II. Pulmonary Function Test/PFT
   A. What? Measure of static & dynamic lung function
   B. Why? Picture of lung health; absence, presence, progression of disease (eg asthma, emphysema); effectiveness of drugs
   C. How? Complete PFT with computer or dinosaur spirometer

III. Crucial Clinical Measures
   A. VC vital capacity = FVC forced vital capacity amount of air exhaled after maximal inhalation
   B. \( FEV_{1.0} \) = How much of VC in 1 second? \( \frac{FEV_{1.0}}{FVC} \times 100 \)
      - If \( \geq 75-80\% \) (0.75-0.80) \( \rightarrow \) clinically normal
      - If \( \leq 40-50\% \) \( \rightarrow \) obstructive disease (eg, asthma)

IV. Your Goals
   A. Estimate your VC & \( FEV_{1.0} \) from Nomogram pp 6-6 or 6-7 LLM
   B. Measure these values accurately w/computer PFT LabChart
   C. Compare estimated with actually assessed values to determine whether you're within a healthy range.
**Respirometer** ➔ measures complete **Pulmonary Function Test** or PFT!

**NB**: Should be able to blow out \( \geq 75 - 85\% \) of VC/FVC in 1 second! That's \( \text{FEV}_{1.0}/\text{FVC} \geq 0.75 - 0.85 \). If less, may indicate asthma or other lung disease.

- **Normal** = Steep
- **Abnormal** = Flatter Downslope (eg, Asthma)
PFT measures all lung volumes & capacities (sum of ≥ 2 volumes). Subject relaxes & breathes normally into and out of tank.
Sample PFT from Collins 13.5 L Respirometer
Spirogram graphing complete PFT from computer simulation.

TV = Tidal volume (500 ml)
IRV = Inspiratory reserve volume (3,000 ml)
IC = Inspiratory capacity (3,500 ml)
ERV = Expiratory reserve volume (1,000 ml)
RV = Residual volume (1,200 ml)
FRC = Functional residual capacity (2,200 ml)
VC = Vital capacity (4,500 ml)
TLC = Total lung capacity (5,700 ml)
e.g., Monica height = 5'6" = 66", age = 21 yr

FEV1.0 = 3.35 L
FVC 3.82 L
FEV1.0/FVC = 3.35/3.82 = 0.8769 ≡ 87.7 %

**Estimate**
- Monica height = 5'6'', age = 21 yr
- FEV1.0 = 3.35 L
- FVC = 3.82 L
- FEV1.0/FVC = 3.35/3.82 = 0.8769 = 87.7%