# CD Part 3

# **Breathing Disorders**

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#### A. Definitions

The following definitions are for words used in this chapter and during the SSA disability process. If you need additional definitions, consult a good medical dictionary, available in most bookstores and libraries. You can also look at online medical dictionaries like the one at www.medlineplus.gov.

**Apnea.** Cessation of breathing. See also *obstructive sleep apnea* and *central sleep apnea*.

**Arterial blood gases (ABGS).** The measurement of oxygen gas pressure, carbon dioxide gas pressure, acidity, and bicarbonate concentration in the blood. A sample of arterial blood is usually obtained in a syringe by needle puncture of the radial artery in the wrist. See  $PaO_2$ ,  $PaCO_2$ .

**Asthma.** Type of chronic obstructive pulmonary disease characterized by episodes of narrowing of bronchial airways. Such narrowing results from excessive secretions, inflammation, and constriction of bronchial muscles. Also called *reactive airways disease* and *asthmatic bronchitis*.

**Bronchi.** Larger airways branching from the trachea to the lungs.

**Bronchiectasis.** Condition involving specific areas of chronic damage and infection in the bronchial airways.

**Bronchitis.** Inflammation of bronchial airways; may be associated with infection or other sources of irritation such as allergy, smoke, or chemical fumes. See also *chronic bronchitis*.

**Bronchodilator.** Drug that relaxes muscles in the bronchial airways so that they can enlarge (dilate).

**Bronchopulmonary dysplasia (BPD).** Chronic obstructive lung disease that starts in a newborn because of lung injury. Such injury might result from premature lungs (respiratory distress syndrome), pneumonia, episodes of cessation of breathing (apnea of prematurity), or other disorders that damage the lungs.

#### Carbon monoxide diffusing capacity (DLCO).

Harmless breathing test using carbon monoxide gas as a measure of gas exchange. Mostly used with patients with *fibrotic lung disease*.

**Cardiac catheterization.** Insertion of hollow tubes (catheters) into the heart's chambers or arteries supplying the heart, for treatment purposes, pressure

readings, or x-rays. Pressure readings may also be made in the pulmonary arteries and aorta (largest artery in the body, arising from the left ventricle of the heart).

**Central sleep apnea.** Cessation of breathing caused by a disorder of the brain.

**Chronic bronchitis.** Type of obstructive pulmonary disease caused by persistent inflammation, secretions, and resultant narrowing of the bronchial airways. The most common cause of chronic bronchitis is cigarette smoking.

#### Chronic obstructive pulmonary disease (COPD).

Type of lung disease characterized by resistance to airflow in and out of the lungs. Also known as chronic obstructive lung disease (COLD).

**Chronic pulmonary insufficiency.** Any type of persistent breathing disorder.

#### Computerized axial tomography scan (CAT scan,

**CT scan).** X-rays taken under computer guidance, consisting of many picture slices of high resolution; show much greater detail than plain x-rays.

**Cor pulmonale.** Damage to the right side of the heart caused by lung disease.

**Corticosteroids.** Drugs that have the same action as the natural steroid hormone cortisol. Corticosteroids help combat many diseases, but their side effects can be serious if taken for a long time. Chronic use of steroids also indicates the severity of the disease being treated.

**Cyanosis.** Bluish discoloration of the skin and mucous membranes that indicates inadequate oxygenation of tissues. It is most easily observed in the fingertips, toes, lips, earlobes, and nose.

**Cystic fibrosis.** Genetic disorder associated with lung disease and deficiency of pancreatic digestive enzymes.

**Diuretic.** Drug that increases the loss of water from the body through increasing the formation of urine by the kidneys.

**Dyspnea.** Shortness of breath or the sensation of inability to get enough air.

**Echocardiogram.** Image of the heart using high-frequency sound.

**Electrocardiogram (EKG, ECG).** Recording on the surface of the chest of the heart's electrical activity.

**Emphysema.** A common type of chronic obstructive pulmonary disease, most frequently caused by

cigarette smoking. In emphysema, *hyperinflation* and an increased chest diameter cause "obstruction" or resistance to the normal flow of air in and out of the lungs.

**Expiration.** Breathing out, or exhaling.

**Fibrotic lung disease.** Type of restrictive lung disease that involves inability of the lung to carry out gas exchange between carbon dioxide and oxygen—such as *pneumoconiosis*.

**Flaring.** Widening of the nostrils in infants. A sign of difficulty breathing.

**Flow-volume loop.** Type of spirometry in which the result shows the rate of airflow in relation to volume of air.

**Forced expiratory volume (FEV).** Maximum volume of air that can be expired through the mouth with maximum effort, after taking as deep a breath as possible. The FEV should not be confused with the FEV1. The FEV is the same measurement as the FVC.

#### Forced expiratory volume in one second (FEV1).

The volume of air in the first second of the FEV. The FEV1 is the most important measurement for the severity of chronic obstructive pulmonary diseases such as emphysema, chronic bronchitis, asthma, and bronchopulmonary dysplasia. The FEV1 is decreased in these conditions.

**Forced vital capacity (FVC).** Same as FEV, but preferred usage is FVC.

**Gas exchange.** Ability of carbon dioxide waste gas to pass from the blood into the air, and for oxygen to pass from the air into the blood. Gas exchange takes place across the delicate membranes that make up the alveoli (tiny air sacs of the lungs), where the air and blood are very close to each other.

Hemoptysis. Coughing up blood.

**Hepatomegaly.** Enlarged liver.

**Hyaline membrane disease.** See *respiratory distress syndrome.* 

**Hyperinflation.** Abnormal increase in the size of the lungs; a sign of obstructive lung disease, such as emphysema and bronchopulmonary dysplasia.

**Hyperventilation.** Abnormally increased rate and depth of breathing.

**Hypoventilation.** Decreased breathing with inability to move enough air in and out the lungs. Associated with decreased oxygen and increased carbon dioxide in the blood.

**Hypoxemia.** Decreased oxygenation of arterial blood.

**Inspiration.** Breathing in, inhaling.

**Liter (L).** Unit of air volume used in measuring lung functions. One liter is 1,000 milliliters (ml).

**Lobectomy.** Surgical removal of a lobe of a lung.

**Lungs.** Inflatable gas exchange membranes inside the chest cavity. There are right and left lungs, and each lung has several lobes.

**Magnetic resonance imaging (MRI).** Method of producing pictures of internal body structures using magnetic fields and radiofrequency fields. MRI does not use x-rays or other radiation.

**Mechanical ventilation.** Breathing assistance from a machine.

**Mycobacteria.** Group of bacteria, including the species causing tuberculosis (TB). Atypical mycobacteria may also cause infection.

**Mycotic infections.** Infections caused by fungi.

**Nebulization.** Making a liquid drug into a fine mist, so that it can be inhaled directly into the lungs.

**Neck vein distention.** Enlargement of the neck veins in a body position in which they should be flat; a sign of right heart failure.

**Obstructive breathing disorders.** See *chronic* obstructive pulmonary disease.

**Obstructive sleep apnea.** Decreased ability to move air in and out of the lungs during sleep, associated with episodes of cessation of breathing. Most common type of sleep apnea. Obesity is the major cause.

**Oximetry.** See *pulse oximetry*.

**Oxygen saturation.** See *pulse oximetry* and  $SaO_2$ .

**Oxygenation.** Supply of oxygen to tissues.

PaCO<sub>2</sub>. Carbon dioxide pressure in arterial blood, expressed as millimeters of mercury (mm Hg).
Normal value (at sea level) 35–45 mm Hg.

**PaO<sub>2</sub>.** Oxygen pressure in arterial blood, expressed as millimeters of mercury (mm Hg). Normal value (at sea level) 80–100 mm Hg.

**Peak flow meter.** Small, handheld device, used mainly by asthmatics to show the maximum rate of possible airflow by breathing forcefully through it.

**Percentile.** Method of comparing something (like height or weight) to normal expected values, in order to decide the chance (probability) that it is normal or abnormal. For example, a person with a weight in the

60th percentile is heavier than 60% of other people and lighter than 40% of other people.

**Peribronchial disease.** Disease around the bronchial airways.

**Peripheral edema.** Fluid retention in the feet or legs. **Pilocarpine iontophoresis.** See *sweat test*.

**Pneumoconiosis.** Lung diseases caused by excessive breathing of small, dust-like particles such as asbestos, rock dust, coal dust, or metal dusts (beryllium, barium, antimony, cobalt, tin, iron oxides, etc.). Pneumoconiosis can be associated with both obstructive and restrictive lung disease.

**Pneumonectomy.** Complete removal of a right or left lung.

**Prolonged expiration.** Abnormally long time to breathe air out of the lungs, as observed on physical examination.

**Pulmonary.** Related to breathing or the organs associated with breathing.

**Pulmonary arteries.** Arteries arising from the right ventricle of the heart, carrying blood to the lungs for oxygenation.

**Pulmonary function study (PFS).** Any kind of breathing test. Sometimes called *pulmonary function testing*.

**Pulmonary hypertension.** Type of pulmonary vascular disease resulting in elevated blood pressure inside the arteries of the lungs. Also known as *pulmonary vascular hypertension*.

**Pulse oximetry.** Method of measuring oxygen saturation in the blood without having to take an arterial blood sample or insert anything into a patient's artery. Done by attaching a small sensor to a finger or ear lobe.

**Rales.** Discontinuous abnormal breath sounds in the bronchial airways of the lungs that can be heard with a stethoscope.

**Respiratory distress syndrome (RDS).** Collapse of lung tissue in premature newborn infants. Lung tissue cannot be kept open because they lack sufficient quantities of a chemical called surfactant, needed to decrease surface tension on the lungs. Also known as *byaline membrane disease*.

**Restrictive breathing disorders.** Any breathing disorder associated with decreased functional lung volume (e.g., obesity, *thoracoplasty*, weakness of

respiratory muscles, or *lobectomy*) or associated with disease of the lungs themselves that results in decreased gas exchange (such as pulmonary fibrosis).

**Retractions.** Strained contractions of the muscles of the chest wall or upper abdomen in infants who are having severe difficulty breathing.

**Rhonchi.** Continuous abnormal breath sounds in the bronchial airways of the lungs that can be heard with a stethoscope.

**Right-sided gallop.** Abnormal heart sound, heard with a stethoscope, suggesting that damage has been done to the right side of the heart by the stresses put on it.

**Right ventricle (RV).** Right heart chamber that pumps blood through the lungs.

**Right ventricular hypertrophy (RVH).** An abnormality characterized by enlargement of the right ventricle. May be caused by lung disease, as in *cor pulmonale*. Can be seen on chest x-ray, echocardiograms, CT scans, MRI scans, or detected by EKG.

**Right ventricular outflow tract.** Enlargement of the pulmonary arteries as they branch from the right ventricle.

**SaO<sub>2</sub>.** Oxygen saturation of arterial blood, as measured by oximetry. Normal value (at sea level) 95–99%. SaO<sub>2</sub> is less accurate than arterial oxygen pressure (PaO<sub>2</sub>) in evaluating blood oxygenation; it is more useful in noninvasive monitoring to detect changes in oxygenation.

**Shortness of breath (SOB).** See *dyspnea*. **Sleep apnea**. Periods of breathing cessation during sleep.

**Spirogram.** Graphs showing the results of spirometry. Also called *spirometric tracings* or *spirometric curves*.

**Spirometry.** Breathing test which measures the ability to ventilate the lungs—the speed (rate of airflow), amount of air (volume), and pattern of air movement in and out of the lungs. Spirometry is valid only with maximum effort by the patient.

**Sputum.** Material coughed up from the lungs; may indicate infection or other disorders.

**Sweat test.** Test for chloride (and sometimes sodium) in the sweat. In patients with cystic fibrosis, chloride and sodium are decreased in sweat. Also known as *pilocarpine iontophoresis*.

**Tachypnea.** Increased rate of breathing.

**Thoracoplasty.** Surgical removal of part of the chest wall, including the ribs.

**Time-volume spirograms.** Type of spirometry that shows how much can be breathed out over time, after taking as deep a breath as possible. Requires maximum effort by the patient. Generally required by the SSA to satisfy a listing or serve as the basis for an RFC.

**Trachea.** The main airway connecting the mouth and nose to the lungs.

**Tracheostomy.** Surgically placed opening through the neck into the trachea. May be temporary or permanent, and is used to connect a respirator for mechanical ventilation for patients who need assistance in breathing. Patients who have had a laryngectomy (surgical removal of the voice box) also have a tracheostomy.

**Ventilation.** Movement of air in and out of the lungs.

**Wheezing.** Abnormal, high-pitched sound created when air flows through narrowed bronchi.

#### **B.** General Information

To establish that you have a disability based on a breathing disorder, you will have to provide the SSA with evidence including shortness of breath, laboratory test results such as pulmonary function studies, and physical symptoms such as wheezing, chest pain, and coughing up sputum or blood. If you have extremely advanced pulmonary disease, you may burn extra calories in breathing, and your symptoms may include a poor appetite, resulting in weight loss and malnutrition.

Although shortness of breath is the major symptom of breathing disorders, shortness of breath in and of itself does not indicate the severity of a breathing disorder. One reason is that factors unrelated to a breathing disorder, such as poor physical conditioning and other medical problems can affect whether you feel short of breath.

To test for a breathing disorder, your doctor may have administered a spirometry, arterial blood gas (ABGS), or carbon monoxide diffusing capacity (DLCO) test. The SSA will reject the results of any such test if the test was administered while you had an acute illness such as pneumonia, because the test results won't show your usual condition. Furthermore, regardless of the results of a properly administered breathing test, you must also provide the SSA with evidence from a physical examination and chest x-ray that you have significant lung disease. Without such evidence, the SSA is not likely to accept test results suggesting a breathing disorder.

Most breathing disorders are evaluated by spirometry, and the SSA will probably send you to a consultative examination for spirometry—even if your treating doctor has provided test results. Further testing may delay your claim for weeks or even months. There are several reasons the SSA often does its own testing:

- Many doctors and hospitals use spirometry done by flow-volume loop, and the SSA requires timevolume spirograms.
- Many doctors and hospitals don't have the actual spirograms from testing, and the SSA cannot grant benefits without reviewing the actual tracings to make sure they are valid.
- Many doctors don't perform spirometry using the SSA's exacting requirements.

Some claimants do not give their maximum effort during spirometry, and the SSA rejects the test results as invalid. To avoid the time delay of having to return for repeat testing, put forth your best effort. If your test spirogram shows poor effort on two tests, the SSA will be unable to assess the severity of your breathing disorder and your claim may be denied. Also, repeat testing is time consuming.

# 1. Obstructive and Restrictive Breathing Disorders

All breathing disorders can be classified as chronic obstructive pulmonary disease (COPD), a restrictive pulmonary disorder, or a combination of both. All of the listings deal with these disorders or with complications related to them.

The three most common COPDs the SSA sees are emphysema, chronic bronchitis, and asthma. In adults, cigarette smoking, with both emphysema and chronic bronchitis usually occurring together, causes most COPD. Asthma is also markedly worsened by smoking. In children, most breathing disorders involve COPD associated with asthma, cystic fibrosis, and bronchopulmonary dysplasia. The breathing test most often done on claimants with COPD is spirometry with measurement of the FEV1.

Restrictive breathing disorders are those in which there is a decrease in the amount of usable lung volume. Restrictive disorders may be caused by a disease of lung tissue itself, such as fibrotic lung disease. It is possible, however, to suffer from a restrictive disorder even when remaining lung tissue is normal—for example, because of pneumonectomy or lobectomy, thoracoplasty, spinal deformities, gross obesity, or paralysis of breathing muscles as a result of a stroke or other neurological disorder. Most disability applicants with restrictive breathing disorders undergo spirometry with measurement of the forced vital capacity (FVC). If the restrictive disorder involves lung tissue, the SSA may require a test of gas exchange.

#### 2. Ventilation and Gas Exchange

Breathing impairments may involve problems with ventilation of the lungs, in which there is difficulty moving air in and out of your lungs. They can also involve gas exchange disorders, in which damaged lung tissue blocks oxygen in the air from passing into the bloodstream, even when air can reach the lungs.

Some breathing disorders are purely ventilatory, such as with spinal deformities or obesity—you have healthy lung tissue, but difficulty moving air in and out of your lungs. Other breathing disorders are strictly gas exchange disorders—ventilation of the lungs is normal, but the lungs themselves are damaged. Fibrosis of the lungs is an example of a gas exchange disorder in which ventilation can be normal. Still other disorders, such as emphysema, cystic fibrosis, and bronchiectasis, can involve lung damage as well as decreased ability to ventilate the lung.

While ventilation is tested by spirometry measuring the FEV1 and FVC, gas exchange is tested via DLCO and ABGS. The SSA may have these tests administered to evaluate your breathing disorder, but they are less frequently needed than spirometry. Measurement of oxygen saturation by oximetry cannot be substituted for ABGS in the evaluation of severity, except in children less than 12 years of age.

#### 3. Pulmonary Heart Disease

Pulmonary heart disease, or cor pulmonale, is heart disease resulting from lung disease. For example, recurrent blood clots to the lungs or inflammation of the pulmonary arteries can cause pulmonary hypertension. The high blood pressure can cause heart failure because of the heart's difficulty in pushing blood through the lungs. Listing 3.09 applies to pulmonary heart disease in adults. Pulmonary heart disease in children is considered under the child heart disease listings in CD Part 4.

One way to diagnose pulmonary heart disease involves directly measuring pressures inside the arteries of the lung by cardiac catheterization. This is an invasive test, and the SSA will not require an applicant to undergo such testing. If your treating doctor has done such testing, however, be sure the SSA gets the results.

## 4. Exercise Testing

In unusual circumstances, the SSA may ask you to undergo an exercise test with an ABGS to find out how much exercise you can tolerate without a dangerous drop in your arterial oxygen. If you are asked to undergo such a test, you will walk on a treadmill or ride a stationary bicycle while your vital signs (heart rate, breathing rate, and blood pressure), EKG, and overall condition are monitored.

An exercise test can be dangerous to someone with a breathing impairment. Before you undergo exercise testing, a doctor should physically examine you to make sure it is safe. Only a pulmonary specialist or cardiologist with pulmonary expertise should perform pulmonary exercise testing. The SSA should not order the test if it can grant your claim in some other way. Most patients with advanced lung disease

sufficiently severe to qualify for disability benefits can be evaluated without exercise testing. Under no circumstances should a disability examiner, case manager, hearing officer, or someone other than a doctor working for the SSA request an exercise test. If your treating doctor has already had such testing done, it is important that the results be available to the SSA. Exercise testing is considered under adult Listing 3.02. There is no child listing for exercising testing.

#### 5. Sleep-Related Breathing Disorders

A sleep-related breathing disorder, or sleep apnea, is associated with a drop in arterial blood oxygen, and often leads to awakening from sleep. Sleep apnea can be fatal if it interferes with your heart's ability to beat in a regular rhythm, a possibility that is increased with coexistent heart disease. Sleep apnea varies in degree of severity. Mild cases may involve only a few apneas per night of which you are unaware. In severe cases, you experience many apneas each night, waking often and sleeping so little that you can't think clearly the next day. Severe chronic sleep apnea can result in pulmonary heart disease. By far, the most common type of sleep apnea is that associated with obesity.

#### 6. Episodic Respiratory Disease

Episodic respiratory illness means flare-ups of difficult breathing that may occur in people who have asthma (most common), cystic fibrosis, or bronchiectasis. The attacks themselves may be associated with complications of pneumonia, coughing up blood, respiratory failure, or bronchitis.

Whatever the nature of the attack and disorder that causes it, to qualify for disability you must provide the SSA with complete documentation of the attacks, including doctor and hospital treatment records. An episode that qualifies as an attack has the following characteristics:

- Prolonged symptomatic episodes lasting one or more days.
- Need for intensive treatment—intravenous drugs (antibiotics, corticosteroids, or bronchodilators) or inhaled bronchodilator drugs. Injection of

- drugs under the skin (such as subcutaneous epinephrine) does not qualify as an intensive treatment.
- Drugs administered in an emergency room, hospital, or equivalent setting. Treatment in a doctor's office does not qualify.
- Inpatient (not emergency room) hospital admissions for longer than 24 hours.

#### 7. Effects of Obesity

The combined effects of obesity and respiratory impairments can be greater than the effect of each of impairment considered separately. Therefore, when the SSA determines whether an obese person with breathing problems has a listing-level impairment or combination of impairments, and when assessing an individual's RFC, the SSA must also consider the effects of obesity, not just the respiratory problems. For example, an obese person with lung disease might be capable of less exertion than a person of normal weight with the same lung disorder.

# C. Specific Listings and Residual Functional Capacity

The listings that follow are in the federal regulations. They have been interpreted and commented on for greater ease of understanding while explaining their requirements. It is impossible to discuss here all of the medical possibilities related to every kind of disorder, and you may need to seek help from your treating doctor to more fully understand how your particular impairment relates to these listings. The discussion of residual functional capacity does not apply to children.

## Listing 3.02: Chronic Pulmonary Insufficiency (Adults)

Chronic pulmonary insufficiency is a general term covering most types of breathing disorders, rather than a specific disease. Different parts of this listing require various pulmonary function tests—spirometry and ABGS. The SSA will send you and pay for any pulmonary function testing it thinks you need.

#### a. Listing Level Severity

To meet the listing, you must satisfy (A), (B), or (C).

① Chronic obstructive pulmonary disease due to any cause. This listing evaluates the severity of obstructive lung diseases such as asthma, emphysema, and chronic bronchitis by measuring the FEV1. The spirometry used to measure the FEV1 requires the ability to follow very simple instructions, and even frail people can perform the test. You will be asked to put on a nose clip, take as deep a breath as possible, and then blow it out as hard and fast as you can through your mouth into a tube. The procedure will be repeated at least three times.

If the test results are at least 70% of normal expected values, the test will end there. Otherwise, you will repeat it three times, after inhaling a bronchodilator drug to see if the results improve. If the person administering your spirometry does not think you put forth maximum effort, you will be sent for repeat testing. You may also be sent for retesting if the testing facility did the spirometry incorrectly, and this frequently happens.

An FEV1 equal to or less than the values in Table I satisfies the listing. Because taller people tend to have higher FEV1 values, height is taken into account. If you have a spinal deformity, the SSA substitutes distance between the fingertips with outstretched arms for height. Although sex and age also affect FEV1 values, these are not considered. In using Table I, the SSA will use your highest FEV1, whether before or after bronchodilators.

If you have been told you have active tuberculosis (TB), the SSA should not schedule you for spirometry until the infection is controlled. Active TB can contaminate a spirometer and pass the infection on to other people who are tested after you, unless special sterilization techniques of all the equipment are used. Some spirometers are not safely usable again if infected with TB. Also, if you have active TB, health care personnel need to be able to take special precautions to avoid acquiring infection from you. If you just have a positive skin test (PPD) for TB, that does not in itself mean the presence of active TB in your lungs or elsewhere in your body.

® Chronic restrictive ventilatory disease due to any cause. This listing evaluates the severity of restrictive breathing disorders such as might be caused by pulmonary fibrosis, gross obesity, chest or spinal deformities, lobectomy or pneumonectomy, pneumoconiosis, or other disorders, by measuring the FVC. The spirometry comments discussed above in part ® apply here. Because the FVC and FEV1 are measured from the same tracings, no extra testing is required to obtain both values. Some restrictive breathing disorders are evaluated under Part ® if granting benefits doesn't occur under part ®. (See Part ©, below.)

Table II provides the FVC values necessary to satisfy part ® of the listing. As with part ®, if you have a spinal deformity, the SSA substitutes distance between the fingertips with outstretched arms for height.

Table I			
Height without shoes (centimeters)	Height without shoes (inches)	FEV1 equal to or less than (liters)	
154 or less	60 or less	1.05	
155–160	61–63	1.15	
161–165	64–65	1.25	
166–170	66-67	1.35	
171–175	68-69	1.45	
176–180	70–71	1.55	
181 or more	72 or more	1.65	

Table II			
Height without shoes (centimeters)	Height without shoes (inches)	FEV1 equal to or less than (liters)	
154 or less	60 or less	1.25	
155–160	61–63	1.35	
161–165	64–65	1.45	
166–170	66–67	1.55	
171–175	68-69	1.65	
176–180	70–71	1.75	
181 or more	72 or more	1.85	

- © Chronic impairment of gas exchange due to clinically documented pulmonary disease. This listing evaluates the severity of some restrictive breathing disorders and some cases of advanced emphysema by measuring gas exchange—the ability of the lungs to release carbon dioxide waste gas from the bloodstream and absorb oxygen from the air. The tests used are DLCO and ABGS. Gas exchange problems will be seen in impairments like pulmonary fibrosis and pneumoconiosis, which involve direct lung damage if the disease is advanced. Restrictive breathing disorders that do not involve damage to lung tissue itself, such as spinal or chest deformities, obesity, lobectomy, or stroke, will not have decreased gas exchange. To meet listing ©, you must have 1, 2, or 3.
  - 1. Single breath DLCO less than 10.5 ml/min/mm Hg or less than 40% of the predicted normal value. DLCO is expressed as milliliters of carbon monoxide per minute per millimeter of mercury pressure that can diffuse through the lung, commonly written ml/min/mm Hg. Predicted normal values of DLCO vary according to age, sex, and height. Doctors refer to standard tables to find predicted normal values, and such values are included on DLCO test reports. Generally, only hospitals have the kind of equipment and skills to perform DLCO testing.
  - 2. ABGS values of oxygen pressure (PaO<sub>2</sub>) and carbon dioxide pressure (PaCO<sub>2</sub>) measured at least twice at rest (awake, and sitting or standing) and twice breathing room air. The tests must be done at least three weeks apart but within a six-month period.

The results must be equal to or less than the values specified in the applicable Table III-A, Table III-B, or Table III-C, below. As the altitude at which a person lives increases, the lower pressure of oxygen in the air means that normal arterial oxygen pressure decreases, and normal arterial carbon dioxide pressure increases. That is why different tables are used. They show the levels of oxygen and carbon dioxide pressures necessary to satisfy the listing, depending on the altitude of the laboratory that did the test.



If you have an ABGS test, make sure of the following:

- The person intending to stick a needle in your radial artery first tests the blood flow from the other artery in your wrist so that in the unlikely event your radial artery is damaged you will still have blood flow to your hand. This first test is quick, easy, and harmless.
- Once the arterial blood sample is obtained and the syringe removed, insist that the person who took the blood apply direct pressure over the puncture site for at least five minutes; if you are on anticoagulation drugs that make your blood thinner than normal, the time should be longer. Do not let the technician put on a bandage until he or she has applied pressure for the required amount of time and you are not bleeding.

The SSA should not send you for an ABGS unless you do not qualify for disability based on your FVC or DLCO. The DDS might try to schedule you for an ABGS along with spirometry to obtain your FVC and DLCO. If so, refuse the ABGS until the DDS or SSA assures you that your claim cannot be granted without the ABGS.

3. ABGS values of oxygen pressure (PaO<sub>2</sub>) and carbon dioxide pressure (PaCO<sub>2</sub>) measured during exercise and while breathing room air. A catheter must be inserted into your radial artery to obtain accurate results of ABGS during exercise. The purpose is to identify people who show a marked fall in arterial oxygen with exercise.

To qualify for disability, your ABGS must be equal to or less than the values specified in the applicable Table III-A, Table III-B, or Table III-C. The tables measure low levels of exercise. Exertion put forth on exercise tests is measured in METs. A person sitting quietly is using about one MET. Sedentary work requires five METs' exertion, and the inability to do at least five METs of exercise without significant drops in arterial oxygen will qualify you under this listing.

Table III-A, Applicable at Test Sites Less Than 3,000 Feet Above Sea Level		
Arterial PCO <sub>2</sub> (mm Hg)	AND	Arterial PO <sub>2</sub> Equal to or Less Than (mm Hg)
30 or below		65
31		64
32		63
33		62
34		61
35		60
36		59
37		58
38		57
39		56
40 or above		55

Table III-C, Applicable at Test Sites Over 6,000 Feet Above Sea Level			
Arterial PCO <sub>2</sub> (mm Hg)	AND	Arterial PO <sub>2</sub> Equal to or Less Than (mm Hg)	
30 or below		55	
31		54	
32		53	
33		52	
34		51	
35		50	
36		49	
37		48	
38		47	
39		46	
40 or above		45	

Table III-B, Applicable at Test Sites 3,000–6,000 Feet Above Sea Level		
Arterial PCO <sub>2</sub> (mm Hg)	AND	Arterial PO <sub>2</sub> Equal to or Less Than (mm Hg)
30 or below		60
31		59
32		58
33		57
34		56
35		55
36		54
37		53
38		52
39		51
40 or above		50

#### **b.** Residual Functional Capacity

Generally speaking, if your breathing test values are at least 80% of what would be expected of a normal person, you would have no pulmonary restrictions and would not qualify for an RFC.

In any other situation, your RFC should restrict you from working around excessive dust and fumes. For example, the SSA should not tell you that you can work in agricultural jobs involving exposure to excessive grain dust; heavy construction work involving driving bulldozers and similar equipment where you could be exposed to excessive dust and fumes; mining jobs that expose you to excessive coal or rock dust; or industrial jobs where you might be exposed to excessive chemical fumes. If you have done work involving exposure to excessive dust or fumes that caused your breathing problems, such as coughing or shortness of breath, make sure the SSA knows. Also tell the SSA about other environmental factors, such as extreme heat or cold, that cause your breathing problems to worsen.

Most RFCs for breathing disorders also involve exertional restrictions regarding how long you can stand and walk, lift, and carry. There are no exact rules, but values closer to the listing should get lower RFCs. For example, if you have chronic obstructive lung disease, are 63 inches in height, and have an FEV1 of 1.15 liters or lower, you would meet the listing. It is also reasonable that if your FEV1 is 1.3 liters—close to the listing—you should receive an RFC for no higher than sedentary work with avoidance of excessive dust and fumes.

Similar judgment should be applied to the restrictive breathing disorders and the various types of tests—FVC, DLCO, and ABGS—used to evaluate severity. But remember that the SSA makes decisions based on all the facts in your case—lab test results, physical and x-ray abnormalities, your symptoms, and the nature and severity of any other impairments you might have. Heart disease is particularly important in increasing limitations imposed by lung disease, because the heart and lungs are closely dependent on each other. Medical judgment must be carefully applied case by case.

# 2. Listing 103.02: Chronic Pulmonary Insufficiency (Children)

The comments under Listing 3.02 regarding spirometry and testing procedure warnings apply here. Bronchopulmonary dysplasia is the most common breathing disorder that the SSA sees in children that falls under this listing. Asthma in children is also very common, so common, in fact, it has its own listing (Listing 103.03). This listing usually requires detailed records of the child's medical treatment, including hospitalizations. Children can do spirometry or other pulmonary function studies by about age six.

#### a. Listing Level Severity

To meet the listing the child's condition must satisfy (a, b, c, b, c, c, c), (b, c, c), (b, c), (b, c), (b, c), (b, c)

Table I			
Height without shoes (centimeters)	Height without shoes (inches)	FEV1 equal to or less than (liters)	
119 or less	46 or less	0.65	
120–129	47–50	0.75	
130–139	51–54	0.95	
140–149	55–58	1.15	
150–159	59–62	1.35	
160–164	63-64	1.45	
165–169	65–66	1.55	
170 or more	67 or more	1.65	

B Chronic restrictive ventilatory disease due to any cause. Table II gives the FVC values necessary to satisfy part B of the listing. If your child has a spinal deformity, the SSA substitutes the distance between the child's fingertips with outstretched arms for height.

Table II			
Height without shoes (centimeters)	Height without shoes (inches)	FEV1 equal to or less than (liters)	
119 or less	46 or less	0.65	
120–129	47–50	0.85	
130–139	51–54	1.05	
140–149	55–58	1.25	
150–159	59-62	1.45	
160–164	63-64	1.65	
165–169	65–66	1.75	
170 or more	67 or more	2.05	

- © Frequent need for either 1 or 2. The SSA doesn't define what it considers "frequent." Determining frequent need is a matter of medical judgment, but it is unlikely that once a week or less often could reasonably qualify.
  - 1. Mechanical ventilation.
  - 2. Supplemental oxygen during sleep.

- ① The presence of a tracheostomy in a child under three years of age.
- © Bronchopulmonary dysplasia characterized by any two of the following:
  - 1. Prolonged expirations.
  - 2. Wheezing, flaring, and tachypnea.
  - 3. Chest x-ray, CT scan, or MRI scan showing hyperinflation or scarring of lungs.
  - 4. Dependency on bronchodilators or diuretics.
  - 5. A frequent need for supplemental oxygen during sleep.
  - 6. Weight disturbance (an indicator of a severe chronic disease) with a or b.
    - a. Involuntary weight loss (or failure to gain weight at an appropriate rate for age). This involuntary weight loss must result in a fall of at least 15 percentiles on standard growth charts, which lasts at least two months.
    - b. Involuntary weight loss (or failure to gain weight at an appropriate rate for age). This involuntary weight loss must result in a fall to below the third percentile on standard growth charts that lasts at least two months.
- © Two required hospital admissions, each longer than 24 hours, within a six-month period for recurrent lower respiratory tract infections (that is, something more serious than merely bronchitis) or acute episodes of difficulty breathing associated with 1 or 2. The cause of the hospitalization must be related to 1 or 2, not some other impairment.
  - 1. Chronic wheezing or chronic difficulty breathing.
  - 2. Weight disturbance with a or b.
    - a. Involuntary weight loss (or failure to gain weight at an appropriate rate for age). This involuntary weight loss must result in a fall of at least 15 percentiles on standard growth charts, which lasts at least two months.
    - b. Involuntary weight loss (or failure to gain weight at an appropriate rate for age). This involuntary weight loss must result in a fall to below the third percentile on standard growth charts, which lasts at least two months.
- © Chronic hypoventilation as demonstrated by a PaCO<sub>2</sub> greater than 45 mm Hg, or chronic cor pulmonale as described under Listing 104.02 in CD Part 4. This listing deals with breathing

- disorders that involve decreased ability to move air in and out of the lungs; if such ventilation ability is severely impaired, the child will suffer from increased difficulty removing carbon dioxide waste gas from the blood and  $PaCO_2$  will increase to abnormal levels.
- Growth impairment as described under the criteria in Listings 100.02 or 100.03 in CD Part 1.

#### 3. Listing 3.03: Asthma (Adults)

Asthma is a common obstructive breathing disorder in both adults and children. The bronchial tubes have muscles in them which can open the bronchi wider by relaxing or make them smaller by contracting. Asthmatics have an abnormal tendency of their bronchi to contract. The lining of their bronchi may also become inflamed and swell, which can produce more narrowing. Attacks can occur when asthmatics inhale irritating substances, inhale substances to which they are allergic, exercise, suffer emotional distress, have exposure to cold air, or sometimes for no obvious reason.

Many asthmatics are treated effectively with bronchodilator drugs (such as theophylline or albuterol) and anti-inflammatory drugs (such as corticosteroids or cromolyn sodium). When asthma cannot be controlled with drugs, it means it may have reached a disabling level. See the discussion of episodic respiratory disease under "General Information" at the beginning of this chapter.

Because asthma is an obstructive breathing disorder, the SSA evaluates it by the FEV1 as determined by spirometry. (See comments under Listing 3.02.) Asthma can often be very effectively treated. Many asthmatics can participate in strenuous sports; some have even been Olympic athletes.

## a. Listing Level Severity

To meet the listing, you must satisfy (a) or (b).

- Ohronic asthmatic bronchitis satisfying the criteria for chronic obstructive lung disease in Listing 3.02.
- ® Attacks of asthma requiring physician intervention, not controllable with prescribed treatment, and occurring at least once every two months or at least six times a year. An inpatient hospitalization

for longer than 24 hours counts as two attacks. Medical records covering a period of at least 12 consecutive months must be available to the SSA for evaluation.

#### b. Residual Functional Capacity

In most obstructive breathing disorders, if your FEV1 is at least 80% of what would be expected of a normal person, you would have no pulmonary restrictions and would not qualify for an RFC. This is not true of asthma, however. You might breathe fine and do well on a spirometry test between asthmatic attacks, but still require an RFC because of the severity of attacks. All of the facts in your case—such as physical and x-ray abnormalities and your overall symptoms (wheezing, shortness of breath) must be considered. A good example of the SSA's needing to consider all of the facts involves exertional asthma. If you have asthmatic attacks triggered by exertion, then the FEV1 done by a spirometry test while you are in a resting state won't fully reveal the severity of your impairment.

Your RFC should always restrict you from doing work around excessive dust and fumes, or near any other airborne substance that is known to trigger your attacks. For example, the SSA should not tell you that you can work in agricultural jobs involving exposure to excessive grain dust; heavy construction work involving driving bulldozers and similar equipment where you could be exposed to excessive dust and fumes; mining jobs that expose you to excessive coal or rock dust; or industrial jobs where you might be exposed to excessive chemical fumes. If you've done work involving exposure to excessive dust or fumes that caused your breathing problems, such as coughing or shortness of breath, make sure the SSA knows. Also tell the SSA about other environmental factors, such extreme heat or cold, that cause your breathing problems to worsen.

No specific rules fit every case of asthma—medical judgment must be applied case by case. But the closer you are to satisfying the requirements of a listing, the lower your RFC should be.

#### 4. Listing 103.03: Asthma (Children)

Asthma is described in the introduction to Listing 3.03.

#### a. Listing Level Severity

To meet the listing, the child's condition must satisfy (A, B, C), or (D, C).

- An FEV1 value equal to or less than the appropriate value specified in Table I of Listing 103.02.
- ® Attacks of asthma requiring physician intervention, not controllable with prescribed treatment, and occurring at least once every two months or at least six times a year. An inpatient hospitalization for longer than 24 hours counts as two attacks. Medical records covering a period of at least 12 consecutive months must be available to the SSA for evaluation.
- © Persistent low-grade wheezing between acute asthma attacks or no extended symptom-free periods, and daytime and nighttime use of sympathomimetic bronchodilators. These include the potent beta-agonist class drugs such as albuterol (Ventolin, Proventil) and metoproteronol (Alupent), but do not include the weaker drugs theophylline or cromolyn sodium. Your doctor or pharmacist can tell you what kinds of drugs your child is taking. You can also look them up in books on drugs in bookstores and libraries or online at www.pdr.net.

Additionally, 1 or 2 must be satisfied.

- Persistent prolonged expiration with a chest x-ray or other imaging method (CAT scan, MRI scan) showing hyperinflation or peribronchial disease.
- Short courses of treatment with corticosteroid drugs that average more than five days per month for at least three months during a 12month period.
- ① Growth impairment as described under the criteria in Listings 100.02 or 100.03. (See CD Part 1.)

#### 5. Listing 3.04: Cystic Fibrosis (Adults)

Cystic fibrosis (CF) is a genetic disease resulting in difficulty clearing secretions from the lungs. People

with CF are susceptible to frequent episodes of pneumonia and bronchitis, and to chronic lung damage. Despite the fact that research into new treatments for CF holds great promise, it remains a dangerous and debilitating disease with a high mortality rate before age 30. If you have CF, it is more likely than not that the SSA will allow you under this listing. Even if you don't have the exact requirements for any part of this listing, you may have a combination of problems of equivalent severity. Many CF sufferers have digestive system problems and nutritional problems such as weight loss. If so, the SSA must consider them. Also see the discussion of episodic respiratory disease under "General Information" at the beginning of this chapter.

#### a. Listing Level Severity

To meet the listing you must satisfy (a), (b), or (c).

An FEV1 value satisfying the values in Table I, below. FEV1 is measured by spirometry; for more information on spirometry, see the comments under Listing 3.02. If you suffer from a spinal deformity, the SSA substitutes the distance between the fingertips with outstretched arms for height.

Table I			
Height without shoes (centimeters)	Height without shoes (inches)	FEV1 equal to or less than (liters)	
154 or less	60 or less	1.45	
155–160	61–63	1.55	
161–165	64–65	1.65	
166–170	66-67	1.75	
171–175	68-69	1.85	
176–180	70–71	1.95	
181 or more	72 or more	2.05	

® Episodes of bronchitis, pneumonia, hemoptysis, or respiratory failure requiring physician intervention, occurring at least once every two months or at least six times a year. An inpatient hospitalization for longer than 24 hours counts as two attacks.

- Medical records covering a period of at least 12 consecutive months must be available to the SSA for evaluation.
- © Persistent pulmonary infection accompanied by additional recurrent, symptomatic episodes of bacterial infection occurring at least once every six months and requiring intravenous antibiotics or inhaled antibiotics delivered as a fine mist.

## b. Residual Functional Capacity

In most obstructive breathing disorders, if your FEV1 is at least 80% of what would be expected of a normal person, then you would have no pulmonary restrictions and would not qualify for an RFC. This may not be true of CF, however, because of the possibility of chronic illness related to pulmonary infections and weight loss. Also, be sure to let the SSA know of all activities during a typical day devoted to prevention of worsening or the treatment of CF—such as physical therapy to help drain abnormal secretions from your chest, drugs taken, and their side effects.

Your RFC should always restrict you from doing work around excessive dust and fumes or other airborne substances known to worsen your pulmonary symptoms. If you have done work involving exposure to excessive dust or fumes that caused you symptoms, such as coughing or shortness of breath, make sure you tell the SSA. Also let the SSA know about other environmental factors, such as extreme heat or cold, that affect your breathing.

No specific rules fit every case of CF—medical judgment must be applied case by case. But the closer you are to satisfying the requirements of a listing, the lower your RFC should be. The relatively few adults with CF who don't qualify under the listings are usually restricted to an exertional level of no higher than sedentary work.

## 6. Listing 103.04: Cystic Fibrosis (Children)

Cystic fibrosis is described in the introduction to Listing 3.04.

#### a. Listing Level Severity

The meet the listing the child must satisfy part  $(\mathbb{B}, \mathbb{B})$ ,  $(\mathbb{C}, \mathbb{D})$ , or  $(\mathbb{C})$ .

An FEV1 value satisfying the values in Table II, below. FEV1 is measured by spirometry; for more information on spirometry, see the comments under Listing 3.02. If you suffer from a spinal deformity, the SSA substitutes the distance between the fingertips with outstretched arms for height.

Table II			
Height without shoes (centimeters)	Height without shoes (inches)	FEV1 equal to or less than (liters)	
119 or less	46 or less	0.75	
120–129	47–50	0.85	
130–139	51–54	1.05	
140–149	55–58	1.35	
150–159	59-62	1.55	
160–164	63-64	1.85	
165–169	65-66	2.05	
170 or more	67 or more	2.25	

- To children in whom pulmonary function testing cannot be done (usually children under the age of six), the presence of any two of the following:
  - History of dyspnea or accumulated secretions.
     Accumulated secretions may be assumed when the child suffers from repetitive coughing or cyanosis.
  - Persistent rales and rhonchi or a substantial decrease in the loudness of air moving in bronchi related to plugging of the trachea or bronchi.
  - 3. X-rays showing extensive lung disease—seen as a thickening of the larger bronchial airways or the persistence of disease around bronchi in both lungs.
- © Persistent pulmonary infection accompanied by additional recurrent, symptomatic episodes of bacterial infection occurring at least once every six months and requiring intravenous antibiotics or inhaled antibiotics delivered as a fine mist.

- D Episodes of bronchitis, pneumonia, hemoptysis, or respiratory failure requiring physician intervention, and occurring at least once every two months or at least six times a year. An inpatient hospitalization for longer than 24 hours counts as two attacks. Medical records covering a period of at least 12 consecutive months must be available to the SSA for evaluation.
- © Growth impairment as described under the child growth impairment Listings 100.02 or 100.03. (See CD Part 1.)

## 7. Listing 3.06: Pneumoconiosis (Adults)

Pneumoconiosis is a broad term for lung diseases caused by breathing small, dust-like particles into the lungs. Some possible causes of pneumoconiosis are excessive exposure to asbestos, rock dust (which can cause silicosis), coal dust (which can cause coal worker's pneumoconiosis), and metal dusts (including beryllium, barium, antimony, cobalt, tin, or iron oxides). Although pneumoconiosis is often a fibrotic lung disease, it can also cause obstructive lung disorders. The SSA may require testing of the FEV1, FVC, ABGS, or DLCO.

#### a. Listing Level Severity

To meet the listing, an appropriate imaging technique (such as chest x-ray, CAT scan, or MRI scan) of the lungs must show pneumoconiosis. The severity of the pneumoconiosis is then evaluated under the applicable criteria in Listing 3.02.

#### **b.** Residual Functional Capacity

The RFC discussion for Listing 3.02 applies here.

#### 8. Listing 3.07: Bronchiectasis (Adults)

Bronchiectasis is a serious chronic infection of some bronchial tubes, which can affect the surrounding lung tissue by causing pneumonia. Occasionally, antibiotics cannot cure the infection and surgical removal of a part of a lung is required. Few people qualify under this listing because treatment with antibiotics is usually effective. See the discussion of episodic respiratory disease under "General Information" at the beginning of this chapter.

#### a. Listing Level Severity

To meet the listing, an appropriate imaging technique (such as chest x-ray, CAT scan, or MRI scan) of the lungs must show bronchiectasis. Additionally, you must satisfy part (a) or (b) of the listing.

- The severity of the breathing impairment satisfies any of the criteria in Listing 3.02.
- B Episodes of bronchitis, pneumonia, hemoptysis, or respiratory failure requiring physician intervention, and occurring at least once every two months or at least six times a year. An inpatient hospitalization for longer than 24 hours counts as two attacks. Medical records covering a period of at least 12 consecutive months must be available to the SSA for evaluation.

#### b. Residual Functional Capacity

The RFC discussion for Listing 3.02 applies here.

# 9. Listing 3.08: Mycobacterial, Mycotic, and Other Chronic Persistent Infections of the Lung (Adults)

Mycobacterial infections often involve common types of bacteria that cause tuberculosis (TB). Mycobacterial infections can also involve atypical types of bacteria, which tend to be very difficult to treat. TB's presence in the U.S. decreased for many years; however, a strain of TB that is resistant to all known drugs is spreading. TB can cause restrictive lung disease.

If you have been told you have active tuberculosis (TB), the SSA should not schedule you for

spirometry until the infection is controlled. Active TB can contaminate a spirometer and pass the infection on to other people who are tested after you, unless special sterilization techniques of all the equipment are used. Some spirometers are not safely usable again if infected with TB. Also, if you have active TB, health care personnel need to be able to take special precautions to avoid acquiring infection from you. If you just have a positive skin test (PPD) for TB, that does not in itself mean the presence of active TB in your lungs or elsewhere in your body.

Mycotic infections are fungal infections such as blastomycosis, aspergillosis, histoplasmosis, and candidiasis. Several drugs have been developed to treat mycotic infections. Untreated fungal infections or fungal infections that do not respond to treatment can cause restrictive lung disease.

Any other type of chronic persistent infection of the lungs can also potentially qualify under this listing. Such infections more often appear in chronically debilitated people whose immune systems are weakened, such as those who have AIDS or are undergoing chemotherapy for cancer.

#### a. Listing Level Severity

The severity of the impairment is evaluated under the criteria in Listing 3.02.

#### b. Residual Functional Capacity

The RFC discussion for Listing 3.02 applies here.

## 10. Listing 3.09: Cor Pulmonale Caused by Chronic Pulmonary Vascular Hypertension (Adults)

Cor pulmonale is heart disease caused by lung disease, specifically by pulmonary vascular hypertension. The right side of the heart pumps blood through the arteries of the lungs, which normally have little resistance to blood flow. Pulmonary hypertension puts strain on the right side of the heart because it has to pump blood against the abnormally high pressures in the blood vessels of the lungs. This can cause the heart to enlarge and potentially to go into failure.

#### a. Listing Level Severity

Clinical (physical or laboratory) abnormalities must show overloading or failure of the right ventricle of the heart, although complete right-sided heart failure is not necessary. Abnormalities acceptable to the SSA to show cor pulmonale are listed below. You don't have to have all of them, but the SSA should be able to conclude that cor pulmonale is present based on the abnormalities you do have:

- early diastolic right-sided gallop
- neck vein distention
- hepatomegaly

- enlargement of the right ventricular outflow tract, which may be seen on chest x-ray, CAT scan, or MRI scan
- peripheral edema
- right ventricular hypertrophy seen on an EKG the minor EKG abnormality called p-pulmonale is not evidence of cor pulmonale
- increased pulmonary artery pressure measured from cardiac catheterization, and
- hypoxemia.

Besides clinical evidence of cor pulmonale, you must satisfy (a) or (b), below.

- Average pulmonary artery pressure greater than 40 mm Hg. Pulmonary artery pressures must be obtained by cardiac catheterization, which is a test the SSA cannot require you to undergo—that is, the test must be done by your treating physician.
- ® Arterial hypoxemia as evaluated under Listing 3.02©2. This takes into account the possibility of associated low arterial oxygen levels.

#### b. Residual Functional Capacity

If you don't meet the listing, the SSA should apply medical judgment case by case. The doctor will focus on your symptoms, especially shortness of breath on exertion and fatigue. You and your doctor must let the SSA know how these symptoms limit your activities of daily living. For example, do you get swelling in your feet if you stand too long? How long? Do you get short of breath or tired with a certain amount of exertion? How much? How long does it take you to walk a block? Are you unable to vacuum because of shortness of breath? Also list the environmental factors that make your symptoms worse—such as excessive dust and fumes, or extreme heat or cold. The more information the SSA has about your symptoms and limitations, the better the decision that it makes.

# 11. Listing 3.10: Sleep-Related Breathing Disorders (Adults)

Frequent episodes of cessation of breathing during sleep are usually obstructive sleep apnea, which is often related to obesity. One possible consequence of obstructive sleep apnea is pulmonary vascular hypertension, which can cause cor pulmonale. Central sleep apnea is less common and may be related to mental disorders involving brain damage.

Depending on whether the sleep apnea relates to cor pulmonale or a mental disorder, Listing 3.09 or Listing 12.02 (CD Part 12) may apply. Listing 12.02 deals only with mental disorders. A person with a mental disorder and central sleep apnea should be evaluated under both listings.

#### a. Listing Level Severity

The severity of the impairment is evaluated under Listing 3.09 or Listing 12.02, as appropriate.

#### b. Residual Functional Capacity

Two primary factors are evaluated in determining an RFC: the nature and severity of the disorder causing the sleep-related breathing disorder, and how much daytime sleepiness from disrupted sleep interferes with your ability to function. The SSA doctors should use medical judgment to determine your RFC.

If you have significant daytime sleepiness, it is particularly important that you do not drive, work at unprotected heights, or work around hazardous machinery of any kind because of the risk to yourself or others. How long you can stand, walk, or lift depends on the underlying diseases. If you suffer mainly from obesity, you could probably lift a significant amount of weight; if you have cor pulmonale, you may be able to lift only ten or 20 pounds.

## 12. Listing 3.11: Lung Transplant (Adults)

This listing deals with cases where one or both lungs may be transplanted, in an attempt to save a patient from terminal lung disease. In some instances, just one lobe (part) of one lung may have been transplanted. Rarely, heart-lung combination transplants have been done. Not everyone is a candidate for lung transplantation. Many are ineligible as a result of advanced age or coexistent medical conditions (like kidney failure) that would greatly decrease the chances of survival.

The one-year survival rate for double-lung transplants is 76%. For a single-lung transplant the rate is 75%. The most important factors affecting survival are the same as those for all organs transplants:

immune rejection and infection. The reason infection is a problem is that the potent drugs used to keep the recipient's body from rejecting the new lung tissue also decrease immune resistance to many kinds of infection: bacterial, viral, fungal, and parasitic.

Therapeutic drugs often result in significant complications, such as kidney failure and neurological toxicity. Corticosteroids, for example, can result in cataracts and osteoporosis.

Lung transplants require close monitoring for immune rejection and other complications, particularly infections. The first year after transplantation is particularly important, although problems can develop at any time.

#### a. Listing Level Severity

If you have had a lung transplant, the SSA considers you disabled for one year following surgery. After that, your residual impairment will be evaluated under whatever lung listings are appropriate.

The qualification for 12 months of disability benefits is automatic and comes with no restrictions whatsoever. For example, you could be feeling great eight months after surgery and your doctor could even tell the SSA he or she thinks you could work. But you would still qualify under the listing, if you choose to make use of it.

#### b. Residual Functional Capacity

Because your disability allowance is automatic, no RFC applies to lung transplants. After the requisite 12 months have elapsed, your case will be evaluated under whatever listings are appropriate to your particular circumstances. The SSA should be extremely hesitant to terminate your benefits unless you and your treating doctors think you are ready to return to some kind of work. Note that after a lung transplant, a person's exercise capacity is decreased for a period of years and may never return to normal.

# 13. Listing 103.11: Lung Transplant (Children)

The comments under Listing 3.11 apply here, even though the particular types of lung disease that may necessitate a transplant may differ in children.

#### a. Listing Level Severity

A child is considered disabled for one year following surgery and, as with an adult, no other medical factors can alter this qualification. After that year, the child's residual impairment is evaluated under whatever lung listings are appropriate.