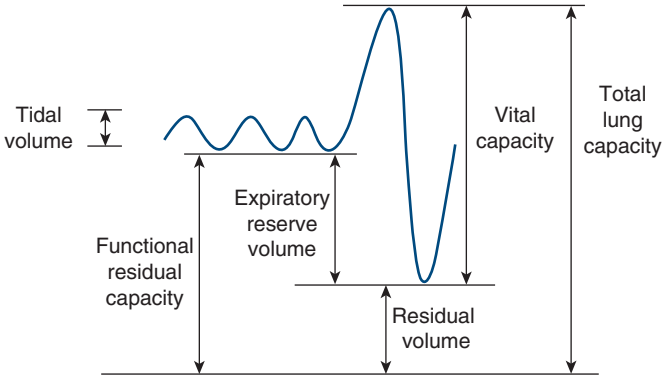


CHAPTER 4

Pulmonary Function Tests

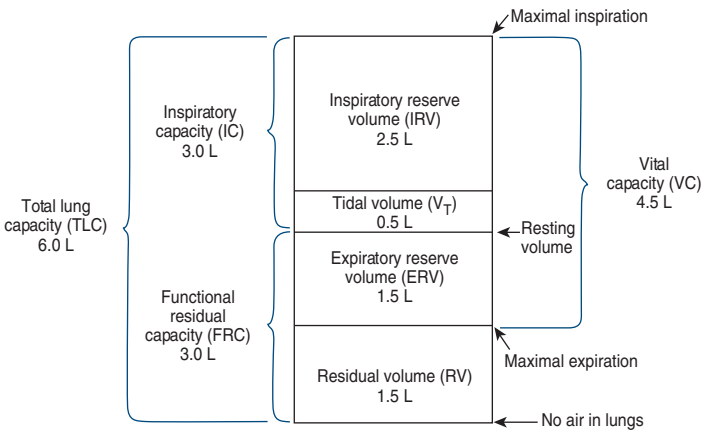
Ruchir Gupta, MD

FIGURE 4-1. Normal spirogram



Reproduced from Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J. *Harrison's Principles of Internal Medicine*. 18th ed. Figure 252-2. Available at: www.accessmedicine.com. Copyright © The McGraw-Hill Companies, Inc. All rights reserved.

FIGURE 4-2. Normal lung volumes

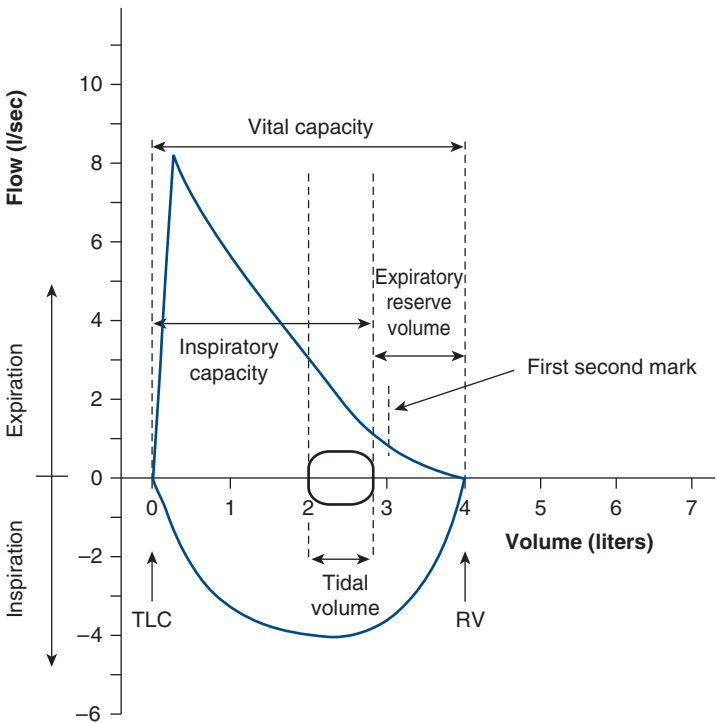


Reproduced from Levitzky MG. *Pulmonary Physiology*. 7th ed. Figure 3-1. Available at: www.accessmedicine.com. Copyright © The McGraw-Hill Companies, Inc. All rights reserved.

Pulmonary Function Tests in Disease States		
Respiratory variable	Obstructive (i.e., asthma, COPD)	Restrictive (i.e., pulmonary fibrosis, pneumonia)
Vital capacity	N or ↓	↓
Total lung capacity	↑	↓
FEV ₁ /FVC ratio	↓	N or ↓
Mid-maximal expiratory flow	↓	N
Maximum breathing capacity	↓	N
DLCO	Asthma: N or ↓ COPD: ↓↓	↓↓↓

N, normal; ↓, decreased; ↑, increased.

FIGURE 4-3. Components of the flow-volume loop



By convention, expiration is up and inspiration is down.

FIGURE 4-4. Alterations of flow-volume loop in disease states

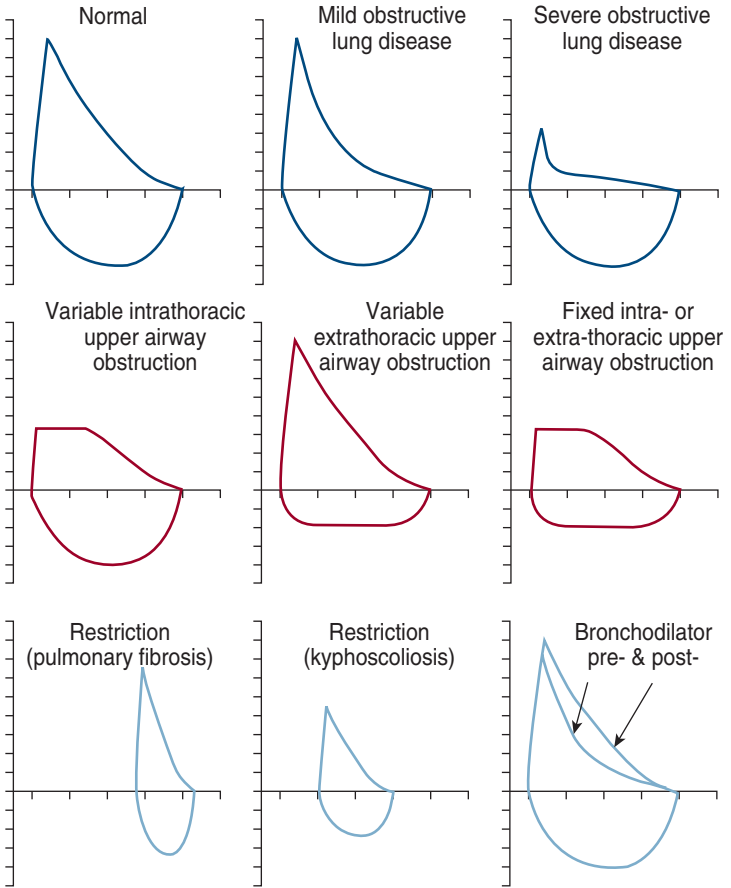


FIGURE 4-5. Preoperative testing algorithm to predict surgical outcome for pneumonectomy

