

Crystalloids for Shock Resuscitation



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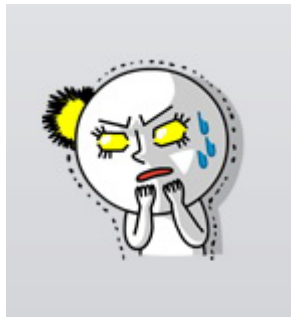


Charles Sidney Burwell, MD.
Harvard Medical School, Dean
1935-1949



Half of what we have taught you is wrong.

Unfortunately, we don't know which half !



**Evidence-based
medicine**

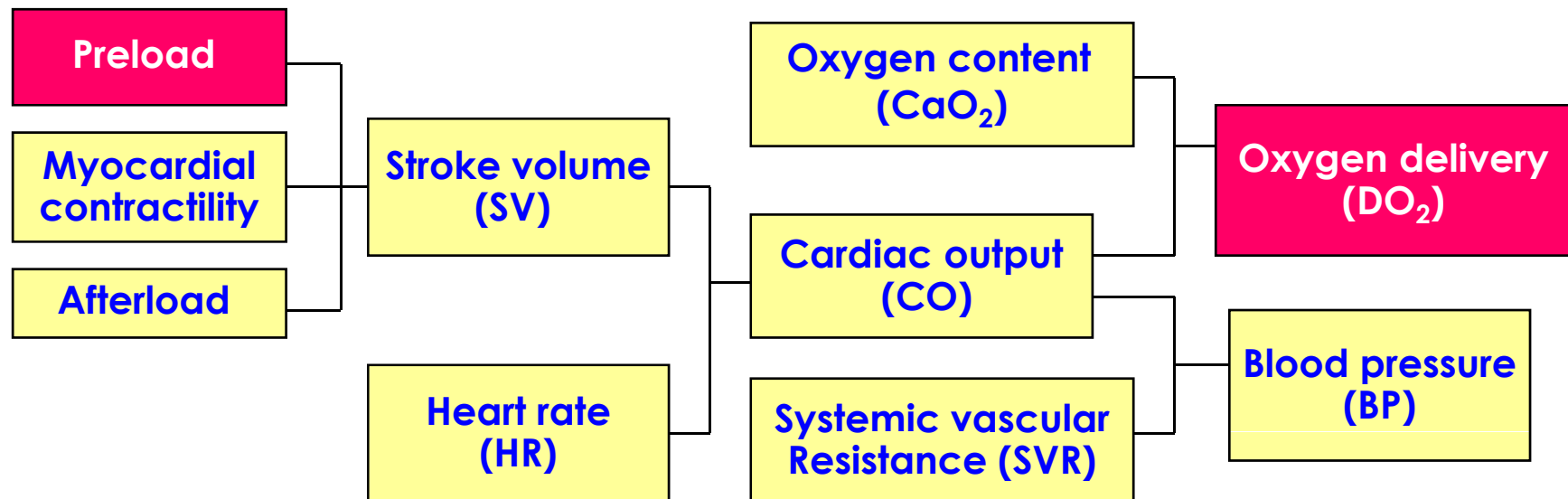


Crystalloids for shock resuscitation

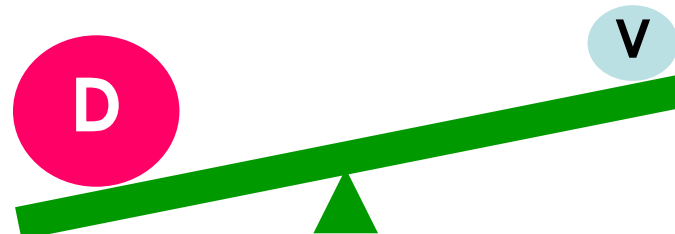
- Physiology of body fluid
- Crystalloids
 - Types and basic components
 - Clinical studies



Fluid for shock resuscitation



- Hypovolemic
- Distributive
- Cardiogenic
- Obstructive





Transcapillary filtration

Intravascular fluids



Interstitial fluids

Intracellular fluids

Starling's equation

$$J_v = K [(P_c - P_i) - \sigma(\pi_c - \pi_i)]$$

P : hydrostatic pressure

π : osmotic pressure



c : capillary / intravascular

i : interstitium