

CHEST PHYSIOTHERAPY

For the patient, chest physiotherapy is the most time consuming phase of routine home care. Though everyone with COPD may benefit from chest physiotherapy (CPT) at some time, it is highly recommended by pulmonary specialists for those who produce a lot of thick, sticky mucus and have an ineffective cough which does not do the job of removing the mucus.

Do you produce more phlegm in the morning or after a nap in the afternoon? If you do, it is probably because while reclining, the mucus has collected in the upper airways where the cough reflex mechanism is located. When you first rise, the cough reflex is stimulated and you cough. You may experience spasms of coughing until you can get rid of the mucus.

This mucus didn't spontaneously appear when you sat up. It collected gradually in the upper airways and in the back of the throat. This also indicates that there may be mucus that needs to come out of other areas of the lungs. It could also mean that you have post nasal drainage, in which case the mucus could drain down into the throat and into the upper airways creating a possible source of infection in the lungs. CPT will help you to get rid of more mucus.

As mentioned above, post nasal drainage can drain into the lungs. If you have chronic nasal congestion and drainage, try a saline spray specifically made to help open sinuses. These preparations may be obtained over-the-counter and are not potentially dangerous as other nose sprays.

Chest physiotherapy consists of the following techniques: bronchial drainage, clapping, diaphragmatic breathing with pursed-lips, coughing and controlled coughing.

Bronchial drainage. A glance at the bronchial tree

(page 2) shows bronchial tubes fanning upward, horizontally and downward. Various positions will allow gravity to help the flow from these smaller bronchial tubes into larger airways, thus, permitting expectoration.

Tiny “plugs” of mucus can interfere with normal drainage of the lungs causing difficulty in breathing. When they have finally coughed them up, patients are often amazed that these small mucous plugs have caused such difficulty.

The postural drainage positions which are illustrated here are modified drainage positions. The patient should remain in each position for 5 to 10 minutes. Each drainage position is designed to relieve the congestion in particular parts of the lungs. If after holding one of these positions for the specified length of time, a moderate amount of mucus is brought up, the position may be held for a longer period of time. Sit up and cough properly before changing to a new drainage position. To minimize the possibility of vomiting, drainage is best done before meals or at least one hour after eating. Early in the morning and at bedtime are recommended for postural drainage. Note: If you have high blood pressure or a heart condition, check with your physician before attempting postural drainage.

POSTURAL DRAINAGE POSITIONS



Both Lower Lobes
(Posterior - Back Areas)
Lie on Stomach.

Both Lower Lobes
(Anterior - Front Areas)
Lie on Back.



Left Lower Lobe
(Middle Areas)
Lie on Right Side -
Quarter Turn From Back.



Right Middle Lobe
Lie on Left Side -
Quarter Turn
From Back



Right Lower Lobe
Lie on Left Side.



Left Lower Lobe
Lie on Right Side.

Note: A pillow may be used for the head only in all positions. Shoulders must rest on the bed.

Please note the following concerning postural drainage positions: books covered with pillows (top two illustrations on this page) or a sturdy suitcase covered with pillows (bottom two illustrations on this page) work quite well for drainage if you do not have access to a slant board or table. A foam rubber wedge also works very well. A pillow may be used for the head in all positions; shoulders should rest on the bed.

Clapping or percussion with a cupped hand over the area of the lung to be drained helps dislodge mucus and starts it flowing into larger airways. Then it can be easily expectorated. The hand is in a cupped position (refer to figure); and, as the hand firmly, but not painfully, claps the chest, it creates a percussion throughout the

area to be drained and helps to mobilize the mucus. The cupped hand, which forms a pocket of air cushions the blows to the chest with about 5 pounds of pressure. Clapping is performed only over the chest area and is never done over bare skin. Note: If you have osteoporosis (abnormally weak bones) or take steroids, check with your physician before attempting percussion.



You can do the clapping yourself in certain areas, such as on the front and sides of your chest. Of course, this is tiring and it is better if another person can do the clapping in all positions. Mechanical percussors and vibrators are now available for home use. Usually 2 to 3 minutes of clapping in each position is sufficient.

Diaphragmatic breathing with pursed lips. (Chapter 3) During postural drainage, it is important to breathe properly using your diaphragm and abdominal muscles. Except when gently coughing, use pursed-lip breathing during exhalation. Remember, pursed-lip breathing helps keep the airways open and this is absolutely essential in order for postural drainage to be effective.

Coughing gently or making short grunting noises with the mouth slightly open will help loosen the mucus. Do this periodically throughout the drainage procedure.

Controlled coughing is one of the essential techniques in good respiratory care. You should perform this maneuver after each drainage position and often throughout the day. There is more to a cough than just “cough!” It is important that you don’t waste energy on an unproductive cough.

Unless you are in a drainage position, the mucus must literally be pumped up against gravity through a series of branching tubes. This obviously requires much energy; therefore, it is wise to avoid uncontrolled coughing.

You may feel the need to cough after you have expect-

torated a large amount of mucus. Sometimes there is more mucus; but, often the coughing is due merely to an irritated throat. If you still feel the need to cough or feel there is mucus at the back of the throat, gargle with equal parts of lemon juice and hot water. This will further loosen the mucus and soothe the throat.

It may be impossible to keep coughing constantly under control. Mucus can accumulate so suddenly in the upper airways that coughing spells are difficult to control; but, you must try. If you are lying down, sit up, for it is practically impossible to control coughing while lying down in bed. If you are unable to get out of the bed, simply flex your knees towards your chin. This will be easy to do if the head of the bed is elevated or if you roll over on your side. Such a position releases tension in the abdominal muscles. The abdominal muscles are very powerful muscles used in coughing and exhaling.

Controlled Coughing Technique

The controlled coughing technique will assist with the removal of mucus and minimize uncontrolled, spasmodic, coughing spells.

- Assume a sitting position with the shoulders relaxed, head and spine slightly flexed, feet firmly on the floor to provide the body with support when leaning forward. Gently fold your arms and hands across your stomach holding a pillow if you find this more comfortable.
- Force your arms sharply inward and upward while coughing in order to cause the abdominal muscles and diaphragm to aid in the cough. This will be less tiring and will produce a more effective cough.



- Try to inhale slowly and deeply through the nose allowing the stomach to come out and the diaphragm to drop. (Deep breathing through the mouth encourages upper chest breaths which may not allow the lungs to fill properly. See page 37 for mouth breathing.)
- Hold your breath 2 - 4 seconds.
- Cough 2 or 3 small blasts of air. The first cough loosens the mucus and the next moves it so it can be expectorated. If you are producing a low pitched, hollow sound, the cough is coming deep from within the chest. High pitched noises generally originate higher in the chest. The high chested cough may be good for clearing the upper airways once the mucus has traveled that far; but, it is not conducive to getting the mucus up from the lower airways.
- Relax. . . breath easily. Do not take big, gulping breaths after a cough as this may cause coughing spasms and may force the mucus back into the lungs. If you still feel the urge to cough, try drinking a little tepid water or gargle with equal parts of lemon juice and hot water. Lemon juice seems to be especially good to cut the phlegm and to soothe the throat.
- Repeat the process throughout the day and after each postural drainage position.
- Inspect your mucus. Note its color and consistency for this is very important for early detection of possible infection.



Summary of a Controlled Cough

- Inhale deeply through the nose.
- Pause.
- Cough 2 to 3 sharp staccato cough with proper hand/arm placement.
- Breathe in easily through the nose.