



Index	Normal	Asthma	Severe COPD	Lung Fibrosis	Extra-thoracic Variable	Extra-thoracic Fixed	Intra-thoracic
PEF (L.s ⁻¹)	9.11	6.55	3.01	8.12	5.92	3.25	3.04
FEF _{50%FVC} (L.s ⁻¹)	4.99	1.65	1.03	4.05	3.57	2.98	2.09
FIF _{50%FVC} (L.s ⁻¹)	7.68	6.11	6.07	6.25	1.35	2.16	2.90
FEV ₁ (L)	3.80	3.31	1.71	2.58	3.49	3.72	2.51
FVC (L)	4.60	4.71	4.55	3.10	4.11	4.65	3.10
FEV ₁ /FVC (%)	83	70	38	83	85	80	81
FEF _{50%FVC} /FIF _{50%FVC}	0.65	0.27	0.17	0.65	2.64	1.38	0.72
Empey Index	6.95	8.42	9.47	5.30	9.83	19.08	13.76

Figure 3.2 Maximal expiratory and inspiratory flow–volume curves of patients with a normal curve, and with asthma, severe COPD, extra-thoracic (variable), extra-thoracic (fixed) and intra-thoracic (central) airway obstruction. The PEF, FEF_{50%FVC}, FIF_{50%FVC}, FEV₁ and FVC are shown with the derived indices. The actual curves are shown along with the normal curve superimposed in green shading. Where the FEF_{50%FVC}/FIF_{50%FVC} is >1.0 and/or the Empey Index is greater than 10, extra-thoracic airflow obstruction may be present. Visual inspection of the loops and acceptable technical quality of the traces is essential. The position of the FEV₁ on the flow-volume curve is shown as the short vertical black line.