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**EXAMINATION TECHNIQUE IN PULMONOLOGY. SPIROMETRY**

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Spirometry (meaning *the measuring of breath*) is the most common of the [pulmonary function tests](http://en.wikipedia.org/wiki/Pulmonary_function_test) (PFTs), measuring [lung](http://en.wikipedia.org/wiki/Lung) function, specifically the amount (volume) and/or speed (flow) of air that can be inhaled and exhaled. Spirometry is an important tool used for generating pneumotachographs, which are helpful in assessing conditions such as [asthma](http://en.wikipedia.org/wiki/Asthma), [pulmonary fibrosis](http://en.wikipedia.org/wiki/Pulmonary_fibrosis), cystic fibrosis.

[Spirometry is indicated for to diagnose or manage asthma, to detect respiratory disease in patients presenting with symptoms of breathlessness, and to distinguish respiratory from cardiac disease as the cause, to measure bronchial responsiveness in patients suspected of having asthma, to diagnose and differentiate between [obstructive lung disease](http://en.wikipedia.org/wiki/Obstructive_lung_disease) and [restrictive lung disease](http://en.wikipedia.org/wiki/Restrictive_lung_disease) , to conduct pre-operative risk assessment before anaesthesia or [cardiothoracic surgery](http://en.wikipedia.org/wiki/Cardiothoracic_surgery), to measure response to treatment of conditions which spirometry detect etc.](http://en.wikipedia.org/wiki/Cystic_fibrosis) The spirometry test is performed using a device called a [spirometer](http://en.wikipedia.org/wiki/Spirometer), which comes in several different varieties.The basic forced volume vital capacity (FVC) test varies slightly depending on the equipment used. Generally, the patient is asked to take the deepest breath they can, and then exhale into the sensor as hard as possible, for as long as possible, preferably at least 6 seconds. It is sometimes directly followed by a rapid inhalation (inspiration), in particular when assessing possible [upper airway obstruction](http://en.wikipedia.org/wiki/Upper_airway_obstruction). Sometimes, the test will be preceded by a period of quiet breathing in and out from the sensor (tidal volume), or the rapid breath in (forced inspiratory part) will come before the forced exhalation. During the test, soft nose clips may be used to prevent air escaping through the nose. Filter mouthpieces may be used to prevent the spread of microorganisms. The maneuver is highly dependent on patient cooperation and effort, and is normally repeated at least three times to ensure reproducibility.

Since results are dependent on patient cooperation, FVC can only be underestimated, never overestimated. Due to the patient cooperation required, spirometry can only be used on children also. This test is not suitable for patients who are unconscious, heavily sedated, or have limitations that would interfere with vigorous respiratory efforts. Other types of lung function tests are available for infants and unconscious persons.