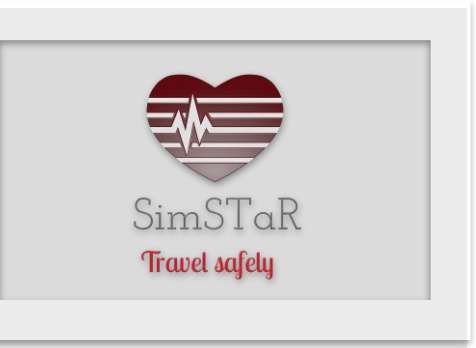
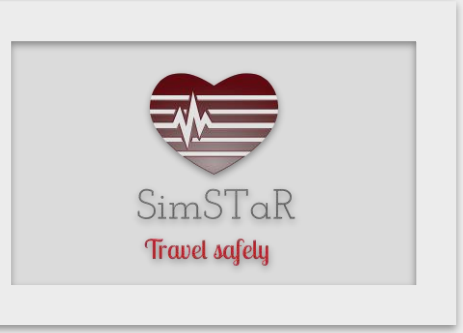
SimSTaR

Travel safely



Pathophysiology of Transfer Medicine



Transfer Risks

Worsening disease process

Equipment issues

Human factors

Transfer hazards

Static hazards

Dynamic hazards

Overview

Risks of Transfer

- Worsening disease process
- Equipment failure
- Human factors

Worsening Disease Process

- Clinical deterioration
- Inadequate therapy
- Movement

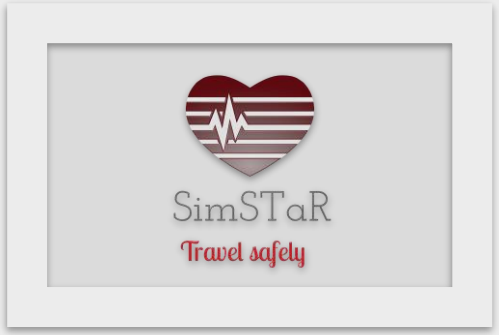
Equipment issues

- Inadequate monitoring
- Equipment failure
- Resources

Human Factors

- Technical issues
- Communication failure
- Situational awareness
- Be aware of limitations


I'M SAFE CHECKLIST
Illness—Do I have any symptoms?
Medication—Have I been taking prescription or over-the-counter drugs?
Stress—Am I under psychological pressure from the job? Worried about financial matters, health problems, or family discord?
Alcohol—Have I been drinking within 8 hours? Within 24 hours?
Fatigue—Am I tired and not adequately rested?
Eating—Am I adequately nourished?



Static hazards

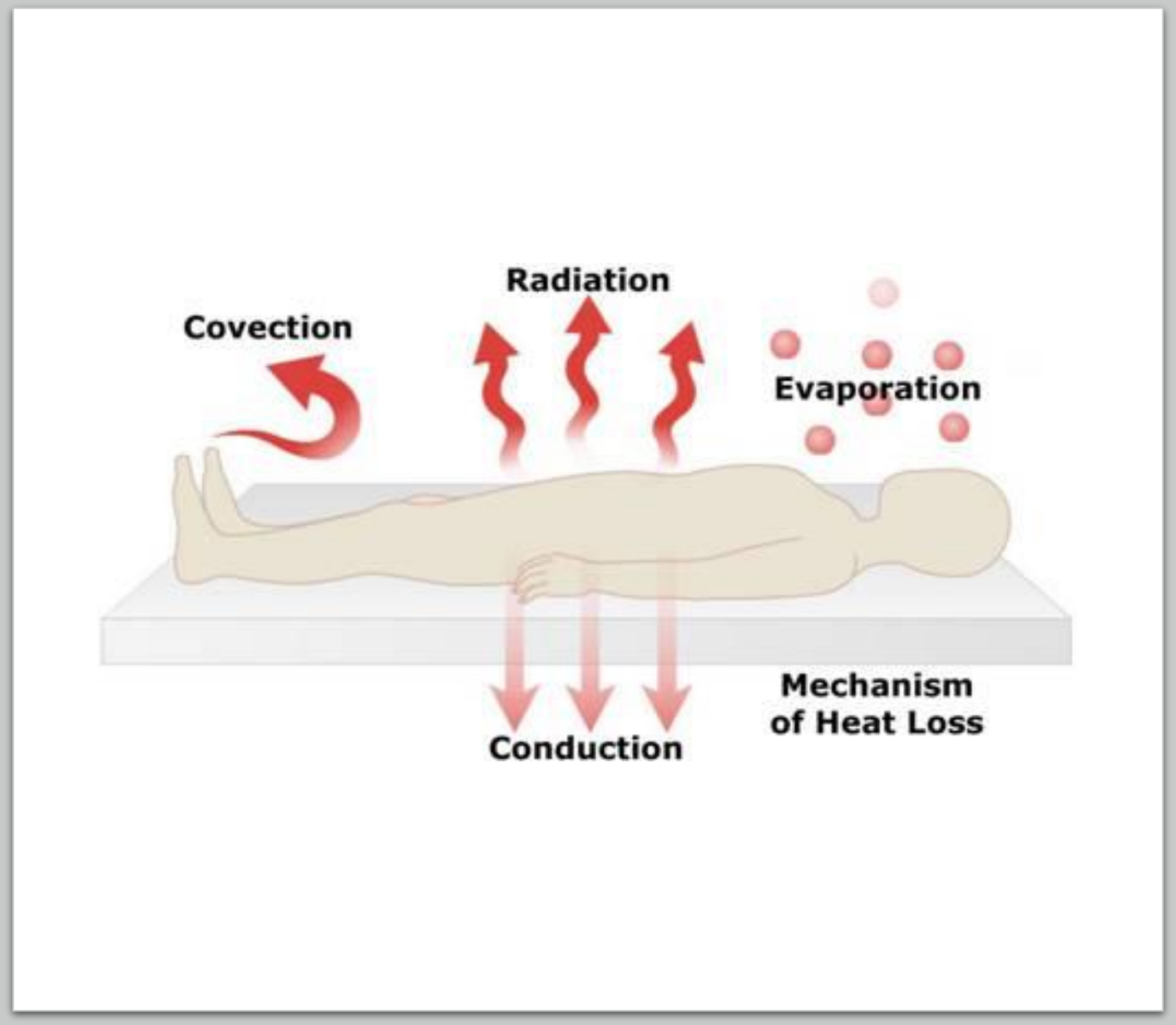
Dynamic hazards

Hazards of Transfer

Static hazards

- Temperature
- Noise
- Vibration
- Space
- Motion sickness

Temperature



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Noise

Vibration

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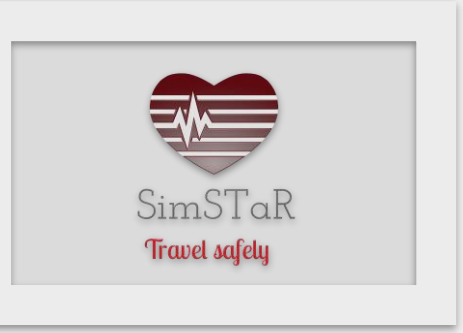
Travel safely

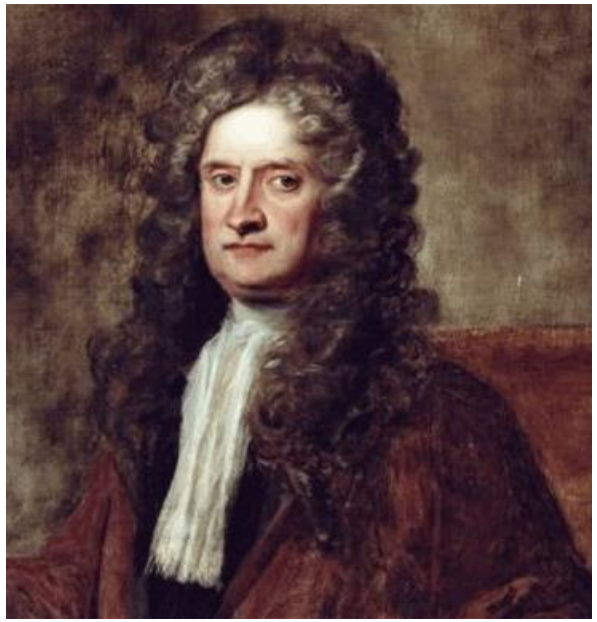
Motion Sickness



G – Forces

Dynamic Hazards

Newton's Laws of Motion



FIRST LAW

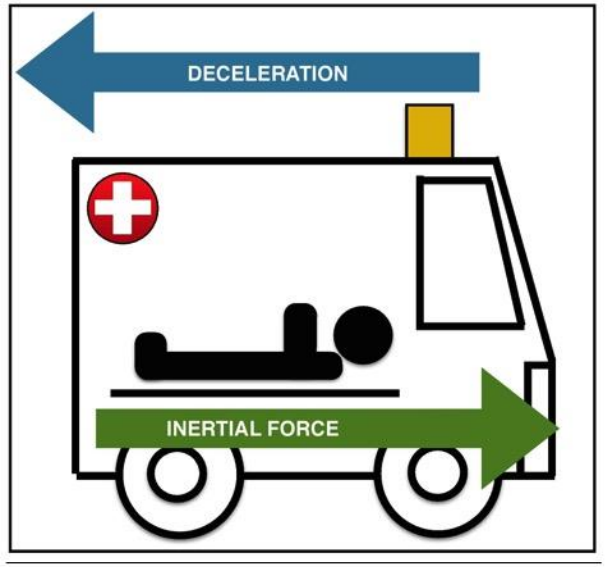
Every object in a state of uniform motion will remain in that state of motion unless an external force is applied

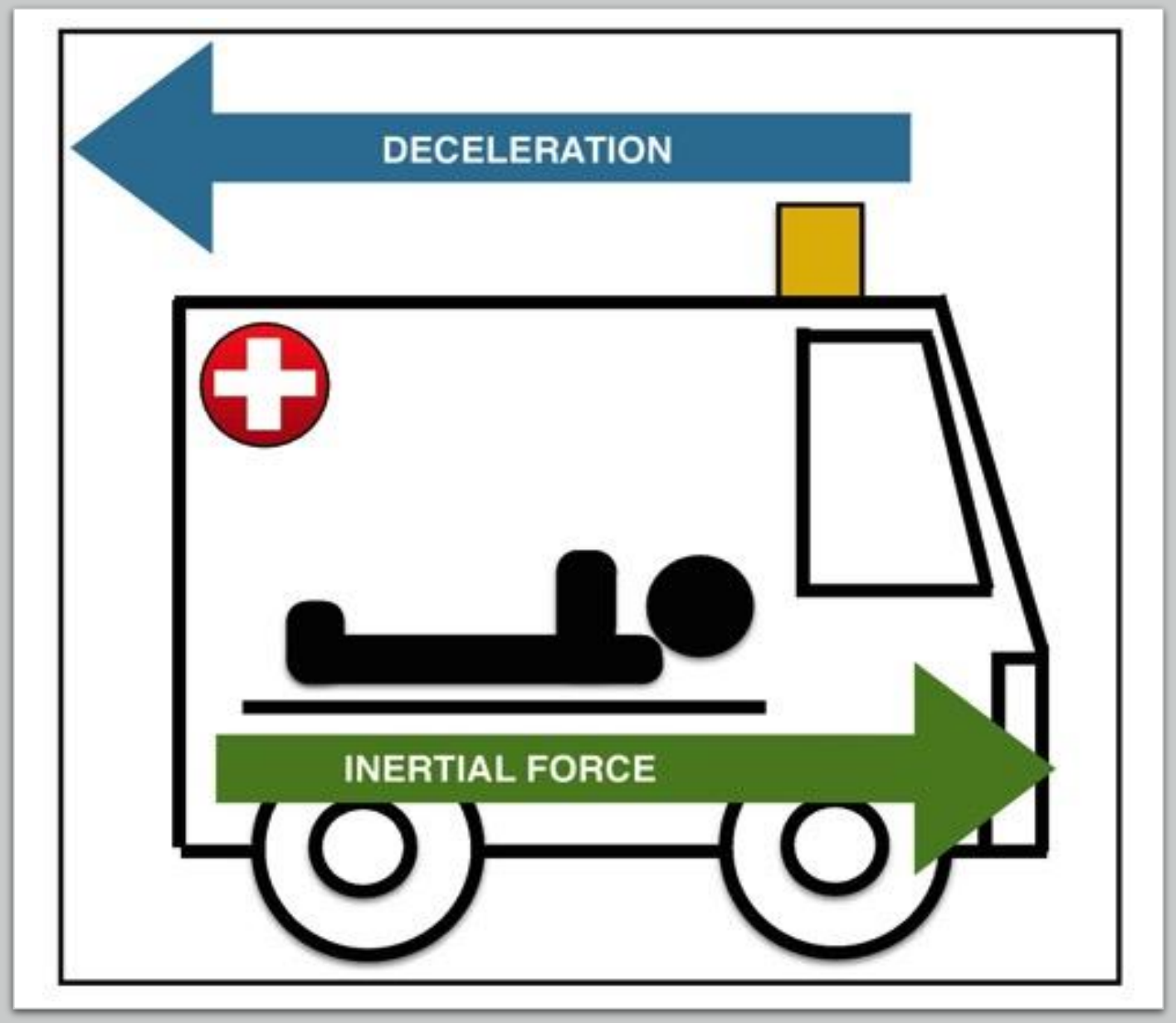
SECOND LAW

The sum of an external force (F) on an object is equal to the mass *m* of that object multiplied by the acceleration *a* vector of that object. F=*ma*

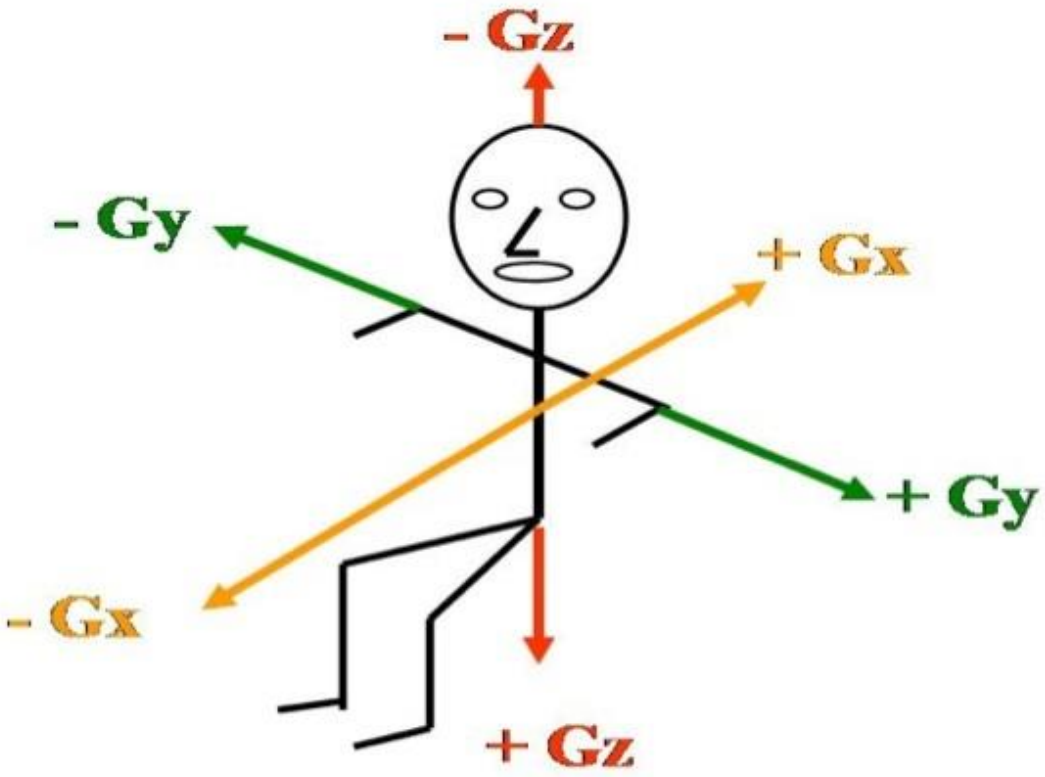
THIRD LAW

For every action there is an equal an opposite reaction


DECELERATION
INERTIAL FORCE

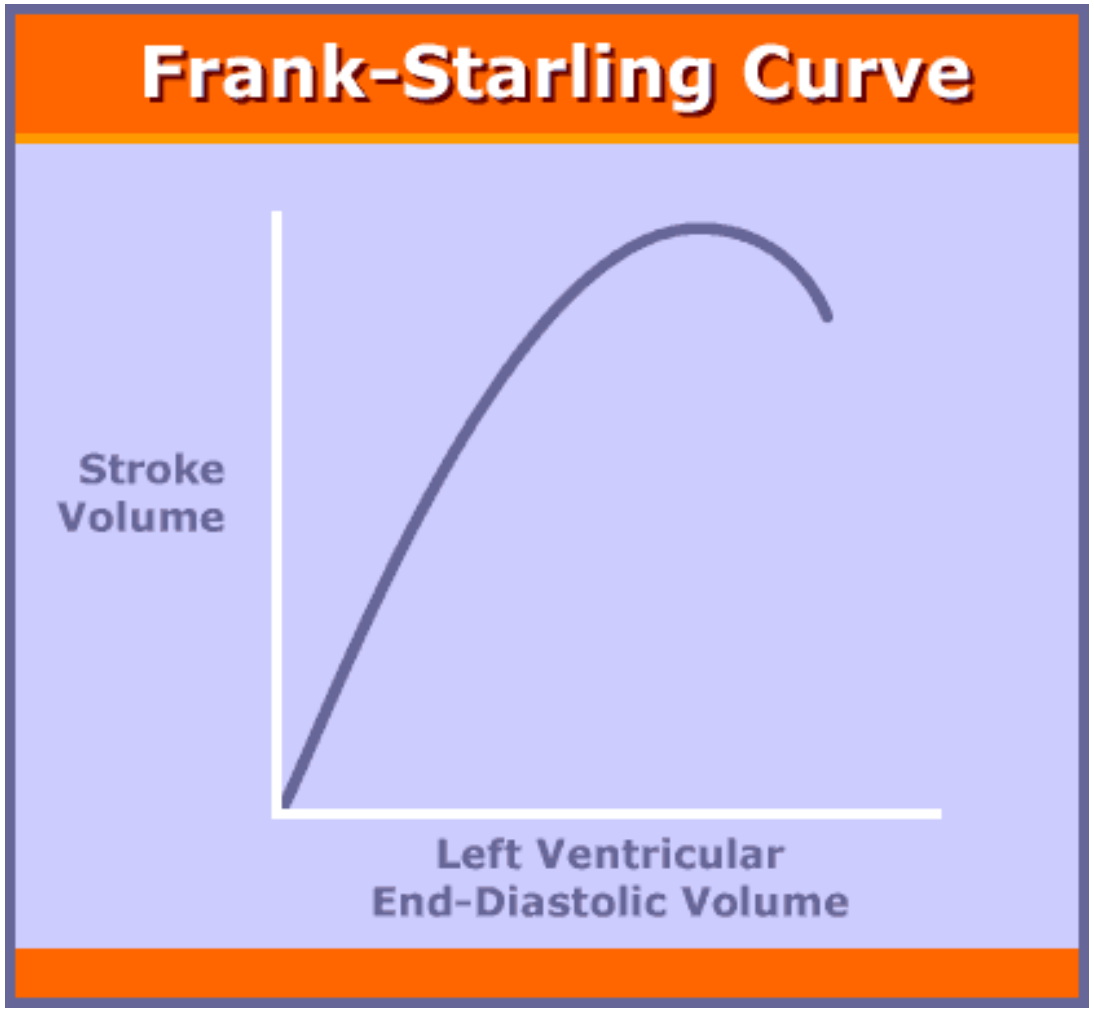

DECELERATION
INERTIAL FORCE

G – Forces - Direction



Cardiovascular effects

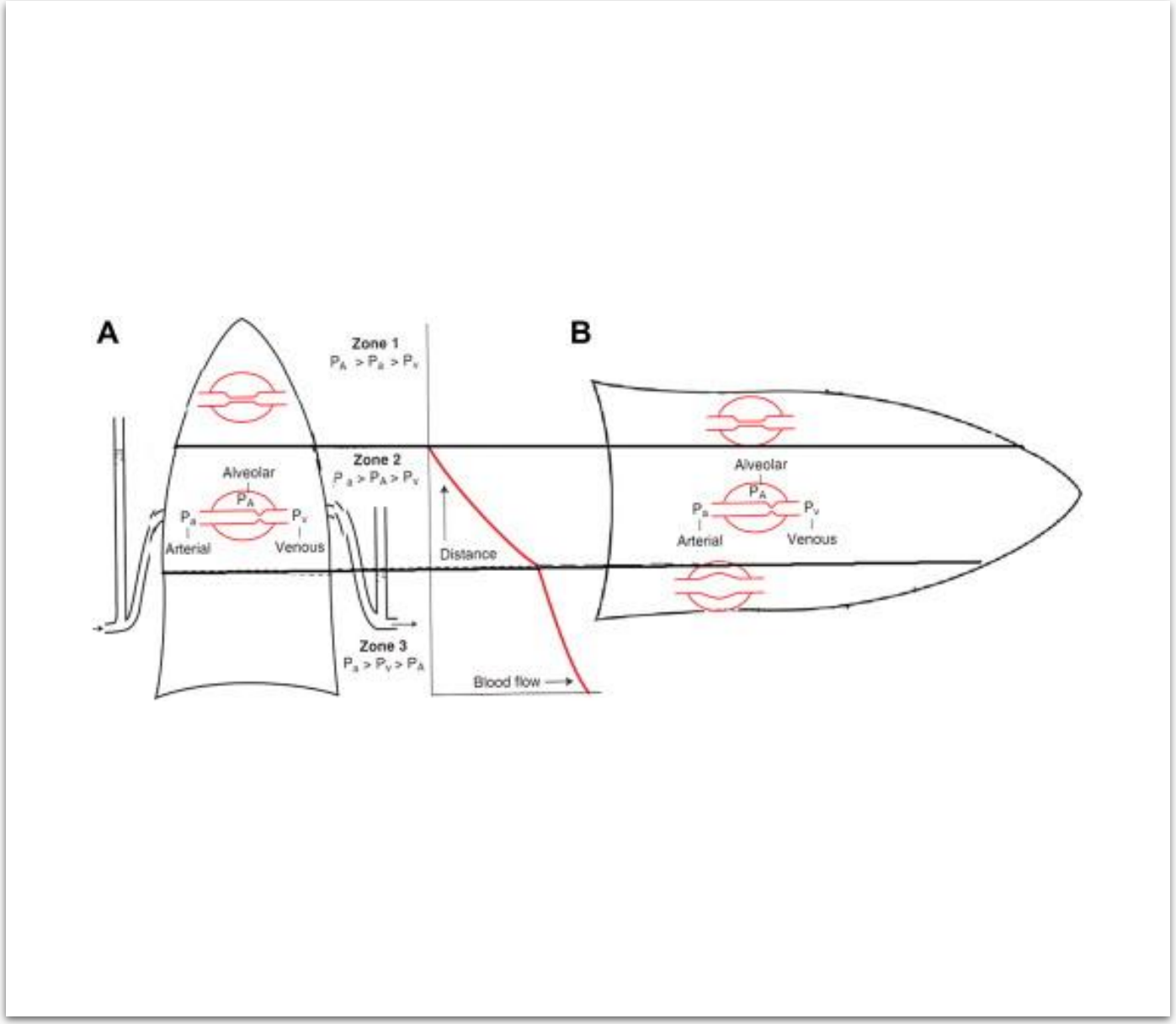
- Acceleration
  - Blood rushes to feet
  - Reduced cardiac output
  - Tachycardia/arrhythmias
- Deceleration
  - Blood rushes to head
  - Cardiac decompensation and pulmonary oedema



FULL patients travel BETTER

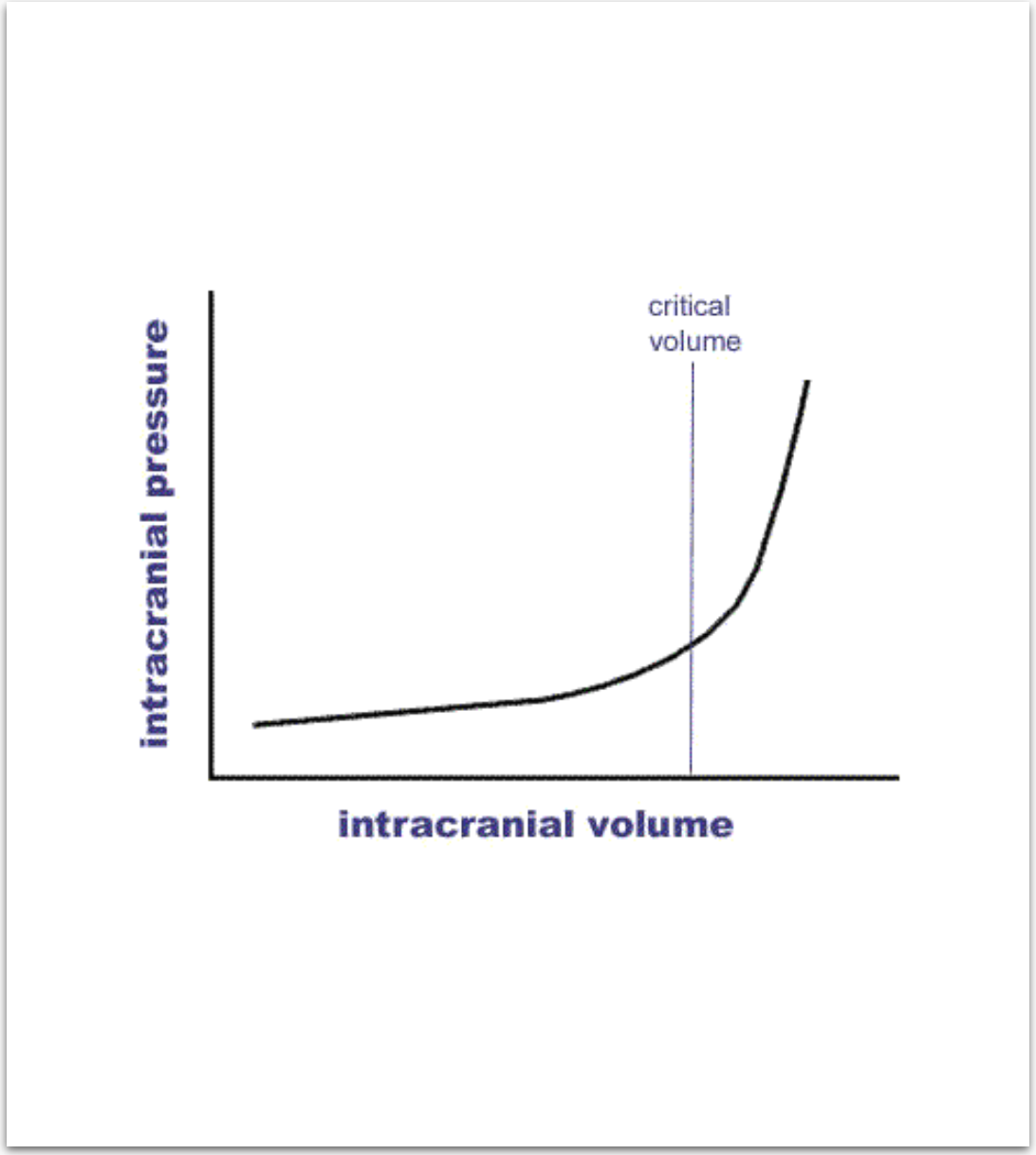
Respiratory effects

- Increased V/Q mismatch
- Increased shunt



Central Nervous System Effects

- Deceleration
  - Blood rushes to head
  - Impaired venous drainage
  - Raised ICP
- Acceleration
  - Blood pools in feet
  - Reduced cerebral blood flow



SimSTaR

Travel safely

G – Forces – Safety Aspects

- Avoid high speed transfers
- Ensure all equipment fixed or stored
- Seatbelts to be worn at all times
- Patient well secured to trolley

Summary

- Significant risks and hazards involved in patient transfer
- Static hazards risk management
- G-forces may cause clinical deterioration
  - Resuscitate patient before transfer
  - Avoid unnecessary high speeds
  - Anticipate potential need for increased support