



Lung Volume Expansion Therapy

Lung Volume Expansion Therapy is a type of lung exercises used to prevent and improvement of atelectasis (lung collapsing). Normally this therapy is indicated for post-surgery, acute lung illness such as pneumonia, COVID-19, or any situation with limited activity such as bed ridden.

The effectiveness of the therapy can improve pulmonary function test, respiratory muscle strength, chest radiological changes, etc.

There are different medical devices for this therapy; Incentive spirometer (*1), Ezpap® (*2), Accupap® (*3).

Incentive spirometer

A very simple device; it could be used at hospital as well as at home because you don't need gas source and flow meter for this. That can teach you breathe correctly; inhale slowly and deeply, hold the breath for 3 to 5 seconds, and exhale normally. In hospitals we normally recommend taking 10 breaths with the device every 1 to 2 hours while awake.



Ezpap®

is the lung expansion therapy device to sustain positive airway pressure and increase functional residual capacity (FRC). Increasing FRC could improve atelectasis. You breathe in and out through the mouthpiece or the mask and can see the airway pressure with manometer. This device needs gas source and a flowmeter.



Accupap®

is another lung expansion device with positive airway pressure. It improves atelectasis and functional residual capacity (FRC) as well. You can set the desired positive airway pressure and the device keeps the pressure consistently during the therapy. This device needs gas source and a flowmeter.



Positive Expiratory Pressure (PEP) therapy devices such as **Acapella®** and **Aerobika®** are sometimes confused with Lung Volume Expansion Therapy devices. Those devices are for helping mobilize the secretion with vibration and clear out the airway. But because you breathe in and out through the device, it could be used as lung volume expansion therapy as well.



Overall, lung volume expansion therapy stimulates efficient deep breathing and could show immediate effects on opening up the lung and reduce atelectasis.