What is a spirometer

Spirometry is the technique used to measure lung capacity and forced expiratory volume in 1s amount of air that can be maximally expired in 1s after complete inhalation. This means that this test can show what the patient's lung functionality. The patient takes a deep breath in filling up their lungs (nose is pegged closed) and exhaling fully. By doing this it will show two things the first is the capacity of the patient's lungs by how long they can actually hold the exhale and the second how healthy the lungs are by how far they can push the bell in the apparatus.

Traditionally, this was done with a water sealed spirometer. The instrument consists of an air filled bell hanging upside down in a container of water tubing connects the air inside the bell with the patient's mouth, a nose clip occluding nasal airflow with exhalation the bell moves upward with inhalation, it moves downward. Movements of the bell are quantified with a ruler and recorded (Movements are now quantified by a computer that has sensors on the bell and it monitors the movements). Carbon Dioxide is removed from the expiratory gas by an absorber, and oxygen is supplied to the inspiratory gas to compensate for oxygen consumption during the procedure.

Why use one

Lung disease is the primary cause of death in patients with CF accounting for 90% fatalities in this disorder.

From early infancy onwards the combination of infection and inflammation causes ongoing damage to the airways leading to progressive loss of lung function.

Slowing down the loss of lung function through reduction of pulmonary infection and inflammation is the cornerstone of treatment in CF.

So every patient with CF therefore, it is important to monitor the level of lung function carefully and repeatedly.