PROBLEMS:

- Soreness, redness, or swelling where the shot was given.
- Fever.
- Aches.

If these problems occur, they usually begin soon after the shot and last one to two days.

SEVERE PROBLEMS:

Life-threatening allergic reactions from vaccines are very rare. If they do occur, it is within a few minutes to a few hours after the shot.

In 1976, swine flu vaccine was associated with a severe paralytic illness called Guillain-Barre' Syndrome (GBS). Influenza vaccines since then have not been clearly linked to GBS. However, if there is a risk of GBS from current influenza vaccines, it is estimated at one or two cases per million persons vaccinated... much less than the risk of severe influenza, which can be prevented by vaccination.

What if There is a Moderate or Severe Reaction – What Should I Look For

Any unusual condition, such as a high fever or behavior changes. Signs of a serious allergic reaction can include difficulty breathing, hoarseness or wheezing, hives, paleness, weakness, a fast heart beat or dizziness.

What Should I Do

Call a doctor, or get to a doctor right away.

Tell your doctor what happened, the date and time it happened, and when the vaccination was given.

Ask your doctor, nurse, or health department to report the reaction by filing a Vaccine Adverse Event Reporting System (VAERS) form.

Or you can file this report through the VAERS web site at www.vaers.org, or by calling 1-800-822-7967. VAERS does not provide medical advice.

How Can I Learn More

Ask your doctor or nurse. They can give you the vaccine package insert or suggest other sources of information.

Call your local or state health department.

Contact the Centers for Disease Control and Prevention (CDC):

- Call 1-800-232-2522 (English)
- Call 1-800-232-0233 (Español)
- Visit CDC's website at www.cdc.gov/flu



PNEUMONIA

Why Get Vaccinated

Pneumococcal disease is a serious disease.

Pneumococcus is the most common bacteria to cause pneumonia in the USA. In fact, pneumococcal disease kills more people in the United States each year than all other vaccine-preventable diseases combined. Anyone can get pneumococcal disease. However, some people are at greater risk from the disease. These include people 65 and older, the very young, and people with special health problems such as alcoholism, heart or lung disease, kidney failure, diabetes, HIV infection, or certain types of cancer.

Pneumococcal disease can lead to serious infections of the lungs (pneumonia), the blood (bacteremia), and the covering of the brain (meningitis). About one out of every 20 people who get pneumococcal pneumonia dies from it, as do about two people out of 10 who get bacteremia and three people out of 10 who get meningitis. People with the special health problems mentioned above are even more likely to die from the disease.

Drugs such as penicillin were once effective in treating these infections, but the disease has become more resistant to these drugs, making treatment of pneumococcal infections more difficult. This makes

prevention of the disease through vaccination even more important.

Pneumococcal Polysaccharide Vaccine (PPV)

The pneumococcal polysaccharide vaccine (PPV) protects against 23 types of pneumococcal bacteria. Most healthy adults who get the vaccine develop protection to most or all of these types within two to three weeks of getting the shot. Very old people, children under two years of age, and people with some long-term illnesses might not respond as well or at all.

Who Should Get PPV

- All adults 65 years of age or older.
- Anyone over two years of age who has a long-term health problem such as:
 - heart disease
 - lung disease
 - sickle cell disease
 - diabetes
 - alcoholism
 - cirrhosis
 - leaks of cerebrospinal fluid
- Anyone over two years of age who has a disease or condition that lowers the body's resistance to infection, such as:
 - Hodgkin's disease
 - lymphoma, leukemia
 - kidney failure
 - multiple myeloma
 - nephrotic syndrome
 - HIV infection or AIDS
 - damaged spleen, or no spleen
 - organ transplant
 - long-term steroids
 - certain cancer drugs
 - radiation therapy
- Alaskan Natives and certain Native American populations.

How Many Doses of PPV are Needed

Usually one dose of PPV is all that is needed. However, under some circumstances a second dose may be given.

A second dose is recommended for those people aged 65 and older who got their first dose when they were under 65, if five or more years have passed since that dose.

A SECOND DOSE IS ALSO RECOMMENDED FOR PEOPLE WHO:

- have a damaged spleen or no spleen.
- have sickle-cell disease.
- have HIV infection or AIDS.
- have cancer, leukemia, lymphoma, multiple myeloma.
- have kidney failure.
- have nephritic syndrome.
- have had an organ or bone marrow transplant.
- are taking medication that lowers immunity (such as chemotherapy or long-term steroids).

Children 10 years old and younger may get this second dose three years after the first dose. Those older than 10 should get it five years after the first dose.

Other Facts about Getting the Vaccine

Otherwise healthy children who often get ear

infections, sinus infections, or other upper respiratory diseases do not need to get PPV because of these conditions.

PPV may be less effective in some people, especially those with lower resistance to infection. These people should still be vaccinated, because they are more likely to get seriously ill from pneumococcal disease.

Pregnancy: The safety of PPV for pregnant women has not yet been studied. There is no evidence that the vaccine is harmful to either the mother or the fetus, but pregnant women should consult with their doctor before being vaccinated. If possible, women who are at high risk of pneumococcal disease should be vaccinated before becoming pregnant.

What are the Risks of PPV?

PPV is a very safe vaccine. About half of those who get the vaccine have very mild side effects, such as redness or pain where the shot is given. Less than 1% develop a fever, muscle aches, or more severe local reactions. Severe allergic reactions have been reported very rarely.

As with any medicine, there is a very small risk that serious problems, even death, could occur after getting a vaccine. Getting the disease is much more likely to cause serious problems than getting the vaccine.

What if There is a Serious Reaction – What Should I Look For

Severe allergic reaction (hives, difficulty breathing, shock).

What Should I Do

Call a doctor, or get to a doctor right away.

Tell your doctor what happened, the date and time it happened, and when the vaccination was given.

Ask your doctor, nurse, or health department to file a Vaccine Adverse Event Reporting System (VAERS) form, or call VAERS yourself at 1-800-822-7967.

How Can I Learn More

Ask your doctor or nurse. They can give you the vaccine package insert or suggest other sources of information.

Call your local or state health department

Contact the Centers for Disease Control and Prevention (CDC):

- Call 1-800-232-7468 (English)
- Call 1-800-232-0233 (Spanish)
- Visit CDC's website at <http://www.cdc.gov/nip>



OXYGEN & YOUR BODY

Oxygenation

Everything in the body needs oxygen to function properly. The lungs take oxygen from the air and put it into the blood. The blood delivers oxygen to each muscle, organ, and tissue. If lung tissue is damaged, or an infection is present, oxygenation can be impaired. Generally, our bodies use more oxygen walking and exerting, than we do sitting still or at rest. Talking and eating are activities that are considered a resting state, although, surprisingly, these too take oxygen to be able to perform. Trained medical staff can test the amount of oxygen in your body by using an external machine, called a pulse-oximeter, or by drawing blood from an artery. One thing is certain; if the lungs are unable to make enough oxygen for your body, then supplemental oxygen is needed. Supplemental oxygen is given as a treatment in many different lung disorders.

Home Oxygen

Your doctor may order oxygen for use in the home based on tests that determine how much oxygen your body is using at rest and with exertion. Supplemental oxygen is not addictive. It is necessary for life. The use of oxygen does not lead to an increasing need for oxygen.

Supplemental oxygen is a medication and requires a doctor's order. Because oxygen is considered a drug, it is very important for you to follow the liter flow your doctor has prescribed for you. Do not turn up your oxygen flow without contacting your doctor's office, as higher than necessary flow could be harmful to some patients.

SYSTEMS OF OXYGEN FOR HOME USE

PRESSURIZED GAS

Pressurized gas oxygen is the most common kind of oxygen delivered to the home. Each individual receives a concentrator oxygen machine. A concentrator is an electrically powered device that separates oxygen out of room air. A plastic hose delivers oxygen to the nose from the oxygen source. This machine plugs into the electric outlet and makes oxygen constantly. This device requires minor monthly maintenance, such as cleaning a small air filter. The second device will be a portable oxygen tank. It should be placed upright in a wheeled cart, while in use. For safety reasons, this tank must be refilled by your oxygen company when it is empty. There are two dials on each tank. One shows the amount of pressure that is left in the tank. The other window is to set the liter flow, according to your prescription. For active individuals, there are shoulder bag units on the market. This consists of a small metal tank, in a lined shoulder bag. Ask your oxygen supply company if you are interested. Oxygen conserving devices are small external units that fit on the outside of the metal oxygen tank. These devices deliver oxygen only when the individual breathes in, therefore, leaving more oxygen in the tank to be consumed at a later moment. Individuals requiring high flow oxygen may not be good candidates for this device. A healthcare professional will need to assess your breathing to see if this device is right for you.

LIQUID OXYGEN

Liquid oxygen devices offer an in-home unit and a portable unit. This type of oxygen differs in the fact that one can refill their portable units at home from a larger unit, called a vessel. The vessel does not use electricity. Liquid oxygen may last longer than conventional oxygen gas tanks. This type of oxygen is delivered to the body by a plastic hose as well. Liquid oxygen tanks are encased in a hard plastic shell. This system also has an oxygen conserving option, sometimes built into the device itself. Ask your doctor if a liquid oxygen system is the best for your lifestyle.

The oxygen may cause your nose or mouth to become dry. Do not apply lotion or petroleum jelly to the nasal area. These products are flammable. You may use water based products such as KY jelly or normal saline spray to aid nasal dryness.

SAFETY AND OXYGEN

1. Oxygen supports combustion, that means absolutely no smoking!
2. Keep oxygen 10 feet away from an open flame.
3. Oxygen is combustible, when not handled properly it can cause harm
4. Do not use aerosol sprays while wearing oxygen, other than medical inhalers
5. There are several options available to travel with oxygen safely.

Traveling with Oxygen

Traveling with oxygen requires planning. Be sure to have copies of your oxygen prescription from your doctor. Communicate to your home health oxygen service where you are going and how you are traveling. Ask them the best way to acquire new oxygen when you reach your destination. Some companies have offices across the country.

Traveling by Car

If traveling by car, place the oxygen tank/unit in a secured holder. The oxygen tank in use can be placed in the front or back seat of the car. Secure the oxygen tank in a seatbelt to avoid shifting. Always keep an extra oxygen tank accessible. Do not store oxygen tanks in the trunk of a car. Smaller portable oxygen concentrators are available for long distance travel.

Traveling by Bus or Train

Confirm your travel schedule a few days before departure. Request to be seated in a non-smoking area. Notify staff of your oxygen needs.

Traveling by Plane

Upon making a reservation, notify the airline of your medical condition and oxygen requirements. Personal oxygen tanks are not allowed in the cabin of the plane, although airlines will supply an oxygen system for a fee. Airlines will require a copy of your oxygen prescription. Some companies also request a medical history form. Request a seat in the non-smoking section, if booking an international flight. Consider delays. Allow at least 60 extra minutes of oxygen supply. Individuals should use their own equipment only for boarding and deplaning the aircraft. High elevations can change oxygenation in the body. At high altitudes, the atmospheric pressure is lower and the air is thinner. Discuss your travel plans with your physician to see if you require more external oxygen while in flight.

Traveling by Cruise Ship

To travel with oxygen, most ships require four to six weeks notice. Be prepared to provide a medical history, oxygen prescription, and a letter from your physician. When making the initial reservation, ask the cruise line their policy on oxygen. You might need to arrange for oxygen tanks/units to be delivered to the cruise ship prior to boarding.



EXERCISE FOR LIFE

Why Exercise?

One of the best things you can do for yourself is to increase your level of physical activity. Regular exercise helps you feel less stressed, and improve heart function and endurance. You may have tried to exercise but had to stop due to shortness of breath. You may feel too tired to do the things you like to do. You may have been ill or in the hospital and your body has gotten weak and does not function as well. You may feel like you can't exercise at all due to muscle weakness, fatigue and shortness of breath. The good news is all these symptoms can be improved through a regular exercise program. Exercise helps your muscles become more efficient at extracting oxygen from the blood. The muscles then need less oxygen once they are in better condition. You benefit by feeling less short of breath and less tired.

Benefits of Exercise

- Improves the performance of your lungs and heart.
- Allows activities of daily living to be accomplished with less shortness of breath.
- Helps control your weight by increasing your metabolism.
- Improves flexibility and range of motion.
- Lowers your risk of developing non-insulin dependent diabetes.
- Helps control blood sugar levels in individuals with diabetes.
- Reduces your risk of developing some cancers.
- Increases your HDL (good) cholesterol.
- Helps build and maintain healthy bones, muscles and joints.
- Helps prevent osteoporosis.
- Increases mental alertness.
- Helps reduce symptoms of depression and anxiety.
- Helps you handle stress more effectively.
- Improves quality of sleep as well as your ability to fall asleep.
- Prevents or delays the development of high blood pressure.
- Reduces blood pressure in those who already have high blood pressure.

Safe Exercise

- Talk with your doctor before beginning an exercise program.
- Exercise only if feeling well. Do not exercise through a cold, flu or fever.
- Avoid exercise right after a meal. Exercising too soon can cause cramps, nausea or fainting.
- Pace yourself and start slow. Try one activity at a time to see how your body will respond.
- Drink plenty of water before, during and after exercise.
- Avoid caffeine and cigarettes.
- Do not exercise outdoors if the temperature is below 40 or above 80 degrees. Also consider humidity when exercising, as it can increase your feelings of shortness of breath.
- Exercise on flat ground.
- Listen to your body. It is okay to stop and rest.
- If you remain fatigued for more than one hour after your exercise, you have worked too hard.
- Talk to your doctor if you are not feeling well.

Flexibility

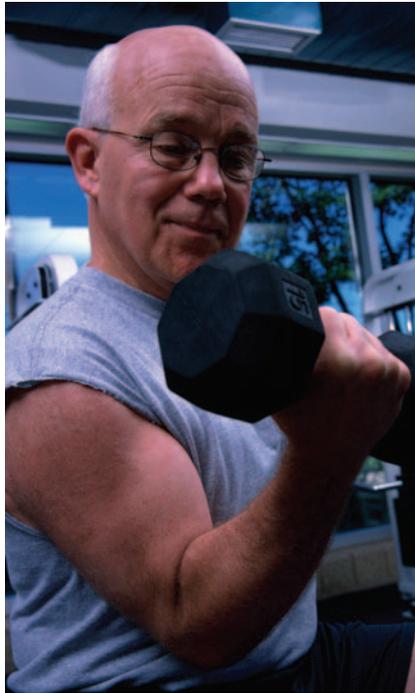
- Daily stretching to improve range of motion and flexibility is important to keep muscles and joints loose.
- Make sure to stretch before and after you exercise.
- Hold each stretch, without bouncing, for 10-30 seconds.
- Only stretch until there is gentle tension. Do not stretch to the point of pain.

Aerobic Exercise

- Pick convenient exercises or equipment.
- Choose an exercise that you enjoy, such as walking or biking.
- Try different activities on different days to reduce boredom.
- You can exercise alone or with a group.
- You can exercise indoors or outdoors, depending on the weather. During high humidity or temperature extremes, try the mall, an exercise facility or your home.

Muscle Strengthening

1. Muscle strength is important to help complete your daily activities.
2. Strengthening also helps to prevent falls and improve balance.
3. You can use free weights, elastic bands or tubes, weight training machines, or household items such as a can or a bag of frozen vegetables.
4. Do resistance exercises two to three days a week with at least one day of rest between.
5. Do one exercise for each of the major muscle groups.
6. Start with a light weight that you can lift 8-10 times.
7. Increase your weight gradually.
8. Remember to breathe normally during lifting.
9. Always use slow, controlled movements.
10. Do not lift through pain.



Muscle strength is important to help with your daily activities.



The goal is to work at an intensity in which you rate the exercise between 11 and 13 on the scale.

Improving Activities of Daily Living

1. Use a riding lawn mower instead of a push mower.
2. Buy electric clippers instead of hand tools.
3. Sit on a stool while ironing, washing dishes or preparing meals.
4. Ask family members to help with household chores.
5. Use a long-handled brush for cleaning, to avoid bending.
6. Keep items where they can easily be reached.
7. Use a chair or stool to sit during a shower instead of standing or taking a bath.
8. Push, pull or roll objects rather than carrying them.
9. Sit on a stool and support arms on counter top when setting hair or shaving.
10. Set the laundry basket on a chair to avoid bending.

Rating of Perceived Exertion

One way to determine how hard you are working is the Rating of Perceived Exertion scale. This allows you to rate how hard the exercise is.

How long should I exercise?

Start with a few minutes of exercise and work up to five minutes. If you are able, build up slowly, adding one to two minutes at a time. The goal is to reach 20-60 minutes of aerobic exercise. If needed, you can break up your exercise sessions into two to three shorter sessions throughout the day to prevent fatigue.

How often should I exercise?

If you are just beginning an exercise program, start with three days a week, with at least one day of rest between. When you are comfortable with your exercise, increase to four, and then to five days a week.

How hard should I exercise?

“No pain, no gain” is not a true statement. Exercise should be moderate; not too hard and not too easy. It is normal to experience some shortness of breath with exercise, but pursed-lip breathing will help minimize this. It is important to listen to your body and stay within your limits. Remember to start slow and end slow with each exercise session.



DEVICES & TECHNIQUES

PEP Therapy

Positive Expiratory Pressure, or PEP therapy, is used to help mobilize secretions and reduce air trapping in patients with COPD, or pulmonary conditions that produce large amounts of mucus. PEP therapy may also prevent or reverse atelectasis and optimize delivery of bronchodilators.

The equipment is portable and PEP therapy can be performed anywhere. PEP therapy is helpful when performed for 20 minutes each session, and right after a bronchodilator.

SMI

Incentive Spirometry, also known as Sustained Maximal Inspiration (SMI), is a technique used to encourage a patient to take a maximal inspiration. It is designed to mimic natural sighing or yawning by encouraging the patient to take long, slow, deep breaths. With repetition, and as part of an overall bronchial hygiene program, SMI maneuvers may reverse lung atelectasis and restore and maintain the airway.

Indications: Upper-abdominal or thoracic surgery, prolonged bed rest, surgery in patients with chronic obstructive pulmonary disease, a lack of pain control, or the presence of thoracic or abdominal binders.

Flutter Valve

Portable and easy to use, the flutter device effectively removes harmful secretions from the airway of patients with mucus-producing respiratory conditions. Three mechanisms of action help promote secretion removal: positive expiratory pressure, which helps hold airways open; airway oscillation, which helps vibrate mucus away from airway walls; and intermittent flow acceleration, which helps push mucus upward for expectoration. The device is shaped like a pipe and has a hardened plastic mouthpiece at one end, a perforated plastic cover at the other end, and a stainless steel ball resting in a plastic circular cone on the inside. It is designed for patients with bronchitis, cystic fibrosis, atelectasis or other conditions producing retained secretions.

Controlled Coughing Technique

Coughing is a natural way to clean and keep your lungs healthy. Your lungs produce mucus every day. This mucus acts as a filter to help keep your lungs free of small particles of dust, smoke, etc. that you may inhale.

Controlled coughing can help you remove mucus from your lungs without increasing your shortness of breath or increasing your work of breathing.

PANIC CONTROL

Do you sometimes feel you can't get your breath? Do you huff and puff when you climb stairs or work hard? Do you awaken at night feeling breathless?

When you are short of breath, you may feel nervous and try to breathe faster. More air may get trapped in your lungs, and then you feel worse. In panic situations, stop what you are doing and use your power of concentration to slow down your breathing.

CONTROLLING YOUR BREATHING:



(Works best for those with obstructive lung disease)

**Don't gasp for air.
Instead follow these steps.**

- Relax. Let your neck and shoulders droop.
- Breathe in slowly.
- Purse your lips in a whistling position, and blow slowly and evenly. Try to take at least twice as long to blow out as you did breathing in.
- Relax. Repeat the pursed-lip breathing until you no longer feel breathless. If you get dizzy, rest for a few breaths.

TECHNIQUE

1. Sit up and lean forward.
2. Take a slow deep breathe and hold for two seconds.
3. Cough two times. First cough is to loosen the mucus. Second cough is to move the mucus forward. Try not to breathe in-between coughs. Try to cough slowly and not too deep.
4. Wait one second and gently inhale again and cough.
5. Relax.
6. Repeat as needed.

Wheezing

Wheezing is the noise you hear when air is unable to move, due to partially blocked air tubes (bronchi). Wheezing usually occurs when you breathe out.



YOU MAY WHEEZE BECAUSE:

- The muscles around your air tubes are irritated and they start to squeeze, like a rubber band (asthma).
- You have an increased amount of mucus in you airways creating plugs (bronchitis).
- With emphysema, small airways (lung sacs) collapse.
- If your body retains fluid, causing the lining in your airways to swell.
- Infection or irritation.

What to do when wheezing is out of control:

1. Start by doing pursed lip breathing, (remember this is a relaxing exercise). Breathe in through your nose and exhale through puckered lips.
2. Take your rescue inhaler (prescription bronchodilator, such as Albuterol or Combivent). Bronchodilators help relax the muscles around your airways.
3. Drink appropriate amounts of water.

INFORMATION ON NUTRITION: EATING TO FEEL BETTER



A well-fed body is better able to fight infection and prevent illnesses. Even if we do become sick, a well-nourished body responds more quickly and heals faster.

Protein In Your Diet

We lose cells each day from our skin, digestive tract and lungs that have to be replaced. Protein is needed for these cells to grow and rebuild.

■ **SOURCES:** Lean beef, pork, poultry, fish, eggs, beans, nuts, peanut butter, milk, cheese, yogurt and tofu are all good sources of protein.

As we get older, our appetite often changes and foods do not taste as well, or we don't feel like preparing a meal. If adequate protein and calories are not eaten, we lose vital muscle mass that helps us feel energetic, pumps our blood, strengthens our immune system and helps us breathe. It is important to include five to seven of these foods each day.

FOODS LIKE:

- 1 ounce beef, pork, poultry, or fish
- 1 egg or 2 egg whites or 1/4 cup of egg substitute
- 1/2 cup dry cooked beans
- 2 tablespoons peanut butter
- 1/3 cup nuts
- 1/2 cup tofu
- 1 ounce cheese
- 1/4 cup cottage cheese
- 2 T peanut butter
- 1/2 cup cottage cheese
- 3 ounces beef sirloin

In addition to supplying protein, lean meats and beans also supply iron and zinc. Iron is needed to transport oxygen from the lungs to all parts of the body. Foods high in iron are red meat, turkey breast, dried fruits, spinach and iron fortified cereals such as Cream of Wheat or Total. Zinc is a mineral associated with the sense of taste, smell and helps fight illness. Nuts, whole grains and cereals are also good sources of zinc.

Calcium In Your Diet

Calcium is a mineral many people do not get enough of. It is needed for bones, teeth, nerve and muscle function and for blood to clot. These foods also supply vitamin D which is needed for the absorption of calcium.

■ **SOURCES: Milk and yogurt are the best sources of calcium.**

You may have heard that dairy foods promote mucous formation which is not actually the case. After drinking milk, mucus may appear thicker due to a coating effect which can be reduced by drinking something warm like hot tea with lemon, something acidic such as orange juice, or by rinsing the mouth out with water.

As we get older, our digestive system tends to slow down and we may not be able to drink milk without excess gas or cramping. To avoid this, try drinking smaller amounts, combining milk with a meal or snack or eating yogurt or cheese.

INCLUDE TWO TO THREE SERVINGS OF THESE FOODS EACH DAY:

- 1 cup milk
- 1 cup yogurt
- 1 1/2 ounce cheese
- 1 1/2 cup ice cream
- 1 cup frozen yogurt
- 1 cup pudding
- 1 1/2 cup turnip greens
- 1 cup fortified orange juice
- 2 cups cottage cheese

Fiber and Vitamin B In Your Diet

Many people believe bread is fattening, but often it is the butter, mayonnaise or other toppings we add to breads that increase the calories. Fiber is found only in plant foods and is an important part of our diet to help with digestion. Whole grains, cereals and breads also contain B vitamins which help in processing the foods we eat. In addition these foods are also a good source of zinc, the healing mineral. Try to include six to 11 servings per day depending on your calorie need.

■ **SOURCES: Oatmeal, whole wheat bread, crackers, noodles, rice and barley are grain foods which are also good sources of fiber and B vitamins.**

FOR INSTANCE A MINIMUM OF SIX SERVINGS WOULD BE:

- 1/2 cup oatmeal for breakfast
- 1 slice toast for breakfast

- 1/2 cup brown rice or pasta with lunch
- 4 whole grain crackers for snack
- 1 tortilla or roll with evening meal

Fruits and Vegetables In Your Diet

Fruits and vegetables are also an important source of fiber as well as vitamins and minerals. Vitamin C and vitamin A are very important in fighting infections. Both vitamins help build strong skin and lung cells which create a healthy barrier against bacteria.

Vitamin C is not stored in the body so a daily source is recommended.

■ **SOURCES: oranges, honeydew melon, grapefruit, cantaloupe, kiwi fruit, pineapple, tomatoes, raspberries, cauliflower, tangelo, strawberries, peppers**

Vitamin A foods should be eaten at least every other day.

■ **SOURCES: peaches, nectarines, apricots, prunes, sweet potatoes, tangerines, squash, mandarin oranges, carrots, tomatoes, cantaloupe, mangoes, spinach, watermelon**

Because of the cancer fighting properties of fruit and vegetables, a minimum of five servings up to nine servings are recommended each day.

FOR EXAMPLE:

- banana on cereal for breakfast
- orange for morning snack
- peaches for lunch
- 1 cup of cooked vegetables for evening meal
(1/2 cup of cooked vegetables = 1 serving.)

For some people certain fruits and vegetables such as raw broccoli, cauliflower, green peppers, onions or brussel sprouts can cause gas. If a certain food causes discomfort, reduce the amount you eat. Cooking vegetables and fruits (such as stir frying apples) may help prevent this discomfort. In addition, cutting into small pieces or choosing dried fruits can be helpful in preventing problems from gas and problems with chewing. Some dried fruits have sulfites added to preserve freshness; so read all food labels if allergic to sulfites.

Water In Your Diet

It is important to maintain a high fluid intake to keep mucus thin and to help fiber foods do their job. This means drinking plenty of water, juices and lowfat milk

and not coffee, soda pop or tea. Caffeine pulls water away from the body and can interfere with medications. Drinking carbonated beverages or using a straw may create excess air in the stomach which prevents the lungs from expanding properly, making it harder to breath. Drink before you feel thirsty, as thirst is not a good indicator of how much water your body needs. Lemon, lime or orange slices can be placed in ice water for added taste.

Controlling Your Portions

Eating too many high calorie foods and not being aware of portions can result in unwanted weight gain, making it more difficult to breath. Pay attention to serving sizes previously mentioned and on food labels. Generally, higher fat foods have more calories per volume.

To avoid excess calories, reduce salad dressings, gravies, sauces, butter, margarine, fried foods, cheese, ice cream, sour cream, cream cheese, nuts and peanut butter.



Drink before you feel thirsty, as thirst is not a good indicator of how much water your body needs. You should be drinking six to eight glasses a day.

Flavor foods with spices, herbs, vinegar and lemon or lime juice rather than bacon grease and butter.

On the other hand, to increase weight, include these dense calorie foods. Snack on peanut butter, cheeses, unsalted nuts and sunflower seeds. Add extra margarine to your vegetables, add peanut butter to an apple, snack on cheese and crackers or sunflower seeds mixed with raisins or other dried fruits, or fry fish or potatoes in canola oil. All of these will add calories.

Patients with severe lung disease may find it helpful to eat more frequent, smaller meals throughout the day. An average of five to six meals can decrease the sense of shortness of breath.

Sodium In Your Diet

Sodium is needed by the body but most Americans get more sodium than is needed. Excess sodium causes our bodies to retain fluids, much like a sponge. This makes it harder for our heart and lungs to pump oxygen to all our body parts. A maximum of 2400 milligrams (2.4 grams) of sodium is recommended per day. If you are eating out often, having canned soups, canned vegetables, pickles, ham, bologna, cottage cheese and deli meats you may be taking in too much sodium. Limit these foods and instead of adding salt for cooking and seasoning, use garlic powder, onion powder, lemon or lime juice and vinegar for seasoning.

Read food labels for sodium content, trying to choose foods with less than 140 mg per serving.

For example: A serving of Triscuit crackers contain 180 mg of sodium while a serving of Low Sodium Triscuit crackers contain 75 mg of sodium.

NOTES

QUICK MEAL AND SNACK SUGGESTIONS

Soup or stew, tuna fish, salmon patties, baked white or sweet potato, cereal with milk, banana or raisins, fruit with peanut butter or cheese, yogurt topped with granola or nuts, spaghetti, frozen waffles with peanut butter or yogurt, chili, crackers with cheese or peanut butter.

Make a grocery list before shopping for your foods based on what you plan to prepare and eat during the week. Don't forget to add quick items in case there are days you don't feel like cooking.

Most of us have times when we feel better, or have more energy. Take advantage of these times to do the most meal preparation such as washing and slicing fresh vegetables to keep handy in the refrigerator or to add to soups, stirring puddings on the stove top, or cooking larger quantities and freezing for later use. Also, take advantage of cooking equipment such as a microwave, crockpot, grill or oven to bake a complete meal.

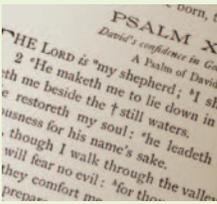
When serving or eating your meals, make the atmosphere as relaxed as possible. Allow a few minutes to rest just before sitting down to eat, turn off the television and set the table out of view of the dirty pots and pans. Spruce up the table with a pretty tablecloth, a favorite picture, dried silk or fresh flowers or a basket of fruit to help make the atmosphere a little more special. The more relaxed we are while eating the easier our bodies will digest the meal.

Our goal for everyone is to include a variety of foods in order to obtain all the nutrients our body requires. Take control of your nutrition! It is an ongoing commitment that results in improvement over a period of time. Remember we have developed our habits, healthy or otherwise, over a lifetime. Therefore, it will take a while to make any new changes. Stick with it! Permanent change takes effort and time.



Take advantage of times when you are feeling good to do the most meal preparation. Such as washing and slicing fresh vegetables to keep handy in the refrigerator or to add to soups, stirring puddings on the stove top, or cooking larger quantities and freezing for later use.

INFORMATION ON SPIRITUAL AND EMOTIONAL ADJUSTMENTS



Sometimes life has a way of surprising us with unexpected events. It seems that these events often appear just when life is going smoothly. Or maybe they come along as part of a “pile-up” of problems.

When the unexpected comes along, our minds are often filled with questions. We are prone to ask “Why me?” This is a natural reaction to a health crisis. This is because we are more than just physical beings. In addition to our physical nature, we are also capable of feeling many emotions that will surface when a physical challenge appears. There is the third aspect to our human nature that is important. We have a spiritual part of our nature.

We Are More Than Our Bodies

When we are aware of all parts of who we are, it becomes easier to allow those three parts to work together as we cope with any challenge that may come along.

Coping with Feelings

Dealing with changes and limitations in your lifestyle can lead you to ask serious questions about the direction of your life.

(Strong emotions are inevitable when you are immersed in a time of stress and change.) It's natural to feel that your life is out of control.

Denial

Sometimes our initial reaction to illness is “denial.” We experience disbelief and shock. “I can't believe this is happening to me. Surely this is just a bad dream. I'll wake up in the morning and everything will be all right.” But when

OUR HUMAN NATURE IS COMPOSED OF THREE PARTS

- **The Physical** – Our Body
- **The Emotional** – Our Feelings
- **The Spiritual** – Our Spirit or Soul

morning comes, we find that things are not normal. Denial is a common first reaction to fears of becoming dependent or inactive. Other emotions follow.

Anger

Sometimes God is the first one to get the blame. We may get angry with an individual who had some part in what happened. Sometimes people around us, our family, or co-workers may feel the brunt of our anger even though we are not angry with them. Sometimes we may even become angry with ourselves because we, ourselves played some part in our illness.

Anxiety & Guilt

Unfortunately, things that happen to us may be the result of our individual behavior. Over-eating results in obesity. Abusing alcohol can result in liver problems. Smoking leads to pulmonary problems. When our own behavior results in physical problems, we can be plagued by guilt, remorse and grief.

Then anxiety can kick in. It may feel like you no longer have any control over your life. Feelings of helplessness can cause anxiety to hover over us like a black cloud. Short-term anxiety can be a motivator that gets us going on the road to a better quality of life. But if we allow our anxiety to remain unchecked, it can lead to further health complications like depression.

Depression

Depression is often a natural by-product of illness. With on-going problems, such as pulmonary illness, the reality of life long problems can be overwhelming. When we are first confronted with life-changing situations, we often feel helpless. When we feel powerless, that can often make our hope disappear. That is when depression will often loom over us like a fire-breathing dragon. It may seem like we are caught in a pit of despair.

So how do we find an escape?
Where can we find relief?

Coping With Changes

When we experience unwelcome changes, our focus becomes very inward. We focus on our problems and we look for quick solutions. If quick solutions are not at hand, our anxiety level goes up and we began to miss the opportunities for help that are right at hand because we cannot see them.

The beginning of regaining a better quality of life is to "admit" the truth of what is going on in your life.

Pulmonary problems are now a part of your life. They won't magically disappear. You cannot make progress until you accept that fact. It doesn't mean you have to like it. It means that you accept the reality of your situation. When you do, it will begin to empower you to work on changes that will improve the quality of your life.

Changing Focus

Admitting or accepting the truth about your pulmonary disease is the beginning of a new direction for your life. It opens your eyes to the many possibilities for help as you deal with your pulmonary illness.



A wide range of emotions are normal after a health crisis. The negative will abate and positive feelings will emerge as you heal. As you find a better quality of life in dealing with your pulmonary illness, remember your "recovery team." They will assist you as you rebuild Body, Mind and Spirit.

KNOW YOUR RESOURCES

Look around you. You are NOT Alone!

1. Other people who are dealing with pulmonary problems
2. Your Medical Team:
Doctors
Nurses
Rehab Staff
3. Emotional/Spiritual Support:
Psychologists
Counselors
Chaplains
Pastors

Your Recovery Team

■ YOUR HEALTH CARE TEAM:
Doctors, Nurses, Rehab Staff,
Therapist, Support Staff, Chaplains

■ YOUR COMMUNITY TEAM:
Church Family, Neighbors, Friends

KNOW THE SIGNS OF DEPRESSION

- Feelings of sadness or pessimism
- Loss of appetite, overactive appetite
- Trouble sleeping, or excessive sleepiness
- Difficulty thinking or concentrating
- Slowing down of mental & physical activities
- Trouble carrying out normal tasks

It will also allow a change of focus to begin as you become actively involved in dealing with your pulmonary problems. Rather than a totally inward focus, you will begin to see that you are not isolated by your pulmonary problems. You are not alone. There are resources nearby.

Finding Resources

- The first resource at your disposal is “people going through the same thing” you are experiencing. We can always benefit by talking with people who are coping with problems like ours. Every time you go to rehab, you meet people who are dealing with similar circumstances.
- A second resource is the array of “professionals” at your disposal. In our health system, we are fortunate to have a large group of highly skilled physicians, nurses, therapists and rehab specialists who will assist you in your physical and emotional health journey. Never hesitate to let someone know of your needs and how we can assist you at any point in your health care journey. Even when it's past normal office hours, you may call the professionals (417-888-8888) at any time if you are having a problem or have an important question.
- A third resource is those who can provide “spiritual care” to you in your health journey. St. John's is staffed by a large group of chaplains who are full-time employees of the hospital. Chaplains are present in the hospital 24 hours a day, seven days a week. Chaplains are not just for inpatients. They are always prepared and are willing to sit down with you when you need to talk about the challenges you are facing. To contact a chaplain you may call 417-820-2735 24 hours a day.

There are other resources around you too. If you have a church family, be sure to let them know you have physical needs. Not only will they actively pray for you but they are a resource for other avenues of help. People in your church and your neighborhood will often reach out during your time of need.

Pulmonary Disease Reaches Beyond You as Patient

When physical changes come along, they not only affect you as the patient. They also affect every member of your immediate family. You are important to your family. You have a special role that you fill in your family. Because of your disease, you may not be able to fulfill your normal role. You may have been the one to mow the lawn, carry out the trash, run the vacuum, or care for the garden. Another family member may have to assume that duty. When we can no longer follow your normal routine, it may worry you. Your anxiety affects you and it affects your family members who want to help you have a better quality of life.

Help For the Family

It is important for your family and close friends to fully understand the nature of your pulmonary problems. It is also important for them to know how you are feeling as you cope with your health challenges. They want to help you, but sometimes family members and friends don't know what to do if they don't know how you feel or what you are thinking.

Communication is the “key” to helping them understand your situation. Understanding goes a long way in relieving fears. Allow them to ask questions of you and your medical team. Be sensitive to their fears and anxiety about your health by including them in what is taking place.

INTIMACY FOR THE PULMONARY PATIENT



Sex is a normal, enjoyable part of most people's lives, so you are probably wondering what effect your lung disease will have on your sex life. A combination of anxiety, fatigue, depression, medication and sometimes warnings from your doctor may have reduced your interest in sex for a while. As you begin to feel better, your interest will likely return.

Having sex with a comfortable familiar partner makes the heart and lungs work about as hard as climbing two flights of stairs or walking briskly for two or three blocks. Your heart muscle needs increased amounts of oxygen when your heart rate increases due to any type of exercise, including sex. Your respiratory or breathing rate will be faster as it tries to meet the increased oxygen needs of the body during sexual activity.

Talk with your doctor and pulmonary rehab staff about your body's ability to deliver oxygen during exercise. When your doctor is confident of your ability to walk or exercise at an appropriate level, your lungs are ready for sex.

What Position Is Best?

Lying side by side or sitting upright maybe be more comfortable. A seated position may be more comfortable than lying down.

You may need to try new positions to avoid symptoms, but remember that satisfaction depends on both you and your partner being comfortable. If changing positions makes either of you anxious, return to a more familiar position.

What if You Have Symptoms During Sex?

Some people may experience symptoms of overexertion during sex, including angina, palpitations, irregular heartbeat, or excessive shortness of breath. If this happens to you, stop and rest for a few minutes. If your doctor prescribed oxygen or inhalers, use them. When the symptoms go away you may resume sexual activity. If rest or medication does not relieve the symptoms or if symptoms return when you resume sex, call your doctor.

Your doctor may be able to suggest changes in your day-to-day routines, or medication that will ease your symptoms.

YOU SHOULD NOTIFY YOUR DOCTOR IF YOU HAVE ANY OF THE FOLLOWING SYMPTOMS DURING SEXUAL ACTIVITY:

- steady chest pain or discomfort.
- shortness of breath.
- raised heart rate for more than 15 minutes after intercourse.
- sleeplessness or extreme fatigue afterward.

Remember, it is normal for your heart to beat faster and your breathing to speed up during sex. Your heartbeat and breathing should slow down and return to normal shortly afterward.

What about Sexual Problems?

Pulmonary disease affects the entire body. Some medications have a side effect of impotence. If you are a man and have trouble getting an erection, please discuss it with your doctor. If you are taking any type of nitroglycerin, you should not take Viagra, Cialis or Levitra.

Sometimes physical or emotional discomfort can interfere with your ability to enjoy sex. Men may feel less sexual desire, may be unable to get or maintain an erection, or may experience delayed ejaculation. Women may feel less sexual desire, may notice a decrease in vaginal lubrication or be unable to reach orgasm.



Simply taking private time and holding each other can strengthen your relationship with less physical exertion than sex. If anxiety or problems in your relationship are interfering with your enjoyment of sex, talk to your partner. An honest, loving discussion may clear up fears, misunderstandings and problems that are worrying both or you.

Don't ignore the problem. Instead, ask your doctor what might be causing the problem. Sometimes, switching medications is all that is needed.

If you or your partner are nervous about resuming sex, start by sharing intimate time without intercourse. Talk about your hopes and fears and reassure each other of your love.

If you are uncomfortable talking, your doctor may suggest a counselor or relaxation expert who can help you learn together.

Working through your emotions will help you move forward. Coming to terms with your feelings can actually improve your life and strengthen your relationships. Follow the common sense guidelines given here, and you and your partner can once again share this valuable human communication.

Ask your pulmonary rehabilitation educator if you would like more information about sexuality and lung disease.

TIPS FOR ENJOYING SEX AGAIN

- Talk about when to resume sexual activity and decide together.
- Show your affection for each other daily in non-sexual ways, such as holding hands, talking, sharing feelings, hugging and touching.
- Relax and get in touch with your partner before sex. Trade massages, listen to music or cuddle.
- Take a nap first if you are tired.
- Wait one to three hours after eating a meal.
- Make the room temperature comfortable.
- Select a position that is comfortable and familiar.
- Breathe deeply from your diaphragm. Try pursed-lip breathing to help you prevent breathlessness during intercourse.
- Plan sexual activity an hour after taking lung clearing treatments.
- Take your time and enjoy each other.

INFORMATION ON LIVING WITH LUNG DISEASE



When you have a lung condition, it is important to learn how to avoid fatigue. You want to find ways to do your work, and find a good balance between work and rest. Finding ways to conserve your energy will help you cope with your lung condition.

Here are some tips to help you conserve energy:

■ PACING

- Pace yourself and don't rush.
- If you feel breathless, use pursed-lip breathing.
- Determine your "best breathing" time of day for activities. Do difficult tasks during this time. If mornings are hard, shower in the evening. Prepare for breakfast before bed.
- Avoid bending and lifting.
- If possible, use a cart for carrying several items so only one trip is needed.
- Don't take on more than you can handle comfortably and when you feel tired, QUIT.

■ WAKING UP

- Soft music is much more pleasant than an alarm if you are easily startled.
- When making the bed, make one side, sit and rest as needed, then move to the other side.
- Before getting all the way out of bed, do some of your dressing sitting on the edge of your bed. Every night leave your robe and slippers or shoes, socks and underwear where they are easy to reach in the morning.
- If you share quarters with another person, persuade him/her to let you have the bureau drawers which are easiest to reach.

BATHING

- If a shower or tub bath is too demanding, a great solution is to get a bath stool. Use a hand-sprayer which may be attached to the tub faucet or shower head.
- If excess humidity bothers you, leave the bathroom door open and turn on the exhaust fan.
- If you feel weak, don't take a bath or shower when you are alone.
- Shaving or applying make-up is much easier if you have a low mirror so that you can sit down while doing either.
- Incidentally, it is OK to remove the nasal cannula briefly to wash your face, shave or apply makeup.

GROOMING

- Avoid toiletries with heavy perfumes.
- Use of sprays and aerosols, except those prescribed by a doctor, is a bad idea. There are many liquid or gel type hair dressings. Also unscented roll-on or solid deodorants are excellent.

DRESSING

- Don't wear clothing which restricts chest and abdominal expansion. This can include: belts, girdles, tight bras.
- Slip-on type shoes means no bending over to tie shoelaces.
- Avoid tight neck bands.
- A large shawl is great for occasional shivers. It is much easier to put on and off than a sweater.

MEDICATIONS

- A pillbox with a separate compartment for each day of the week is helpful.
- Whenever you get a new medicine or a refill from the drugstore, figure out how long it will last and mark on a calendar the time to reorder.
- Never use anyone else's medicine! Two people may have the same disease and the same symptoms and yet respond to the same medication in entirely different ways.
- Keep pills away from heat and moisture.

RESPIRATORY THERAPY

- If you take breathing treatments at home, try to get all of your equipment together in a convenient place where it can be left from treatment to treatment.
- All equipment should be kept clean and should be sterilized as directed.

- If you find the plastic hose difficult to pull loose, trying pulling it off while the machine is running.
- Some of these machines have a small air filter which should be changed. Ask your supplier to give you some.
- Most medical equipment used at home can be purchased. Ask your supplier to compare rental versus purchase prices.

OXYGEN

- Oxygen is a prescribed drug. Questions about amount and usage are for your physician to answer.
- Find out approximately how long each portable unit supply will last you specifically. Learn to time your outings so you don't run short.
- Change nasal cannulas fairly often particularly if the prongs become soiled or uncomfortable.



LIFTING AND TOTING

- Get yourself a small utility cart, the kind with shelves.
- Carrying things downstairs is not a problem for most of us. Carrying them up may be a different story. There is one way: On an exhale, lift your burden two or three steps and put it down, rest. Climb two or three steps, rest again. Repeat. This may be a little slow, however it is possible to do the job without knocking yourself out.
- If you live where you must climb stairs, you might consider a mechanical chair lift, but they are very expensive. In any case, it is a good idea to have a chair to sit on or a table to lean on when you reach the top.

SOME CLEANING TOOLS

- One of the handiest gadgets is a pair of pickup tongs (these look like giant scissors). These can be used to retrieve things from hard-to-reach places. Most medical supply houses stock these.



TIPS FOR REST AND RECREATION:

- Make friends with whom you can share common interests and problems with. Many of the people you meet at pulmonary rehab have much in common.
- The buddy phone system can be a big help and provide a special feeling of security.
- If you live in an apartment, let the neighbors on all sides of you know that if they hear you pounding you need help.
- There are many entertaining things to do at home besides watching TV. Here are a few: Board games, card games, chess, jigsaw puzzles, reading, home-study courses, a fish, needlework, painting, playing the piano, mail order shopping.
- Keep all useful phone numbers next to your bed.
- Some sort of night light is a necessity. It lessens the possibility of you being disoriented if you waken suddenly and helps you locate things you may need in a hurry.

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- If you find you must do a dusty job, the best idea is to use a mask.
- If you must use a vacuum, which is not such a great idea, at least use a machine with a disposable bag and

remove with extreme care. A small hand vacuum is easy to use for spot cleanups and can stay on your cart.

- Avoid using anything harmful that can vaporize, such as kerosene, mothballs and solvents. Avoid using powders and aerosols.
- Have good ventilation and an adequate supply of fresh air at all times.

IN THE KITCHEN

- Plan your meals when you are neither hungry or tired. Light, well-balanced meals are too important to leave to impulse.
- Small, frequent meals are better than a few large ones. The more room the stomach takes up, the less room for air in the lungs. Prolonged digestion draws blood and oxygen to the stomach and away from other parts of the body which may need them more.
- Utilize convenience foods when desired, but remember that many packaged foods have high salt and sugar contents which may be banned if you are a special diet. Learn to read the food labels.
- If you enjoy cooking, it is often as easy to make a double or triple amount of your specialties. Freeze the excess in meal-size containers and enjoy some cook-free meals when you feel like a day off.
- A microwave oven can reduce cooking time and temperatures. A slow-cooking crockpot may make things easier, too.
- When cooking, always use your exhaust fan, or make sure there is good ventilation.
- If you are bothered by heat, try using a small portable fan when cooking or ironing. In fact, a small portable fan is useful in any room, not only to cool you off but also to help overcome shortness of breath brought on by exertion or stress. It is also useful for blowing all sorts of offensive or irritating odors away from you, should the need arise.

GOING OUT

- Be aware of air pollution. If you can get a daily air quality report in your area, use it when making plans for your day.
- Before leaving home, lay out your comfortable clothes and slippers, turn down your bed for a quick nap- whatever makes you feel good. Homecoming can then be more than just a relief, it can be a real pleasure.

- In cold weather, wear a nice long, warm scarf. If it gets too cold or windy, do not hesitate to wrap it across your nose. Some people prefer a cold-weather mask instead.

■ RIDING AND DRIVING

- If you have trouble getting from spot A to spot B, it matters not whether the problem arises in your legs or lungs, you do have trouble walking and are entitled to a “handicapped” parking permit. It is simple to obtain in most places. Write to your State Motor Vehicle Department for an application. Take the application to your doctor to sign. Make sure you display your permit.
- A coffee can with a snap-on plastic lid makes a dandy emergency urinal.
- If you do drive and find that you must put gas in the car yourself, try to get upwind from the pump so that you do not gas yourself as well as the car.
- Have a cell-phone available or CB radio in the car.

■ SHOPPING

- If you are shopping with an oxygen carrier, try to find a shopping cart to put your oxygen pack into while you shop.
- Try to pick an off day and hour to shop (not weekends). This way you can move at a leisurely pace and avoid being jostled.
- It is helpful to stay out of all sorts of crowds, particularly indoors. Aside from the fact that the air may be smoky and unpleasant, you run a high risk of having someone sneeze or cough in your face.
- Don’t be afraid to ask someone to stop smoking near you. We all have a right to breathe smoke-free air.
- Shopping for clothing can be exhausting. Know your measurements (write them down) and carry a small rolled up tape measure with you. Make sure that if an item isn’t satisfactory, it can be returned.
- When you have a fairly large grocery order, have all the “spoilables”, such as frozen foods, packed in a separate bag. When you get home, you can put away whatever needs refrigeration. Leave the rest for later when you feel more energetic or a “helper” can lend a hand.
- Incidentally, it won’t hurt to wash your hands extra well when you get home. It is now known that colds are spread by hands as well as through the air.

■ NOTES

INFORMATION ON BECOMING A NONSMOKER



If you smoke and have decided to become a nonsmoker, we congratulate you! A million people quit smoking cigarettes every year, and you can quit, too! You CAN do it! St. John's Health System wants to help you succeed at becoming a nonsmoker. If you have tried to quit before, remember: Each attempt provided practice for this, your final successful attempt. Now that you have learned what will and will not work for you, keep a positive attitude that you will succeed this time.

About Nicotine Addiction

Nicotine is as addictive as smoking crack cocaine or injecting heroin. Smoking is the number one contributor to unnecessary deaths in the United States, causing twice as many deaths as alcohol, illicit drugs, fires, murders, suicides, tornadoes, hurricanes, AIDS, and car accidents COMBINED! Each day 1,156 people die from smoking-related diseases.

But there is good news! The minute you quit, your lungs become more efficient, your cough will diminish, and your smoker's breath goes away. Your life expectancy increases and your self-esteem and confidence improve. You will also save money and have more time to spend it!

What's in a Cigarette?

Cigarette smoke contains more than 4,000 chemicals; 200 known poisons and 43 carcinogens. Burning tobacco generates more than 150 billion tar particles per cubic inch (visible portion of smoke), and is 10,000 times more concentrated than automobile pollution at rush hour. The risk of lung cancer is 1 in 10 smokers.

Harmful Effects from Smoking

Lungs: Two of the major health consequences of smoking are COPD and cancer. COPD destroys the lung's ability to expand and contract. Normal alveoli expands and contracts similar to a latex balloon. However, with COPD some of the alveoli (tiny air sacs where oxygen and carbon dioxide are exchanged) have changed shape. They expand like a paper bag with no ability to contract. This leaves trapped air in the lungs and the smoker will experience difficulty breathing. Once this develops, it can't be fixed. Every breath is a struggle. Lack of oxygen damages other organs and makes even the smallest task difficult. Many times death from COPD occurs because the heart is overworked



and can no longer function. The lining of the lungs is covered with cilia, which continuously beat producing a net flow of material up and out to the throat. It is the cilia movement that ultimately clears foreign particles out of the lungs. Smoking effects the rate at which the lungs' cilia beat. Smokers' cilia beat SLOWER than normal, and continue to slow down the longer the person smokes.

Quitting smoking REVERSES this effect and the cilia gradually recover their beating rates over time. Cigarette smoking is a major risk factor for heart attack, stroke and peripheral vascular disease.

CANCER: Smoking damages the genetic code of normal cells and decreases the body's natural protection against cancer. These damaged cells can become tumors which steal nutrition and energy from the rest of the body. Besides lung cancer, smoking is linked with cancers of the mouth, throat, pancreas, cervix, kidney, and bladder.

Chewing Tobacco

Dipping causes lip, cheek, tongue and other types of oral cancer. The longer you dip, the greater your chances of getting oral cancer. A dipper's gums start receding and may result in tooth loss. Dip damages mouth tissue beyond repair. Mouth sores that look grayish-white begin to appear on the inner cheek. Nearly 90% of all oral cancers start from mouth sores.

STOP CHEWING. Check your mouth often, looking closely at places where you hold tobacco. If you have any of the following signs or symptoms, see your doctor or dentist right away:

- A sore that bleeds easily or does not heal
- A lump or thickening anywhere in your mouth or neck
- Soreness or swelling that does not go away



Chewing tobacco is NOT a safe alternative to smoking.

FIVE REASONS PEOPLE SMOKE & HOW TO RESIST THEM

- 1 Stimulation**
 Do this instead: Take a brief walk, ride a bike, keep busy, avoid fatigue, get plenty of sleep.
- 2 Handling**
 Do this instead: Doodle, handle a coin or pencil, knit, sew, snap a rubber band, do a puzzle, squeeze a small ball, or drink water.
- 3 Pleasure**
 Do this instead: Think of the harmful effects of smoking, list the pleasures of being a non-smoker, spend time with friends, read a magazine, get involved in something special.
- 4 Relaxation/ Stress Reduction**
 Do this instead: Take up a hobby, practice deep breathing, exercise vigorously, think of what you really need, talk to a friend, alter routines, list your blessings, stop worrying, take one day at a time.
- 5 Habit**
 Do this instead: Throw away all cigarettes and ashtrays. Designate your home as smoke-free, chew sugar-free gum, drink water, go where smoking is not allowed, listen to music, take a shower, thoroughly clean your car and house.

- A red or white patch that does not go away
- Trouble chewing, swallowing, or moving your tongue or jaw.

Secondhand Smoke

The major consideration for secondhand smoke is the same as for firsthand smoke: EXPOSURE. Chronic exposure: Living with someone who smokes a pack or more a day can have specific and serious effects. Chronic exposure to secondhand smoke has shown several cases of non-smoking relatives of smokers getting COPD, usually chronic bronchitis, which was partially reversed by ending exposure.



About Gaining Weight

While it is true that a weight gain of up to 20 pounds can be a side effect of quitting smoking, for most people this increase is temporary. As your

lungs recover from smoking, you will find you can exercise harder for a longer time. Increasing your activity level is one of the best things that you can do to help yourself quit. AND to help keep weight off. Isn't it worth carrying a few extra pounds temporarily in order to regain your health?

Immediate Benefits of Quitting Tobacco Use

- improve circulation to skin; reduce wrinkles.
- increase circulation to sexual organs; increase potency (2/3 of impotent men smoke).
- 20 minutes after last cigarette, pulse rate, blood pressure and body temperature become normal.
- carbon monoxide in blood declines within eight hours.
- senses of taste and smell quickly improve.
- dental disease prevented or stabilized.
- stamina and vigor improve.

Feel better about yourself - YOU QUIT SMOKING!

BECOMING A NONSMOKER:

7 Simple Steps

Decide at this moment that you want to quite smoking forever. Not tomorrow. Today.

Accept once and for all that smoking has been destroying your life and health. Imagine all the negative health consequences. Plan ahead. List positive alternatives to smoking and check the ones below that you enjoy.

- | | |
|---|---------------------------------|
| • Take a walk | • Burn incense |
| • Eat something healthful | • Go swimming |
| • Make a phone call | • Light a fragrant candle |
| • Write a letter | • Suck on a mint |
| • Take a shower or bath | • Chew on a straw |
| • Spend five minutes brushing and flossing your teeth after you eat | • Play with clay or silly putty |
| • Help someone else quit | • Drink 12 oz. water |
| • Spruce up your appearance | • Suck on a toothpick |
| • Read a book | • Chew sugarless gum |
| | • Visit a nonsmoker friend |
| | • Breathe deeply |
| | • Squeeze a foam ball |

EXERCISE!!! Exercise is the best thing that you can do to help you quit!!! If your physician approves, exercise at least 30 minutes, three or four times each week.

Avoid smokers, smoking environments and alcohol, which can reduce your resolve. Just one cigarette CAN HURT. It causes relapse in 80% of people trying to quit.

Ask for support from family and friends. Tell everyone that you quit.

Reward yourself every time you don't have a cigarette. Put money in a jar every time you don't have a cigarette and buy yourself something special each week. Be outrageous. Ask yourself, "How can I quit smoking and enjoy the process?"

Calculate your savings over the next 10 years if you quit today.

Your doctor can talk with you about medicines that may aid your effort to stop smoking.

Your Body's Response to Smoking

Within seconds, cigarette smoke is inhaled into the lungs allowing nicotine and other chemicals to absorb into the bloodstream, and travel to all areas of the body. Within 10 seconds, nicotine reaches the brain and affects the brain chemicals which control mood swings, relaxation, and arousal. As a result, you may feel an increase in pleasure, better able to concentrate, increased memory, mood control, anxiety reduction and appetite suppression. After a period of time, the nicotine level starts to drop. The decrease triggers withdrawal symptoms and the tobacco user begins to self-medicate with nicotine to avoid the withdrawal symptoms, therefore causing a vicious cycle of addiction. It takes 72 hours for nicotine to leave your system. During this time, you will notice an increase in withdrawal symptoms.



SMOKING CESSATION: Your Road to Freedom Starts with St. John's

St. John's Road to Freedom smoking cessation program is available for everyone interested in tobacco cessation. Take charge of your life. Call 888-8888 or 1-800-909-8326. INTERNET SUPPORT: Begin with www.stjohns.com. There are numerous websites with support groups and information. However, beware of anything that "guarantees" you will stop smoking.

Support Groups, Classes & Resources

Ask for Help When You Need It

St. John's Health System offers many programs to help you live a healthy life-style. For information or scheduling for any of the following programs, call 417-888-8888 or 800-909-8326.

Asthma Resource Center

Support services for doctors and patients aid in the management of asthma. The team approach offers nursing education and education on medications, diet and exercise.

Behavioral Health Services

Learn how to deal with, or cure, symptoms and behaviors caused by physical illness or environmental experiences. Services include inpatient and outpatient, groups and individual counseling provided through the St. John's Marian Center, Behavioral Health Care and numerous St. John's psychiatrists and psychologists.

Cardiac Rehabilitation - Phase II

This structured program provides monitoring of your heart during supervised exercise sessions. Continuing education is provided on stress management, low-fat diet and safe exercise.

Cardiac Rehabilitation – Phase III

For individuals who are at high risk for developing cardiovascular

disease or graduates of Phase II Rehab, this exercise program helps reinforce the lifestyle modifications you are beginning to practice.

Congestive Heart Failure Support Group

Meet every second Tuesday, 11:30 a.m.-2:30 p.m., for informal discussion and sharing, with occasional guest speakers. Call 820-3443.

Congestive Heart Failure Outpatient Rehabilitation

This structured program monitors your heart during supervised exercise sessions to help improve your activities of daily living. Education is provided on low sodium diet, safe exercise, signs and symptoms to report.

Cardiopulmonary Resuscitation (CPR)

Learn to revive adults, children and infants. Classes can focus on a specific age group or teach techniques for all three groups. Learn assessment of the victim, rescue breathing, chest compression, and how to clean an obstructed airway in a conscious or unconscious person. After completing the course, you will have increased confidence and can actually save lives at work and at home.

Cholesterol Management Services

Support services for doctors and patients interested in cholesterol reduction. The team approach offers nursing education and education on medication, diet and exercise.

Diabetes education

Learn the fundamentals of diabetes management. This comprehensive program of clinical services, education and counseling includes a review of diet, exercise, medication and monitoring.

Exercise Consultations

After evaluating your current health status, exercise experience and medical history, professionals help you develop a personal fitness program you can maintain.

Fibromyalgia Support Services

This group provides information, treatment and support for patients who have been diagnosed with Fibromyalgia. Treatments include massage, auricular and exercise therapies.

Fitness Center

Various programs provide many health and fitness options. Whether you want to participate in an exercise class or set up your own routine using high-tech equipment, the Fitness Center can help you achieve your fitness goals.

Headache Support Services

Support services for physicians and patients aid in the management of headache. The team approach offers nursing, migraine education and education on medication, diet and exercise.

Hearts at Home

This support group for families and friends of cardiac inpatients meets at St. John's Regional Health Center. Participants share experiences, feelings and hope, practical information, psychological support, emotional guidance and spiritual

help. Foal: To accept that we are powerless to control the quantity and quality of our loved one's life." Call 417-820-2735

The Heart Failure Management Program

This program is a follow-up to the education received in the hospital or doctor's office. Patients with congestive heart failure receive phone calls from a registered nurse to monitor signs and symptoms of heart failure; reinforce teaching on exercise, diet, medications, and symptoms to report. Call 417-820-3443

Heart Support Group

Members gather the first Monday of each month at 7 p.m. for informal discussion and sharing. The group provides interaction and support for outpatients with heart disease as well as for their families and friends.

PCD/AICD Support Group

For patients with Internal Cardiac Defibrillators and their families. Members meet the third Tuesday of each month from 10-11:30 a.m.

New Images

This medically supervised weight management program offers a sensible alternative to conventionally rigid and unrealistic diets. This class provides you with the tools you need to manage your weight in a positive way, without adverse side effects. Learn to set realistic, attainable weight goals and to establish lifelong healthy eating and activity habits. Provides psychological support and techniques for modifying personal behavior.

Nutrition Counseling

Learn to make better food choices and reduce your blood pressure, blood cholesterol and risk of heart disease. Dietitians evaluate your medical history, weight history, and lifestyle and food preferences and help you develop healthy personal nutrition goals.

Osteoporosis Services

Support services aid in the prevention and management of osteoporosis. The team approach offers nursing education and education on medication, diet and exercise.

Pulmonary Rehabilitation

In group lectures and supervised exercise classes, people with reduced lung function learn to improve their ability to exercise and cope with their physical restrictions.

Regional Medical Supply

One call puts you in touch with supplies for home use; including hospital beds, toilet seat elevators, grab bars and commodes, etc. 417-820-7115

St. John's Seniors and 55 Alive!

Membership for people 55 or older. Members receive a free health resource booklet and newsletter with information on area services, discounts, and a wellness record to track personal health information. Also, offers a mature driving course, Medicare paper work assistance and screenings at an annual health fair.

Visiting Nurse Association

In-home services include home care, private duty nursing, hospice, home infusion, durable medical equipment and supplies. Call 417-866-4374

Self-Care Program

Learn to be a wise consumer of health care services, and learn to prevent illnesses or detect them early. This class will teach you how to equip your home pharmacy, which immunizations are recommended for family members, and how to tell when a situation is serious enough to contact your health care provider.

Recommended reading: Healthwise Handbook by Donald W. Kemper

Sleep Disorders Center

Tests and evaluation address a wide range of sleep issues such as sleep apnea, narcolepsy and insomnia.

Smoking Cessation

Get help to "kick the habit" in our Road to Freedom smoking cessation program. This program involves a comprehensive approach with motivation support and personal responsibility. Individual consultations with a smoking cessation educator will help you develop a personalized plan for success. To sign up or for information call 417-820-3400.

Stress Management

Learn the definition of stress and how it affects your body. To combat the effect of stress, you will learn several relaxation techniques, explore various types of exercise, discover the importance of diet, and discuss time management strategies, all which will improve your ability to cope. You will experience support on an individual basis and in group settings.

Stroke Support Group

For stroke patients as well as their families and caregivers. This group

meets 2-3 p.m. on the fourth Thursday of each month. Call 417-820-3031

Transplant Support Group

A support group for people who are anticipating or who have had an organ transplant. The group meets at 6:00 p.m. the 2nd Monday of each month.

American Heart Association of Southwest Missouri

2446 E. Madrid, Springfield, MO 65804

Provides community programs and education to reduce disability and death from cardiovascular disease and stroke. Call 417- 881-1121

American Lung Association of Western Missouri

2053 S. Waverly, Springfield, MO 65804

Provides community programs and education to reduce disability and death from pulmonary disease. Call 417-883-7177

Area Senior Centers Southwest Missouri Office on Aging.

1735 S. Fort, Springfield, MO 65807. Provides information and assistance accessing community resources for senior citizens through various senior centers in surround counties. Programs include; Hot noon meals. Social and health activities and programs. Call 417-862-0762

Council of Churches of the Ozarks

Provides many programs and services to community members thought offices at 627 N. Glenstone, Springfield, MO 65802. Call 417-862-3586

Daybreak Adult Day Care

Provides a structured program of medical, social and educational activities for elders and disabled adults.

Helping Elderly Live Productively (HELP)

Provides hearing aids, hearing test, and durable medical equipment for people who meet qualification guidelines.

Summer Youth Work Camp

Youths help with home maintenance and repair

Home Sharing

Helps match people to share residence.

ElderCare Transit

For people over age 60 or with disabilities.

HomeBound Shoppers

Shopping help for homebound people over age 60 and physically disable individuals.

Home Delivered Meals

Daily Bread

Southwest Missouri Office on Aging. 317 Park Central East, Springfield, MO 65806. 417-862-0762. Delivers hot meals to those who qualify. Donation requested.

Meals on Wheels of Church Women United

Northside: 1423 N. Jefferson, Springfield, MO 65802. 417-269-3496. Southside: 3081 S. National, Springfield, MO 65802. 417-269-4696. Delivers hot meals to homebound persons. Free

Missouri Division of Aging, Alternative Services

149 Park Central, Suite 244, Springfield, MO 65806, 417-895-6433. Provides social services to the elderly and disabled adults thought a variety of in-home support, direct and protective services. Elderly Abuse Hotline 1-800-392-0210.

EXPERIENCE

INNOVATION

TEAMWORK

VISION

COMPASSION

WISDOM

PRAYER

St. John's Heart Institute
1235 East Cherokee
Springfield, MO 65804

417-888-8888

1-800-909-8326

www.stjohns.com

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