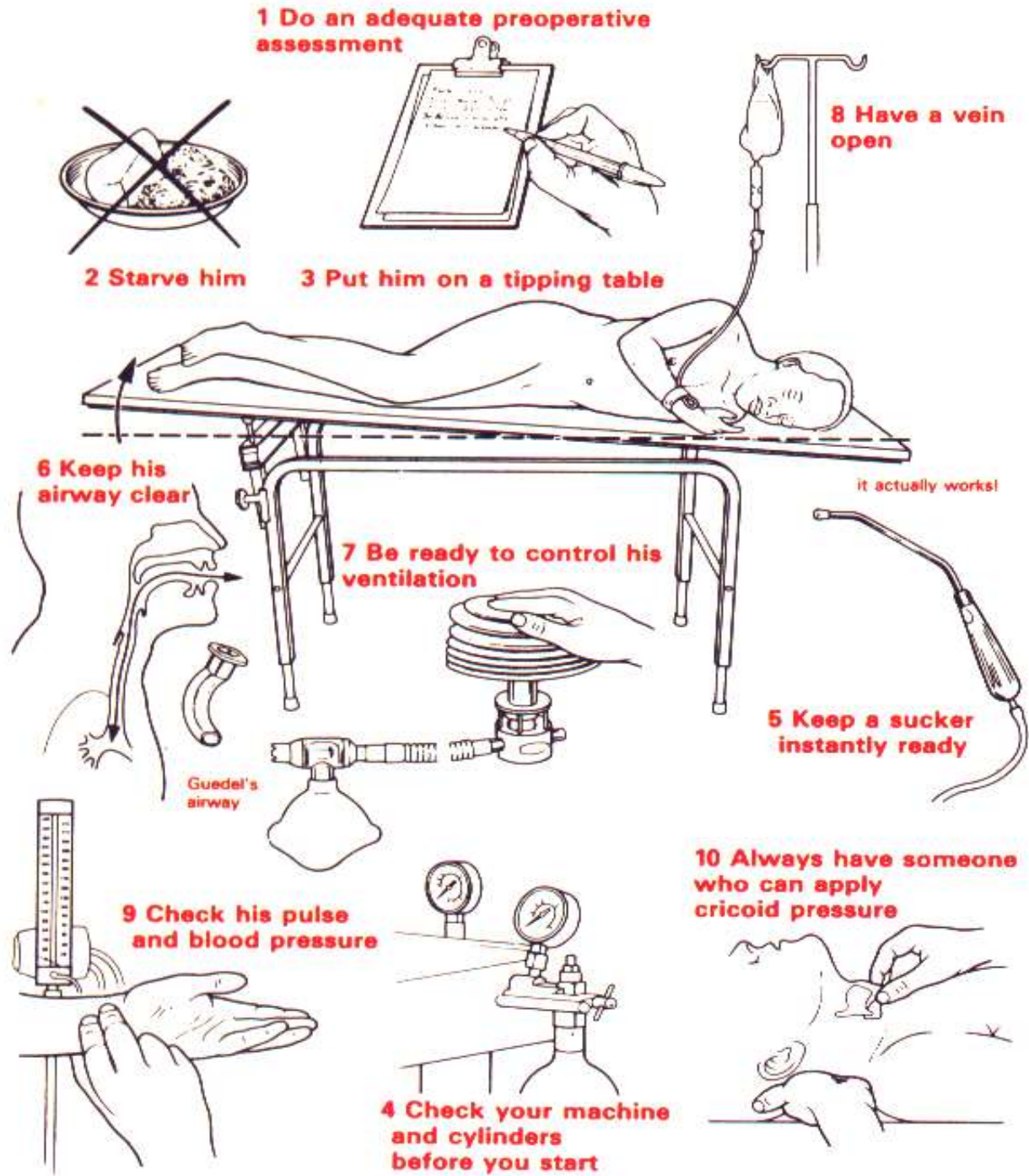




Jozef Firment, MD, PhD.
Department of Anaesthesiology &
Intensive medicine, Medical faculty UPJŠ Košice

ANAESTHESIA MANAGEMENT IN SPECIFIC SURGICAL PROCEDURES



Classic 10 golden rules for safety anesthesia

Anaesthesia in Trauma Injuries

- Sellick maneuver
- ASA E, ASA 4-5/E
- Emergency

Sellick maneuver



Cricoid Pressure: An Innocent Manoeuvre?

Cricoid pressure ...

- ... may impede laryngoscopy.
 - ... may cause difficult intubation.
 - ... may cause airway obstruction.
 - ... may impede placement of LMA.
 - ... may impede tracheal intubation through intubating LMA.
 - ... decreases lower oesophageal sphincter tone.
 - ... may cause oesophageal rupture.
-

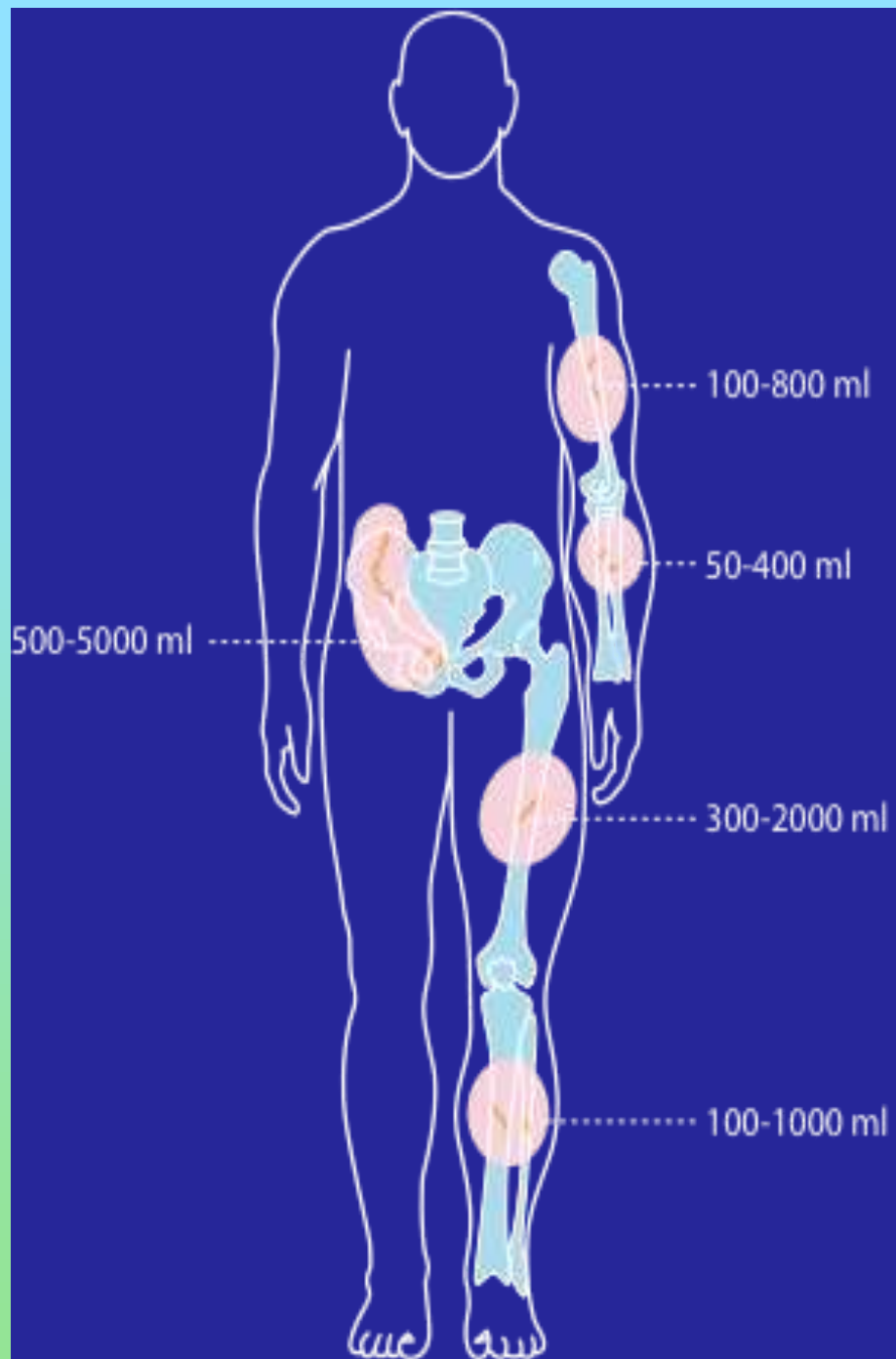
...more ritual than effective measure!

prof. Priebe, ESA Copenhagen 2008

Patient Management with Multiple Injuries

- Blood Losses Supplementation, Infusion Therapy
- FFP 1 : 1(2)RBC, FFP : RBC : Tr = 1:1:1
- Crystalloids Na⁺ (NaCl, Ringer, Hartmann...)
- Colloids artefitial: dextrans, HES, gelat
- natural: FFP, albumine

Blood loss and fractures

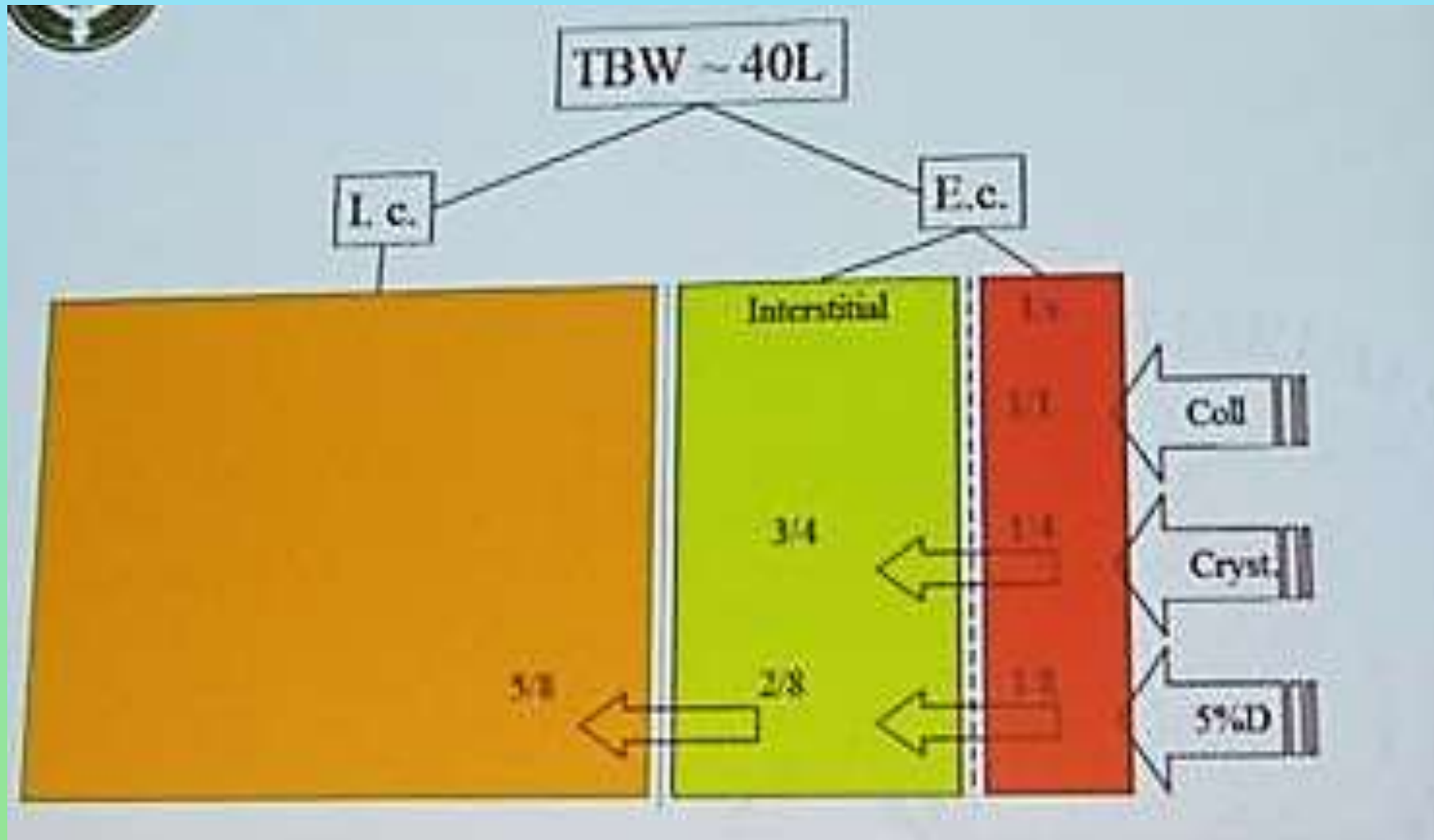


Lethal triade of bleeding (generally):

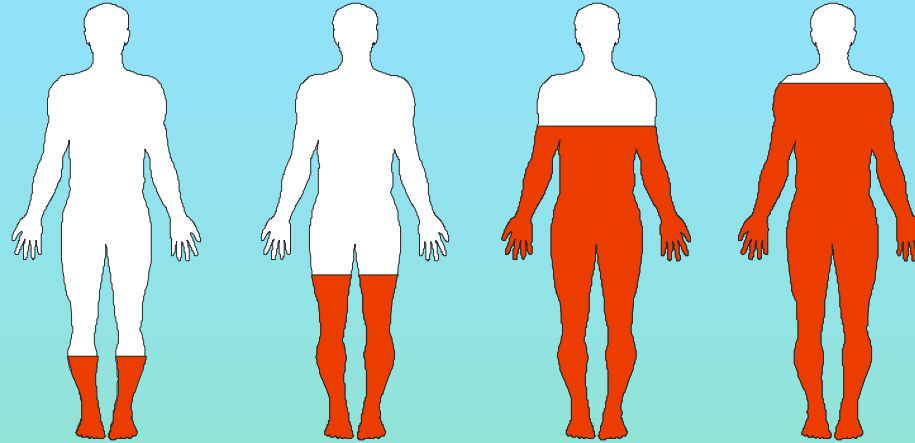
1. Acidosis
2. Hypothermia
3. Coagulopathy

Fluids distribution

Compartment model



Volume replacement in trauma

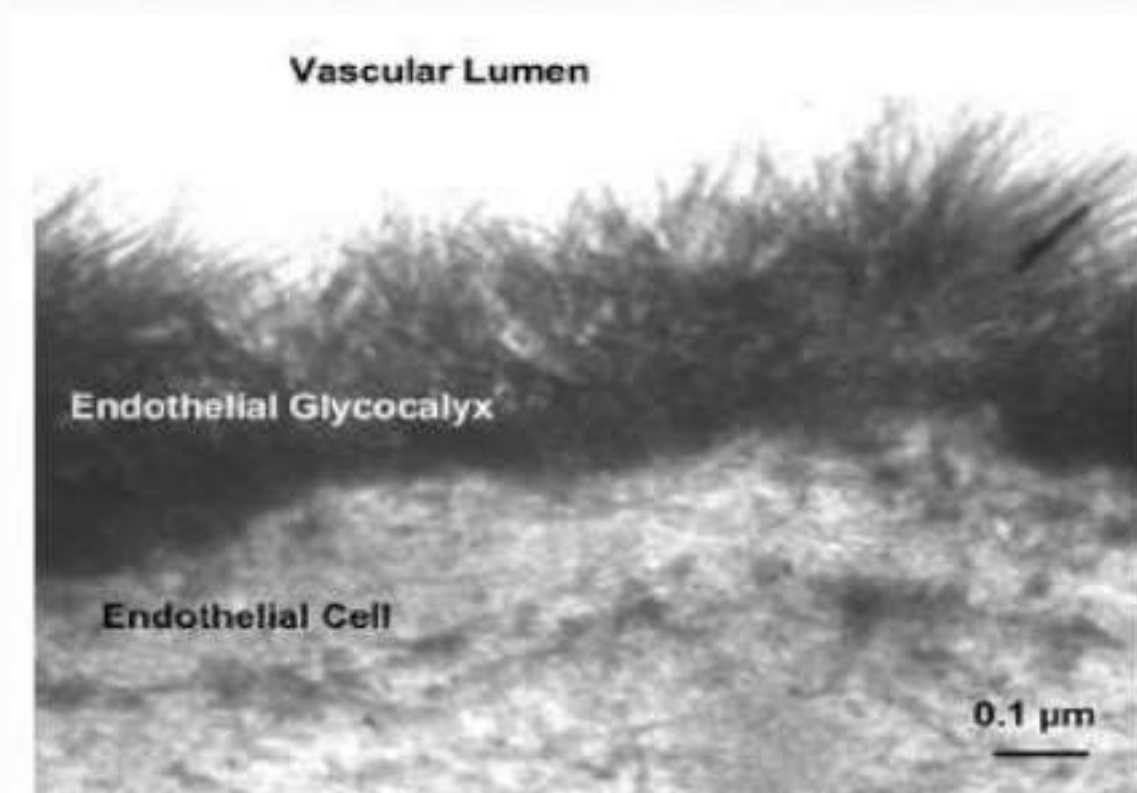


Volume loss (%)	30%	40%	70%	80%
Crystalloids	✓	✓	✓	✓
Colloids	✓	✓	✓	✓
Red blood cells		✓	✓	✓
Fresh frozen plasma			✓	✓
Platelets				✓

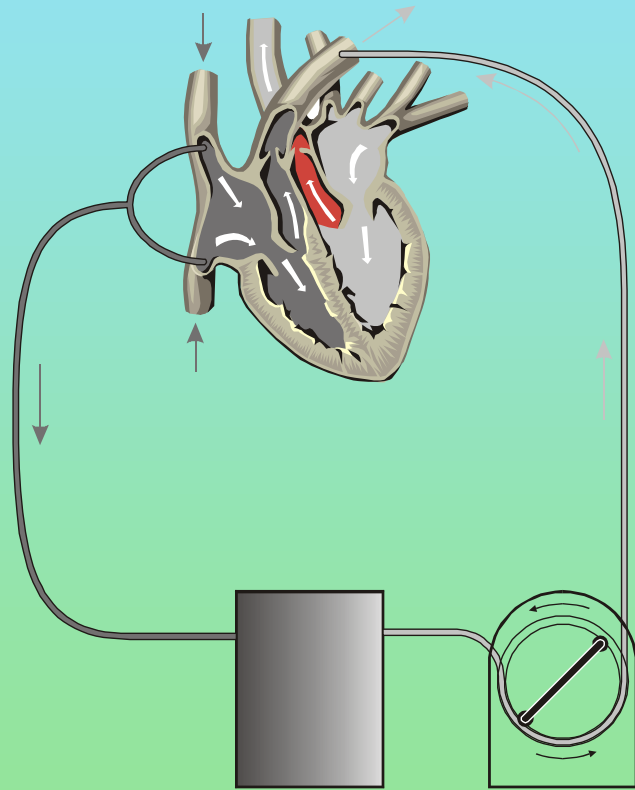
Glycocalyx as barrier

Healthy vascular endothelium coated by endothelial glycocalyx – a layer of membrane-bound proteoglycans and glycoproteins.

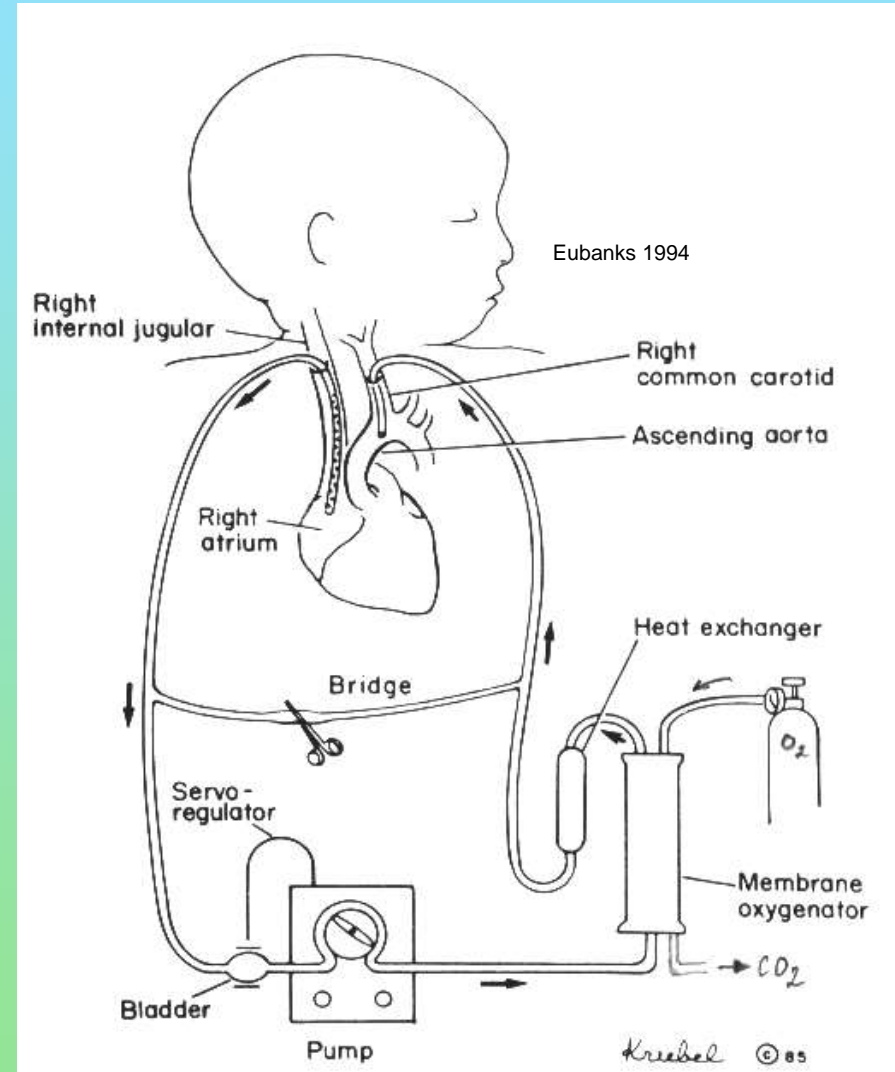
Endothelial Glycocalyx



Specificity of Cardiac anesthesia



Extracorporeal circuit

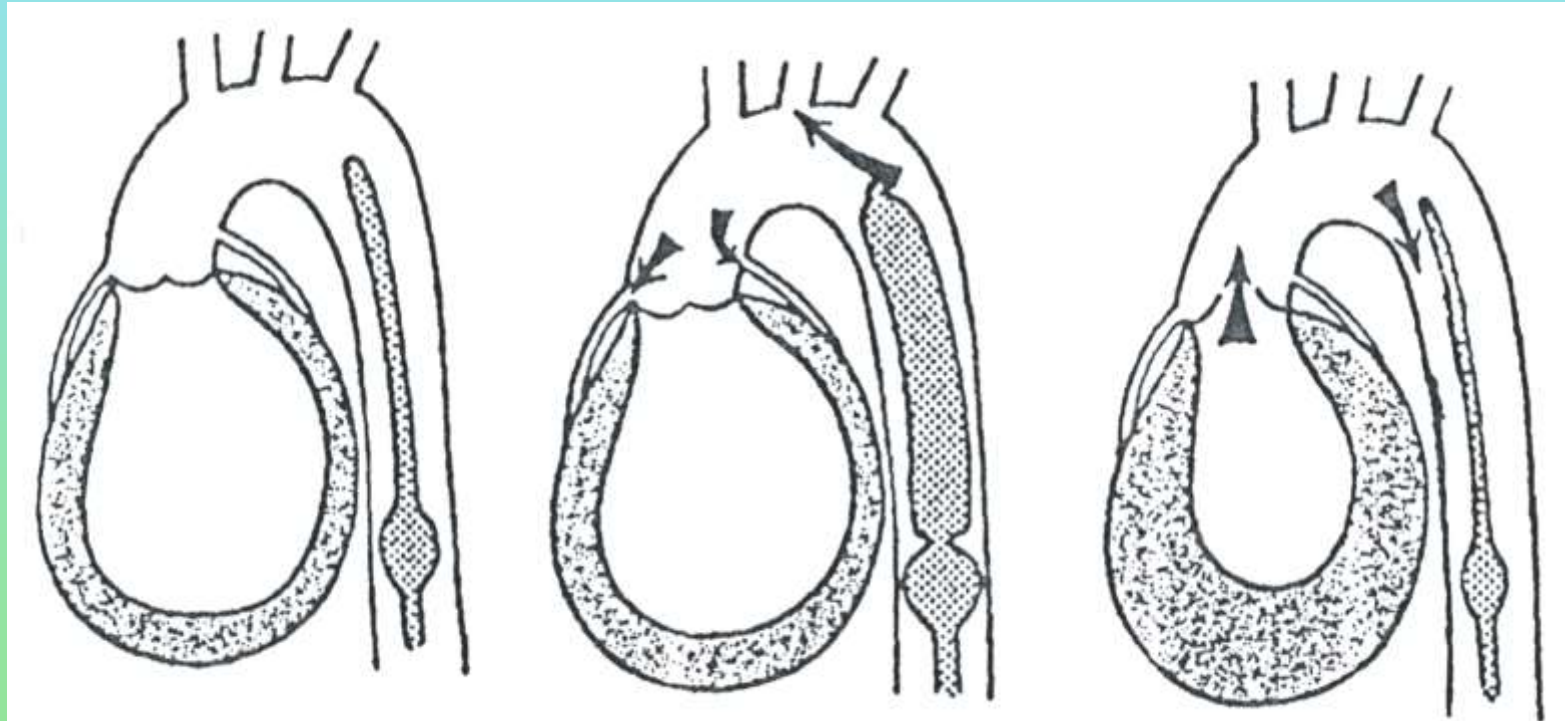


IABP - postanaesth care

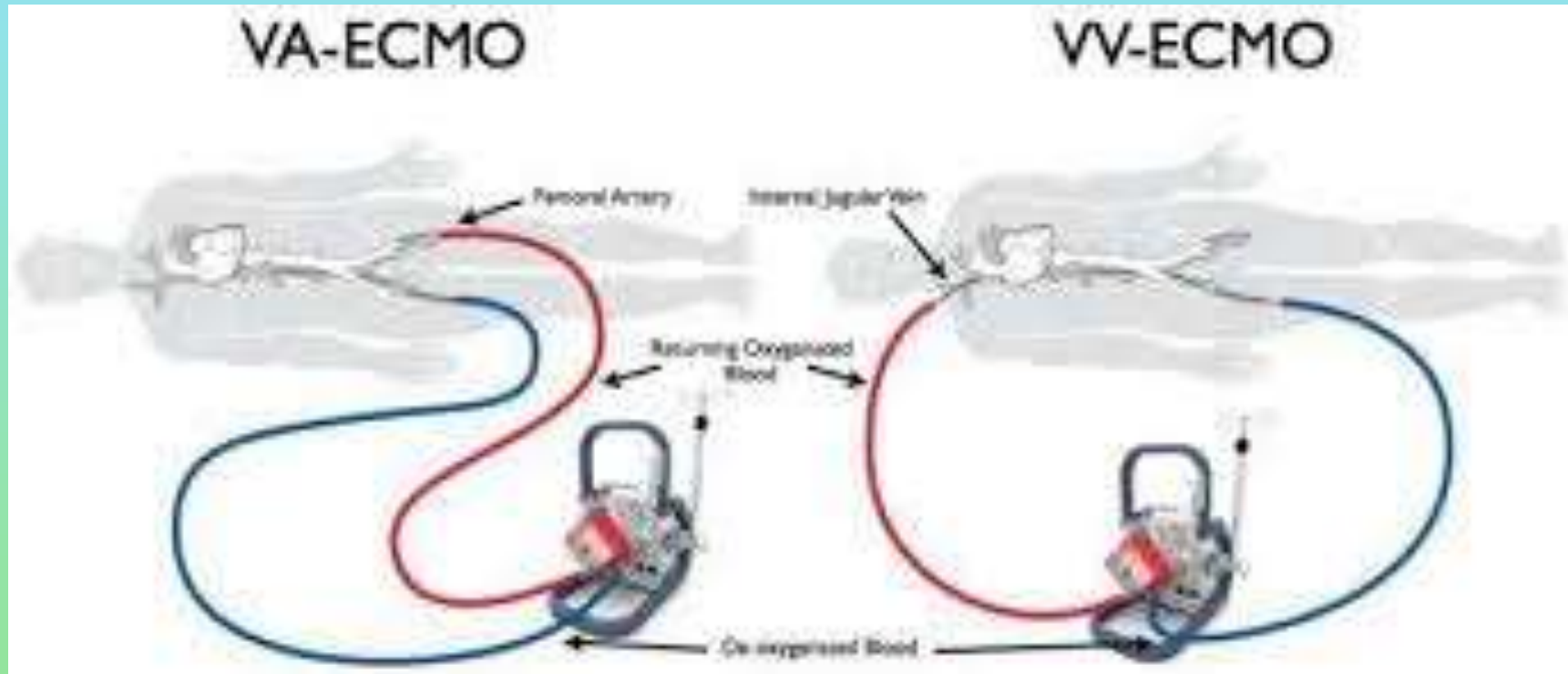
positioning

diastole

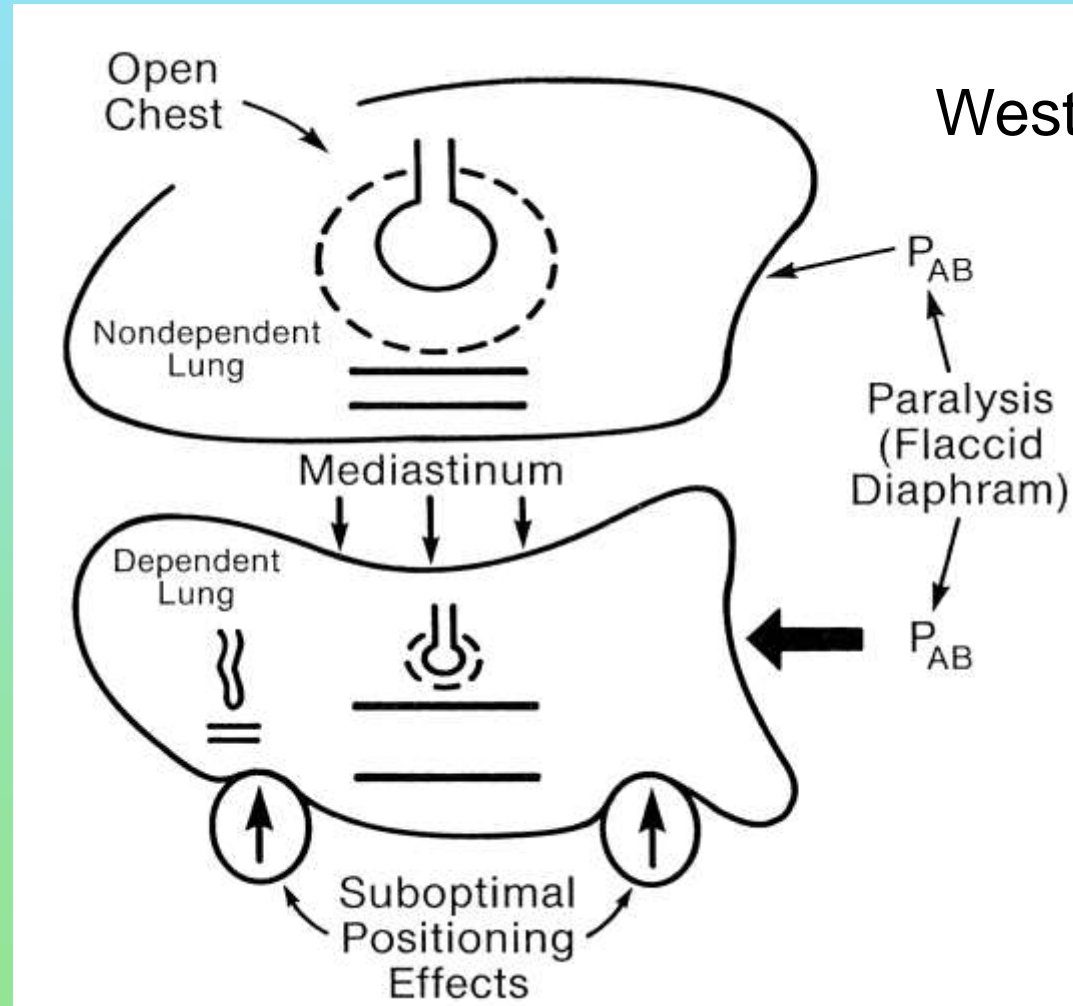
systole



ECMO

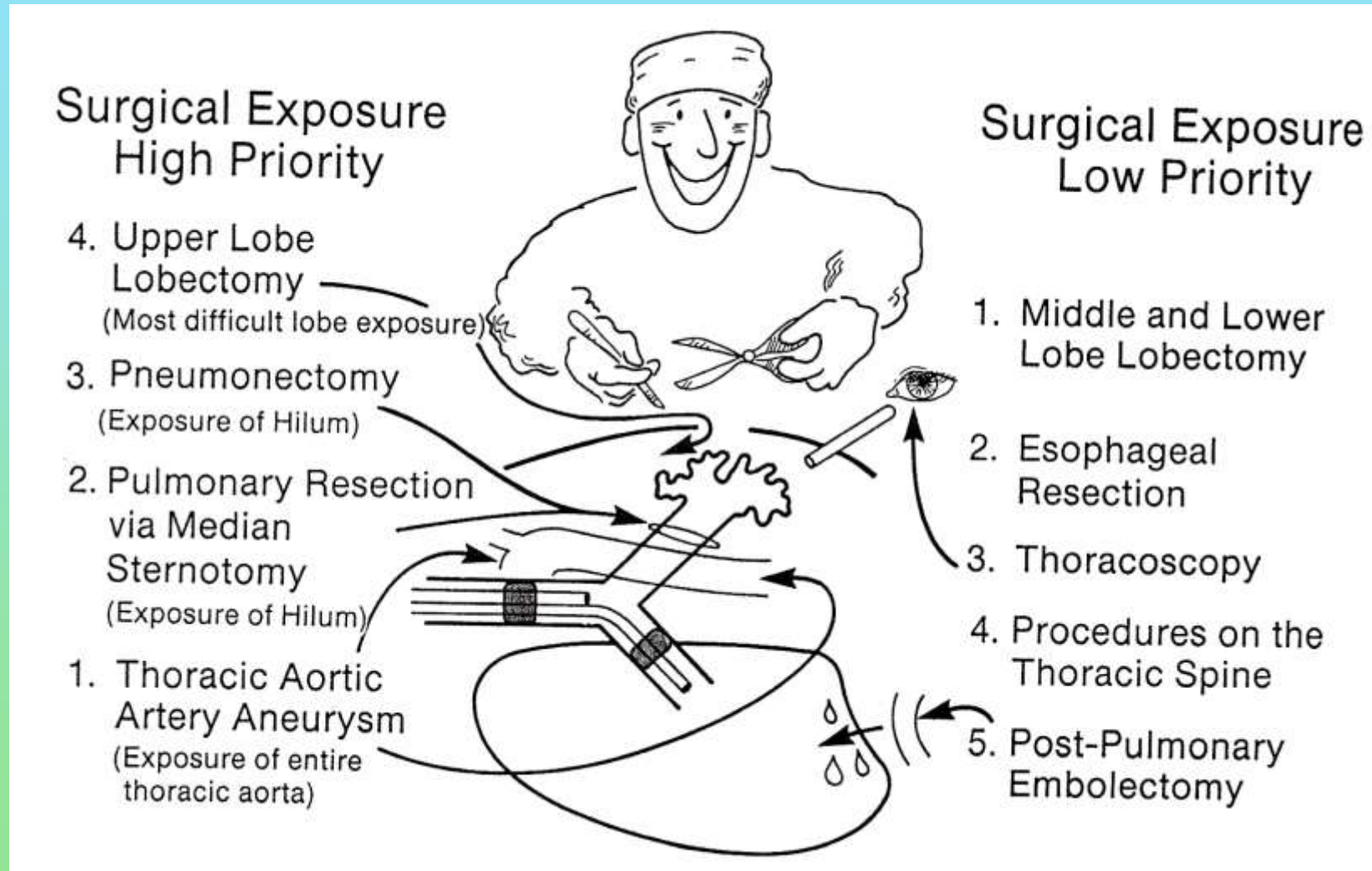


One lung ventilation

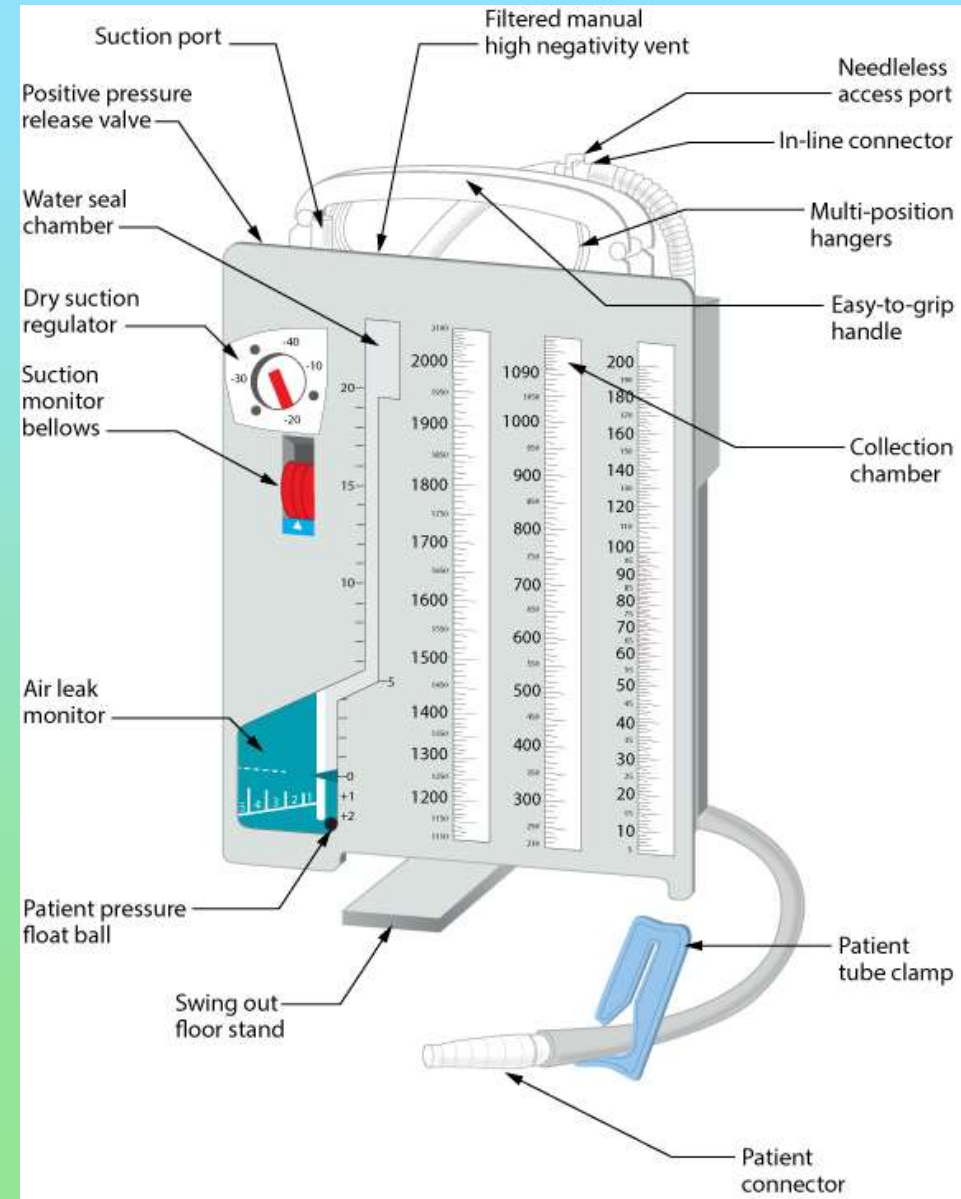
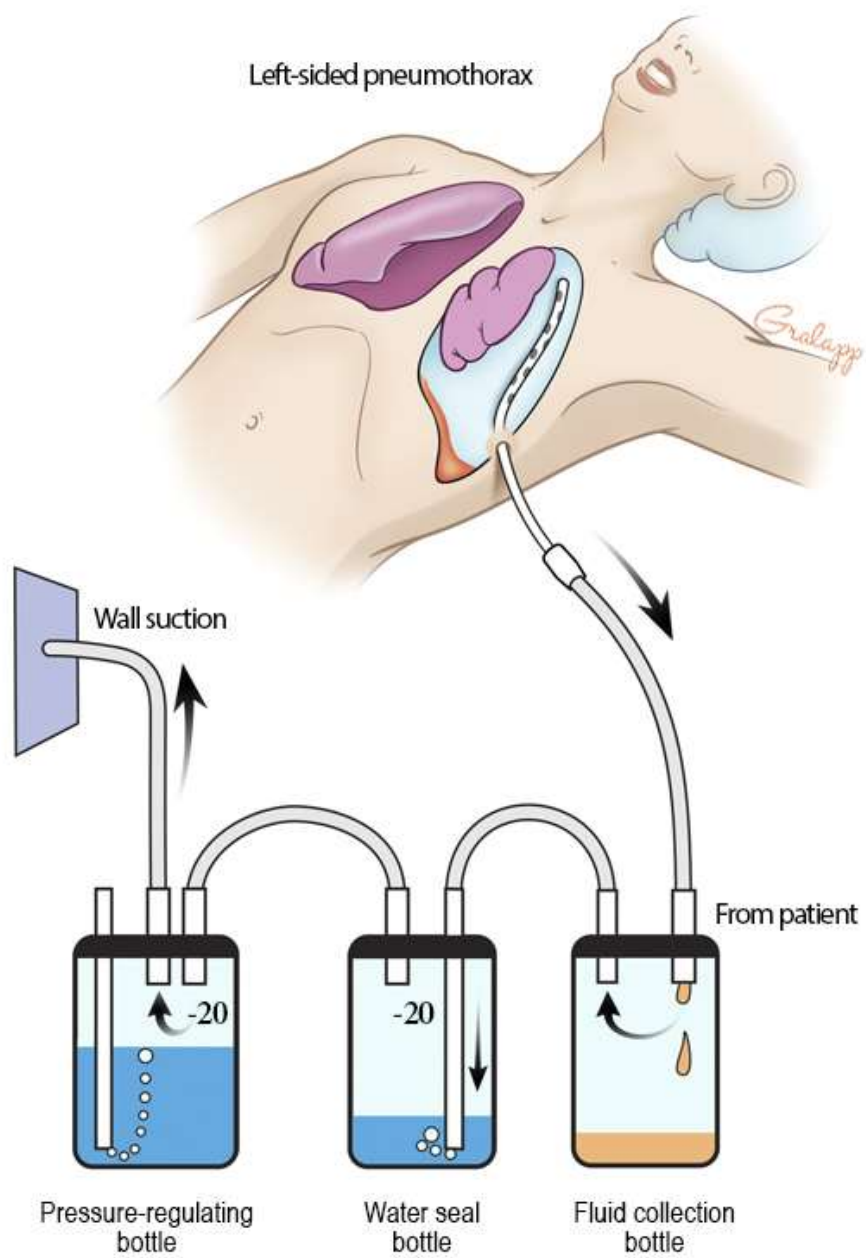


West lung zones

One lung ventilation

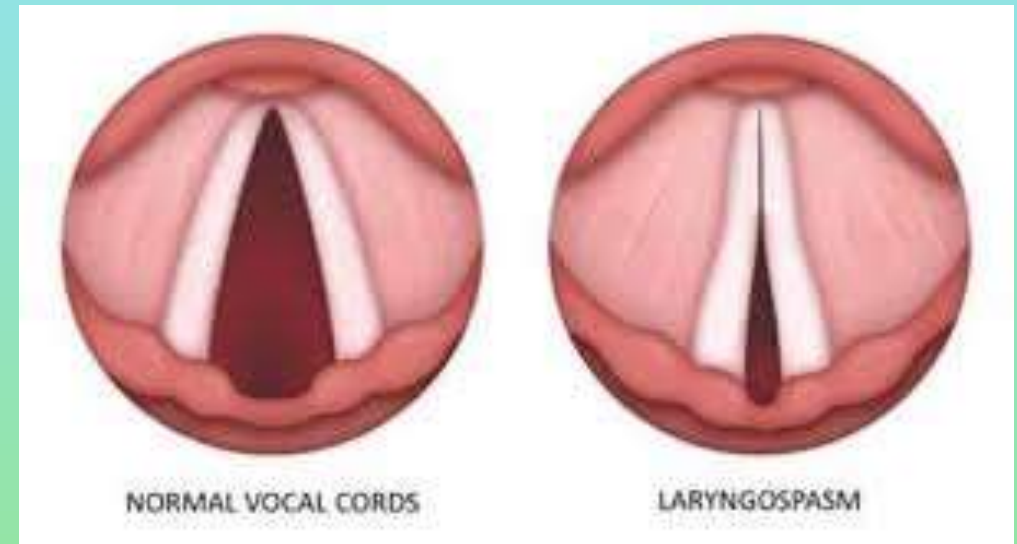


Chest tube draining system - thorax suctioning



Respiratory Complications in General Anaesthesia

- Diff. airway
- Hypoxia
- Hypercapnia
- Laryngospasm
- Bronchial spasm
- Aspiration
- Pneumothorax



Laparoscopic surgery

Respiratory Effects of ↑ IAP

Increased intra-abdominal pressure displaces the diaphragm cephalad causing:

- ↑ **PIP** → **Consider pressure mode ventilation**
- ↑ **IP volume** → **Compression basilar lung segments** → ↓ **FRC** → ↑ **alveolar dead space** → **V/Q mismatch**
- ↓ Vital Capacity
- ↓ FRC
- ↑ Intra-thoracic pressure → May worsen w/ Trendelenberg position and may exacerbate GERD
 - Protect airway in patients at risk of aspiration

Usually only clinically significant in patients w/ pre-existing pulmonary co-morbidities

- **WATCH OUT** if your patient has COPD w/ impaired compensatory mechanisms → High risk of hypoxemia and significant hypercapnia!

Laparoscopic surgery

- Cardiovascular Effects of ↑ IAP
- ↑ IAP → ↓ Venous Return → ↓ Preload → ↓ CO → ↑ HR, MAP, SVR, and PVR
- These effects **amplified** by IAP > 15 mmHg and reverse Trendelenberg positioning.
- Pneumoperitoneum can produce significant **hemodynamic stress**.
- An awareness of potential complications, especially in patients with significant cardiac disease (i.e severe CAD) is essential.

Cardiovascular Complications in General Anaesthesia

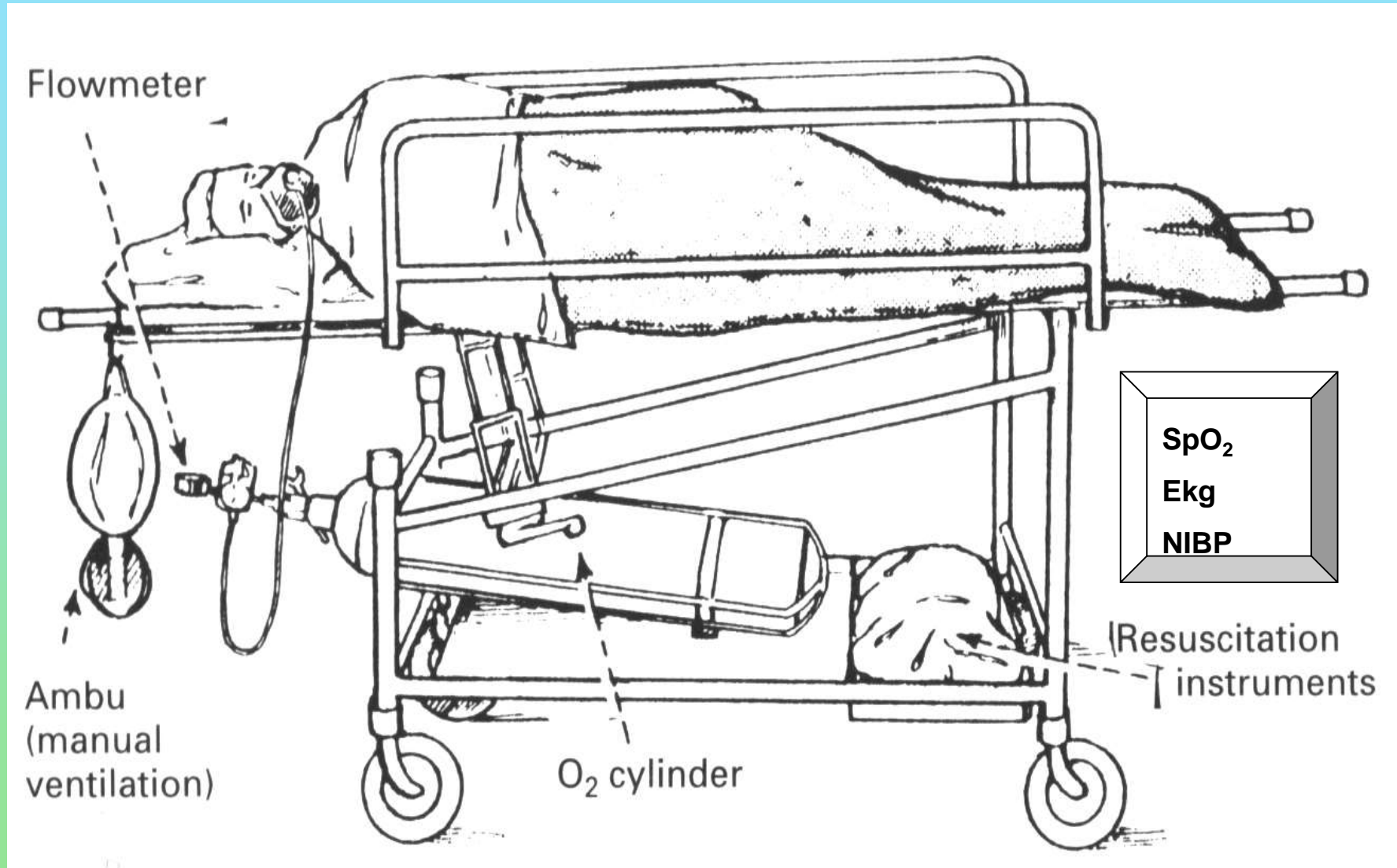
BP

Arrhythmias

Shock

Bleeding – life threatening hemorrhage

Transport



DEMANDS & RISKS IN VARIOUS SURGICAL PROCEDURES

- Obstetrics and gynaecology
- Pediatric patient (premedication, iv approach, airway,
- ENT, ophthalmic, maxillofacial surgery
- Neurosurgery - IVA
- Orthopedics - RA
- Diagnostic procedures