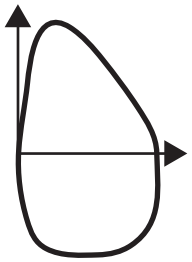
Spirometry Interpretation

What is *normal* spirometry?

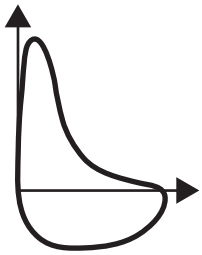


If the shape is normal, there is a range of normality.

FVC: >80% predicted
FEV1: >80% predicted
FEF25-75: 65-100%
FEV1/FVC (FEV 1%): Norms based on age +/-5% (of predicted).

FEV_1/FVC:
5-19 yrs ≥ 85%
20-39 yrs ≥ 80%
40-59 yrs ≥ 75%
60-80 yrs ≥ 70%

What does *asthma* look like?



Meets the following criteria:

1. Shape of the curve is concave.
2. FEV1/FVC (FEV1%) is decreased
3. FVC > FEV1 > FEF25-75
4. A 12% and at least 200ml increase in FEV1 post bronchodilator treatment

For severity rating, the following criteria are suggested:

- ***Mild***: 0.00 - 0.04* or >80%
- ***Moderate***: 0.05* or 60 - 80%
- ***Severe***: <0.05* or <60%

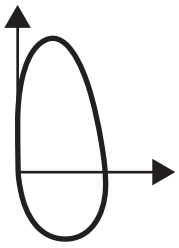
**Note*: This value is sometimes expressed as a percent, but this different than the percent predicted.

The One Minute Interpretation

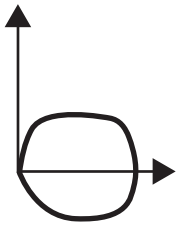
Check five things:

1. ***Is the entry data correct?***
   Check age, height, weight, sex and race
2. ***Evaluate the quality of the blow***
   Good effort with rapid rise to peak flow? Is the curve smooth and reproducible?
3. ***What is the shape?***
   Normal, obstructive, restrictive or mixed? Is the inspiratory loop cut off?
4. ***Look at the percentages for the shape chosen***
   Mild, moderate, severe
5. ***State your interpretation***
   e.g. "mild airway obstruction"

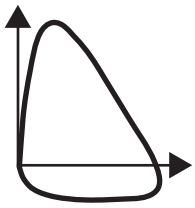
What are the other flow patterns to look for?



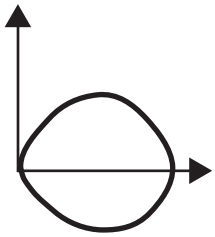
Restrictive
Possible causes:
- Obesity
- Pregnancy
- Kyphoscoliosis
- Pulmonary Fibrosis/ILD



Fixed Large Airway Obstruction
Multiple causes:
- Glottic or tracheal stenosis
- Tracheal malacia
- Paratracheal/Intratracheal mass
- Vocal cord paralysis
- Foreign body



Variable Extrathoracic Airway Obstruction
Causes:
- Paradoxical vocal cord dysfunction



Variable Intrathoracic Airway Obstruction
Possible causes:
- Movable mass lesion
- Malingering

Based on the NAEPP-EPR-3 (http://www.nhlbi.nih.gov/guidelines/asthma/) with some modifications. This guideline is designed to assist the clinician in the management of asthma. This guideline is not intended to replace the clinician's judgment or establish a protocol for all patients with a particular condition. For references, additional copies of the guideline, or patient documents go to www.healthteamworks.org or call (303) 446-7200 or 866-401-2092.
Revised 10/17/2012.