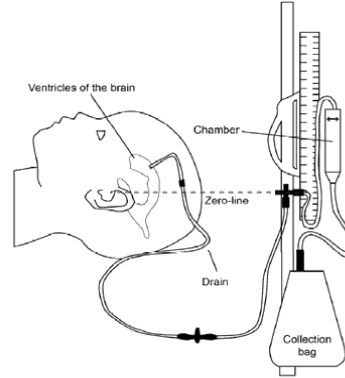


# Intracranial Pressure (ICP) Monitoring

## External Ventricular Device (EVD)

- Flexible catheter placed by neurosurgery.
- Provides intracranial pressure (ICP) values.
- Allows for drainage of CSF and intracranial blood.



## Pathophysiology of increased ICP

- Increase in brain tissue by space occupying masses
- Cerebral edema
- Increase in CSF volume
- Increase in blood volume
- Failure of compensatory mechanisms

## Raumedic PTO Catheter

- Flexible catheter placed by neurosurgery.
- Provides intracranial pressure (ICP), brain tissue oxygenation, and brain tissue temperature values.
- CSF specimen collection and drainage can not be performed.

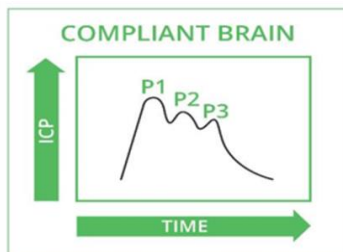


## Signs & Symptoms of increased ICP

- Changes in LOC
- Headache
- Eyes
  - Papilledema
  - Pupillary Changes
  - Impaired Eye Movement
- Seizures
  - Impaired Sensory & Motor Function
- Posturing
  - Decerebrate
  - Decorticate
  - Flaccid
- Changes in Vital Signs:
  - Cushing's Triad:
    - ↑ Systolic B/P
    - ↓ Pulse
    - Altered Resp Pattern
- Vomiting
- Decreased Motor Function
  - Change in Motor Ability
  - Posturing
- Changes in Speech



- ICP waveforms contain three peaks: P1, P2, and P3.
- Each peak correlates with a cardiac cycle.
- Each peak should decrease in height.



$$\text{MAP} - \text{ICP} = \text{CPP}$$

