

TABLE OF NORMAL VALUES

	NORMAL	OBSTRUCTION	RESTRICTION
PEFR	Above 85%	Below 85%	Above 85%
FEV1	Above 80%	Below 80%	Below 80%
FVC	Above 80%	Above 80%	Below 80%
FEV1 /FVC	Above 70%	Below 70%	Above 70%

Have you taken a clinical history?



Do the findings from this support a diagnosis of Asthma, COPD or a combination of both)



Is the Spirometry test interpretable?

(3 readings of which at least 2 are within 100mls, or 5% of each other)



Assess FVC, FEV1 and FEV/FVC ratio

NORMAL

FVC greater than 80%
FEV1 greater than 80%
FEV/FVC ratio greater than 70%

If the patient is still symptomatic then why have they produced a normal spirometry?
Are the symptoms coming from another pathology?

Cardiac?
Thyroid?
Anaemia?
Anxiety?
Consider other investigations as appropriate:
Blood tests
ECG

OBSTRUCTION

FVC greater than 80%
FEV1 less than 80%
FEV/FVC ratio less than 70%

The cause of the obstruction will depend on the supporting history and the response to reversibility testing.

A change in FEV1 that is >15% and more than 200mls following 400mcg salbutamol via a spacer indicates some reversibility.

The greater the response the more likely it is to be asthma, But remember - asthma is associated with inflammation as well as bronchospasm so reversibility testing may have to include a trial of steroid therapy if the initial response is borderline but the history suggests asthma

COMBINED

(OBSTRUCTION AND RESTRICTION)

FVC less than 80%
FEV1 less than 80%
FEV/FVC ratio less than 70%

The cause of the obstruction and the restriction will only be determined by a detailed clinical assessment, response or lack of response to reversibility testing and/or further investigations such as chest xray.

An asthmatic can get COPD or lung cancer if they have had sufficient exposure to noxious particles. Equally, a patient with MS or a Scoliosis (known to produce a restrictive pattern on spirometry) can also have asthma. The spirometry will only give data - the clinical history /other investigations will fill in the gaps.

RESTRICTION

FVC decreased to less than 80%
FEV1 decreased to less than 80%
FEV/FVC ratio greater than 70%

Remember that uncontrolled asthma can present as a restrictive pattern - try reversibility testing - if FVC, FEV1 improves this could support an asthma diagnosis. However, other causes of restriction include; tumours and fibrotic lung disease - these patients need referral for chest xray and other pulmonary function tests. If in doubt you may need to consider referral for specialist secondary care based assessment.