

Respiratory testing in ALS patients

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Objectives

- Distinction of Pulmonary diseases.
- Restrictive lung disease
- Respiratory testing in ALS patients
- Visual problem
- Performing the test

Distinction of Pulmonary diseases

Obstructive Lung disease

Characterized by: reduction in airflow.

(the air will remain inside the lung after full expiration)

- COPD
- Asthma
- Bronchiectasis
- Cystic fibrosis

Restrictive lung disease

Characterized by: reduction in lung volume.

(difficulty in taking air inside the lungs)

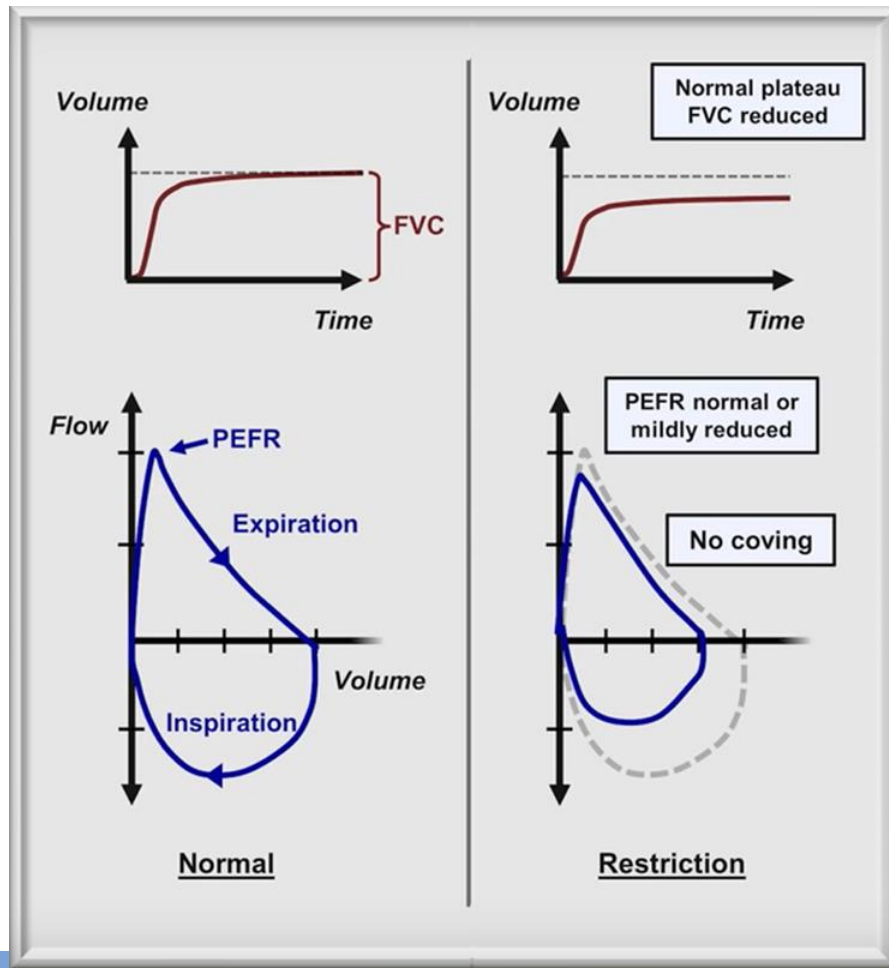
- Neuromuscular disease
(e.g. ALS, muscular dystrophy)
- Interstitial lung disease
(e.g. sarcoidosis)
- Obesity
- Chest wall pathology
(e.g. scoliosis)

Values

	FEV ₁	FVC	FEV ₁ / FVC Ratio (Tiffeneau Index)
Obstructive Lung Disease	Normal (very mild obstruction) or Decreased (mod/severe obstruction)	Normal (mild/mod obstruction) or Decreased (severe obstruction)	Decreased (< 70%)
Restrictive Lung Disease	Normal or Decreased	Decreased	Normal or Increased (≥ 70%)



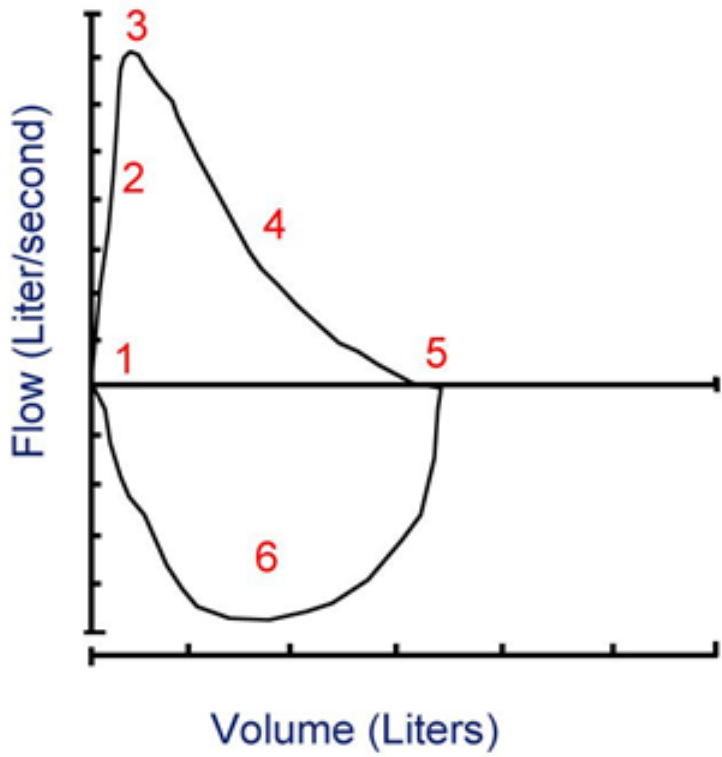
Visual problem



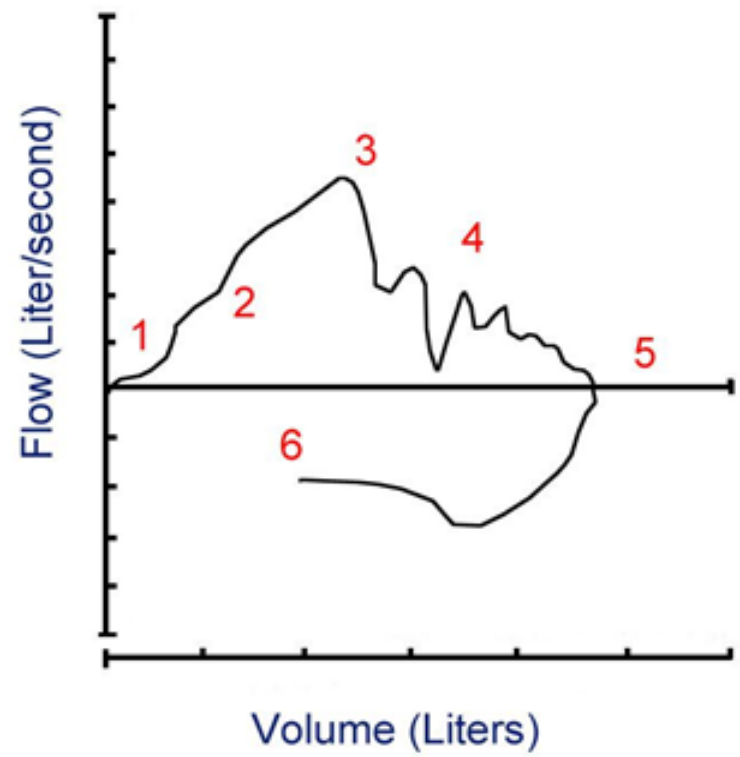
Preforming the test



Acceptable and unacceptable graphs



1. Instantaneous start of exhalation
2. Rapid rise in flow to peak flow
3. Sharp peak occurring early in exhalation
4. Smooth continuous fall in flow without interruptions
5. Gradual fall in low flow to IV
6. Smooth continuous inhalation to TLC
7. Reproducible shape



1. Slow start
2. Slow rise in flow
3. Broad late peak
4. Erratic flow (cough or vocal cord dysfunction)
5. Abrupt return to zero flow
6. Incomplete inhalation
7. Non-reproducible