

# Who are we?

Chest Care Clinic, Kharghar team of Pulmonary Specialists we focus on the patient centered diagnostics and pulmonary management. We currently offer pulmonary function testing, home oximetry and complete sleep studies. We also offer counselling on TB medications, second line TB treatment for MDR / XDR TB, second opinion on pulmonary problems.

We have special skills in counselling for interventional procedures like lung biopsy, bronchoscopy and thoracoscopy which we currently perform for diagnosis of lung diseases at multi-specialty hospitals.

**BREATHE AND LIVE FREE**



## **CHEST CARE CLINIC, KHARGHAR**

**Dr. VISHAL GUPTA- CHEST SPECIALIST**  
**Dr. DEEPIKA UGHAD- CHEST SPECIALIST**

**TIMINGS: MON TO SAT , 10:00 AM  
TO 1:00 PM AND 5:00 PM TO TO 9:00  
PM. SUNDAY CLOSED**

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# **SPIROMETRY AND PULMONARY FUNCTION TESTING**



**Note:** the information below is a general guide only. The arrangements, and the way tests are performed, may vary between different hospitals. Always follow the instructions given by your doctor or local hospital.

Spirometry is a test that can help diagnose various lung conditions, most commonly chronic obstructive pulmonary disease (COPD). Spirometry is also used to monitor the severity of some interstitial lung disease and Asthma, and their response to treatment. It helps predict the decline in lung functions and helps act in time.

Spirometry shows how well you breathe in and out and **spirometer** is the device that is used to make the measurements.

## How is it done?

If it has not already been done, you will have your weight and height measured. For the spirometry itself, you need to breathe into the spirometer machine. First you breathe in fully and then seal your lips around the mouthpiece of the spirometer. You then blow out as fast and as far as you can until your lungs are completely empty. This can take several seconds. You may also be asked to breathe in fully and then breathe out slowly as far as you can.

A clip may be put on to your nose to make sure that no air escapes from your nose. The measurements may be repeated two or three times to check that the readings are much the same each time you blow into the machine.

## What does the spirometer measure?

Spirometry measures the amount (volume) and/or speed (flow) of air that can be inhaled and exhaled. The most common measurements used are

- Forced expiratory volume in one second (FEV1). This is

the amount of air you can blow out within one second. With normal lungs and airways you can normally blow out most of the air from your lungs within one second.

- Forced vital capacity (FVC). The total amount of air that you blow out in one breath.
- FEV1 divided by FVC (FEV1/FVC). Of the total amount of air that you can blow out in one breath, this is the proportion that you can blow out in one second.

## What can the measurements show?

A spirometry reading usually shows one of four main patterns:

- Normal.
- An obstructive pattern.
- A restrictive pattern.
- A combined obstructive/restrictive pattern.

## Normal spirometry

Normal readings vary, depending on your age, size, and sex. The range of normal readings is published on a chart, and the physician refers to this chart when they check your spirometry readings.

## What preparation is needed before having spirometry?

You should get instructions from the doctor, nurse, or hospital department that does this test. Always follow these carefully. The instructions may include such things as not to use a bronchodilator inhaler for a set time before the test (several hours or more, depending on the inhaler). Also, not to

have alcohol, a heavy meal, or do vigorous exercise for a few hours before the test. Ideally, you should not smoke for 24 hours before the test.

## Is there any risk in having spirometry?

Spirometry is a very low-risk test. However, blowing out hard can increase the pressure in your chest, tummy (abdomen) and eyes. So, you may be advised not to have spirometry if you:

- Have unstable angina.
- Have had a recent pneumothorax (air trapped between the outside of the lung and the chest wall - often incorrectly called a punctured lung).
- Have had a recent heart attack or stroke.
- Have had recent eye or abdominal surgery.
- Have coughed up blood recently and the cause is not known.

## Reversibility testing

Reversibility testing is done in some cases where the diagnosis of the lung condition is not clear. For this test, you will be asked to do spirometry as described above. You will then be given a medicine by inhaler or nebuliser which may open up the airways. A nebuliser allows a medicine to be inhaled like a fine mist, through a mask. The spirometry test is then repeated 30 minutes or so afterwards. The aim of this is to see if your airways open wider with medication or not. Generally, asthma has more of a reversible element to the airways obstruction, compared with COPD.

## What spirometry does NOT do ?

Although spirometry shows the type, pattern and severity of lung disease, it does not give an indication of the long-term outlook (prognosis) or of your quality of life. It helps decide the initial therapy and the changes that need to be made but doesn't correlate with your survival.

Ref. British Thoracic Society Documents.