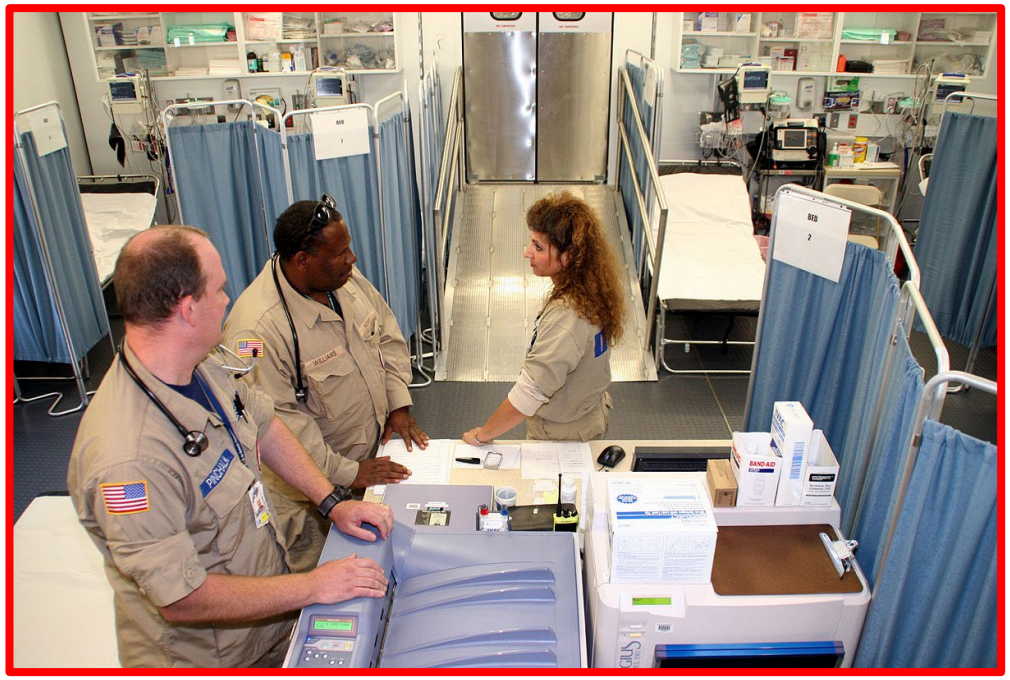
Approach to Agitation and Coma State in Emergency Department

DR. TAWFIQ ALMEZIENY

CTAS : TRIAGE ASSESSMENT

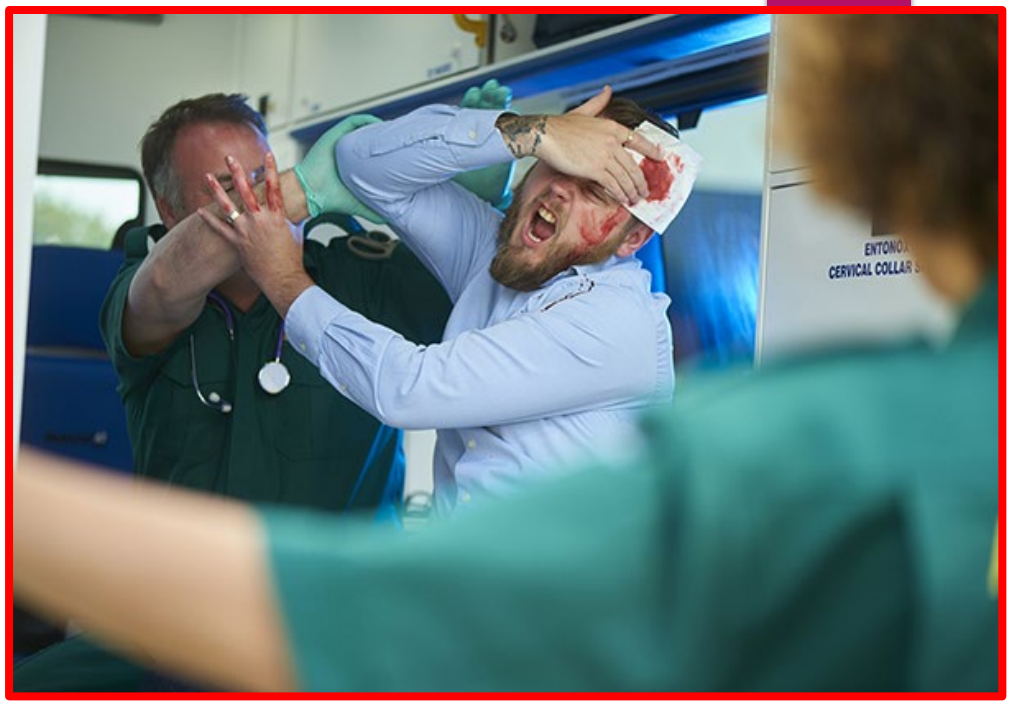
- CTATS-I: COMA
- CTAS-II: AGITATION , VIOLENCE
- CTAS-III:
- CTAS-IV:
- CTAS-V:

PART-1
AGITATION AND VIOLENCE IN EMERGENCY DEPARTMENT



WHY?

Violent Patient



AGITATION VIOLENCE

PRIORITY: SAFETY

THEN: SAFETY

THEN: SAFETY


WeCare our values
NHS
Barts Health
At The Royal
London Hospital
Respectful means...
No Violence,
No Abuse,
No Fear
RESPECTFUL
We will not tolerate any violent or abusive behaviour towards our staff or patients
Please speak up and report all incidents
Patients and relatives
Call 020 3594 2040
The Guardian

Factors that potentiate aggression in Emergency Department (ED):

- Overcrowding of ED
- Open-door policy of ED
- Drugs and alcohol
- Waiting time in ED


HURRY UP!
CAN I SEE?
200 WATT OK, DOC?
HEY!
MAINTENANCE
BONES AND STUFF
BAM
BATHROOM IN HERE?
E.R. (GOOD LUCK)
YES, JUST HURRY!
HEY! I'M NEXT!
CHOO!
HOT PIZZA!
ALL SET, DUDE?
EMT
SAY AGAIN, WHAT?

??APPROACH

1. RESTRAINT
2. BE ORGANIZED
3. BE IN-CONTROL

Case1:

- 33-years-old male , mentally-challenged brought to emergency room with C/O: Acute behavioral disturbance at home. And refusing to eat for one day!
- He was aggressive, agitated and crying
- Meds: None
- On arrival: Temp: 39° C, RR:20 /min, BP: 130/90 mmHg , HR: 140/min

Oxygen Sat.: 100%

- Physical exam: he was angry, mooning in pain.
- uncooperative and combative, moving all limbs and trying to leave hospitals
- He was actually very strong and requires almost 10 people to hold him down!.

Case1: Summary

- Mentally-Challenged
- Refusal of care and food
- FEBRILE: Temp. of 39° c

DDX: ?
ACUTE AGITATION

Common and dangerous causes of violent behavior

Toxicologic
Alcohol intoxication or withdrawal
Stimulant intoxication (eg, methamphetamine, phencyclidine, cocaine)
Other drugs and drug reactions (eg, anabolic steroid, sedative-hypnotic)
Metabolic
Hypoglycemia
Hypoxia
Neurologic
Stroke
Intracranial lesion (eg, hemorrhage, tumor)
CNS infection
Seizure
Dementia
Other medical conditions
Hyperthyroidism
Shock
AIDS
Hypothermia; Hyperthermia
Psychiatric
Psychosis
Schizophrenia
Paranoid delusions
Personality disorder
Antisocial behavior

CASE 2:

- 30-years-old female, not known to have any medical illness
- Presented with acute agitation in ED: aggressive, shouting, talkative and was in hyperactive state.
- Was repetitively saying: " you are devils…satans….etc" ..
- Denied any recent drug ingestion
- Physical Exam: Vitals: 180/100 mmHg – HR: 144/min – O2Sat: 100%-
  Temp: 36.7° c

CASE 2:

- Physical exam (cont'd): normal
- Neurological exam: normal
- Psych. Assessment: normal speech, abnormal thoughts, paranoid ideas
- Investigations: normal
- Imaging of brain: normal
- Finally: Seen by Psychiatrist; Diagnosed to have

  New-onset Psychosis

Emergency Room Essentials:

- Large security force
- Metal detectors
- Bulletproof glass in triage areas
- Keypad security entry system
- Monitoring entry into the ED
- Strong barriers to prevent cars from driving into the department

PANIC ALARM SYSTEMS

Signs of Potential Danger !

- Provocative behavior
- Angry demeanor
- Loud, aggressive speech
- Tense posturing (eg, gripping arm rails tightly, clenching fists)
- Frequently changing body position, pacing
- Aggressive acts (eg, pounding walls, throwing objects, hitting oneself)

PREVENTION MEASURES

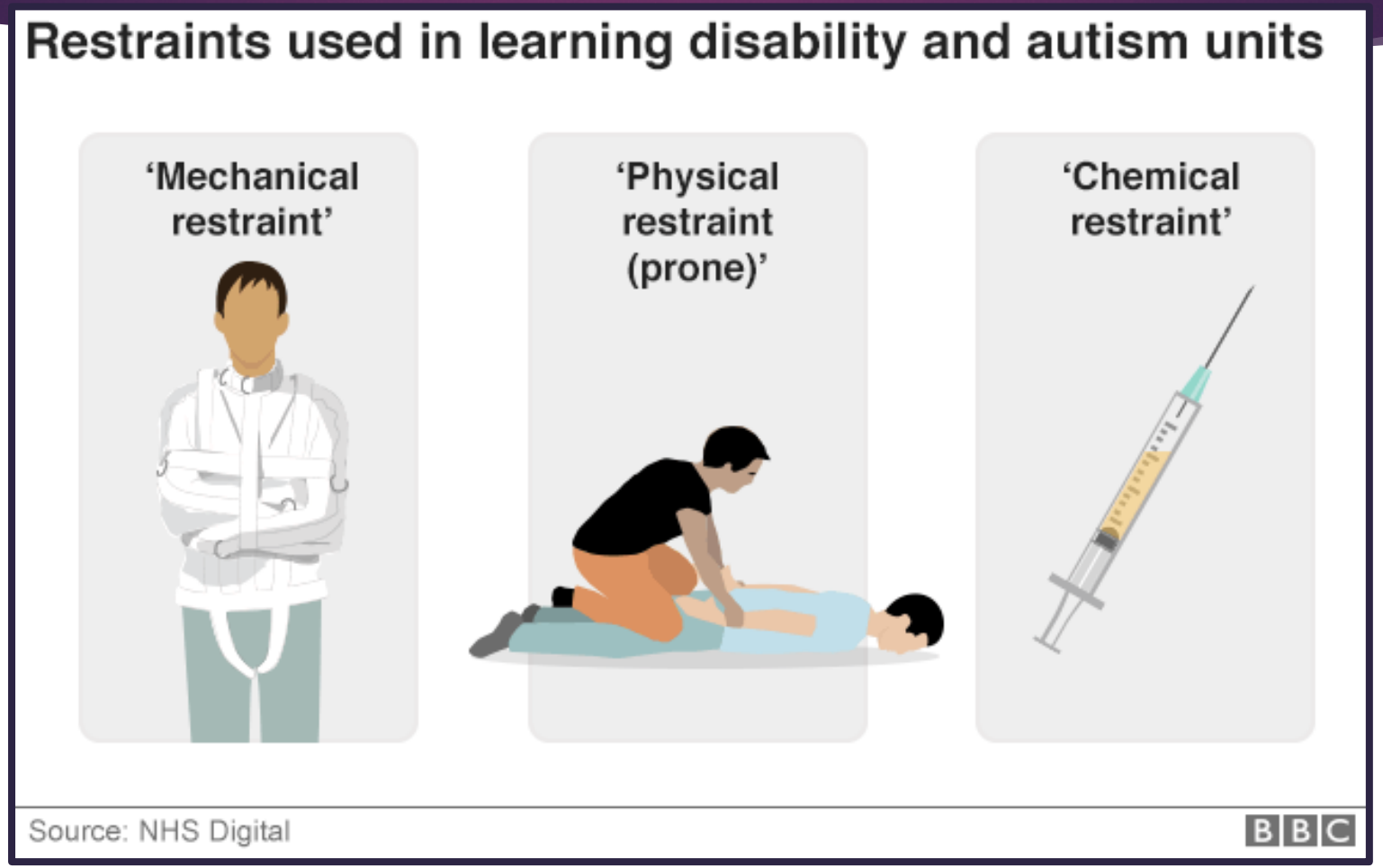
- SECURITY PERSONNEL
- ALARM SYSTEMS
- LIMITING ACCESS
- HEALTH-CARE WORKERS (HCW) EDUCATION

General: Important

- VERBAL TECHNIQUES
- PHYSICAL RESTRAINTS: FOUR POINTS
- CHEMICAL RESTRAINT: DRUGS
- RAPID INSPECTION: FOR ANY OBJECTS
- SECLUSION ROOM
- MONITORING
- RAPID ASSESSMENT OF THE PATIENT: ? DDX

4-POINTS BODY RESTRAINT

Other methods?



SECLUSION ROOM

CHEMICALS : DRUGS

- BENZODIAZIPNES: LORAZEPAM - MIDAZOLAM – DIAZEPAM
- ANTIPSYCHOTICS: HALOPERIDOL - DROPERIDOL

Combination: preferred

Lorazepam 2 mg IM

+

Haloperidol 10 mg IM

Post-Restraint….Care:

- Hypoglycemia
- Hypoxia
- Infection
- Drug overdose or withdrawals
- Intracranial lesions
- ……others

Important clues:
Medical VS Psychiatric

- Above 40 years
- New-onset psychiatric illness
- Unstable vital signs

MEDICAL!

PART-II
COMATOSED STATE IN EMERGENCY DEPARTMENT

CASE 3:

- 70-years-old male , known to have NIDDM and HTN
- Brought unconscious to hospital by family
- On arrival to ED: The patient was totally comatosed
- Vitals: HR: 120/min , BP: 160/90 , RR: 16/min, O2 saturation: normal
  Gluco-check: 9 mmol
  ECG: normal
  Physical exam: unremarkable

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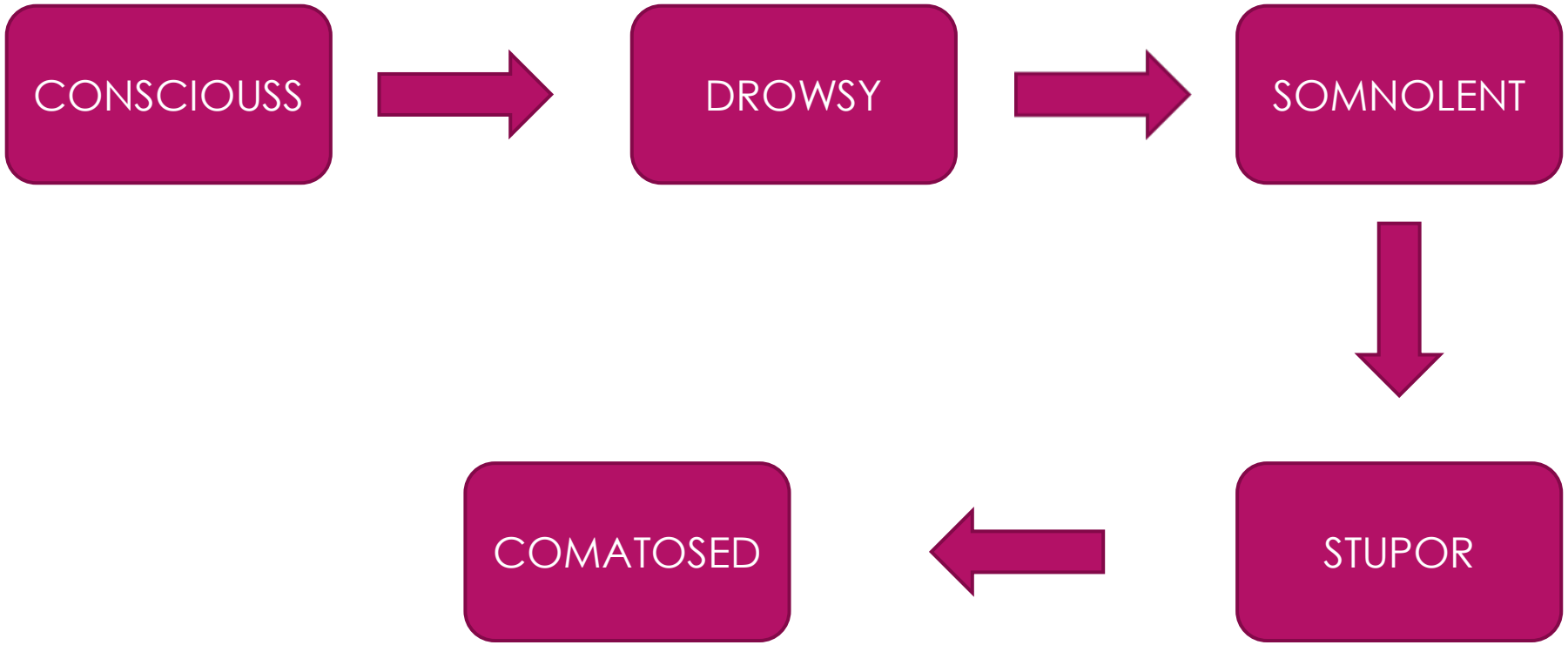
NA: 110 meq/L

Definition of Coma ?



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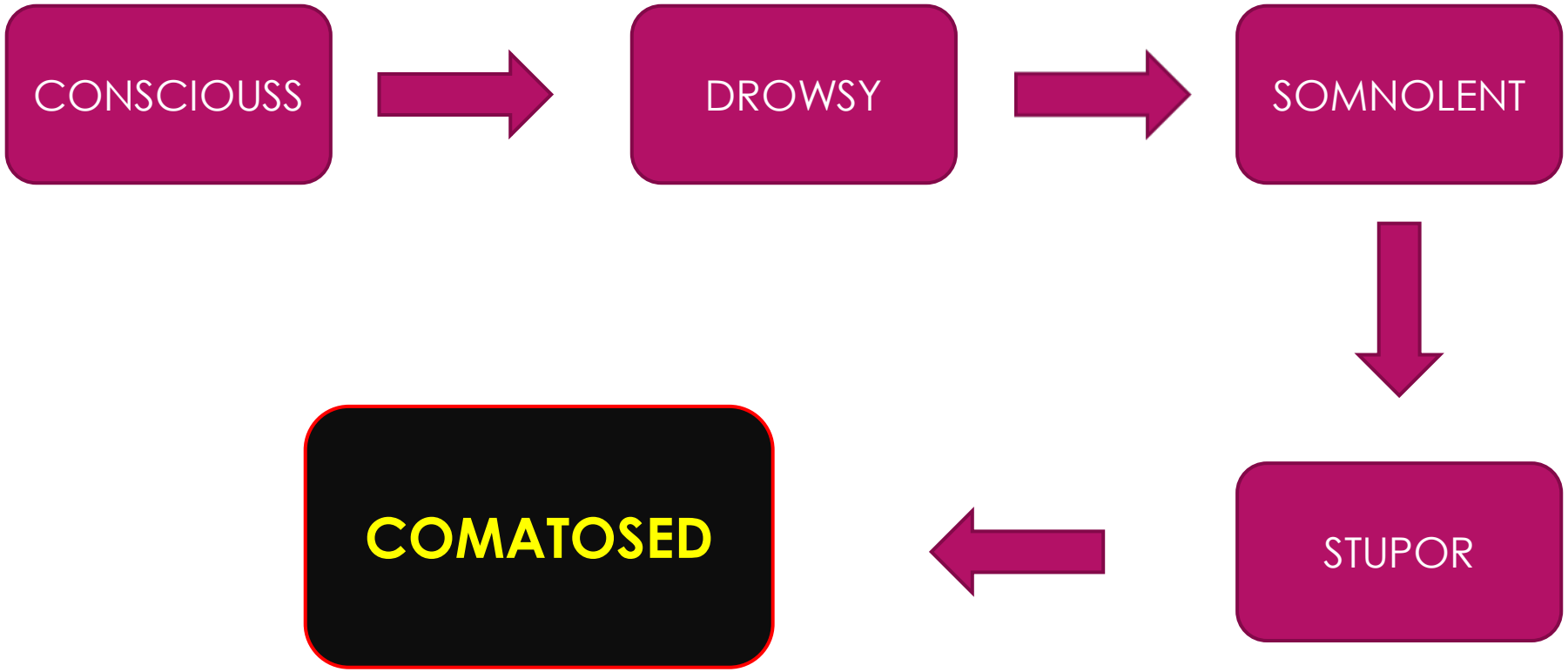


AVPU SYSTEM

		ADULT BEHAVIOR	PEDIATRIC BEHAVIOR
A	ALERT	Eyes open spontaneously. Appears aware of and responsive to the environment. Follows commands eyes tract peoples and objects.	Child is active and responds appropriately to SO and other external stimuli.
V	VOICE	Eye do not open spontaneously but open to verbal stimuli. Able to respond in some meaningful way when spoken to.	Responds only when his or her name is called by SO.
P	PAIN	Does not respond to questions but moves or cries out in response to painful stimuli such as pinching the skin or earlobe.	Responds only when painful stimuli is received such as pinching the nail bed.
U	UNRESPONSIVE	Patient does not respond to any stimuli.	No response at all.

GLASGOW COMA SCALE

TABLE 38-2

Glasgow Coma Scale

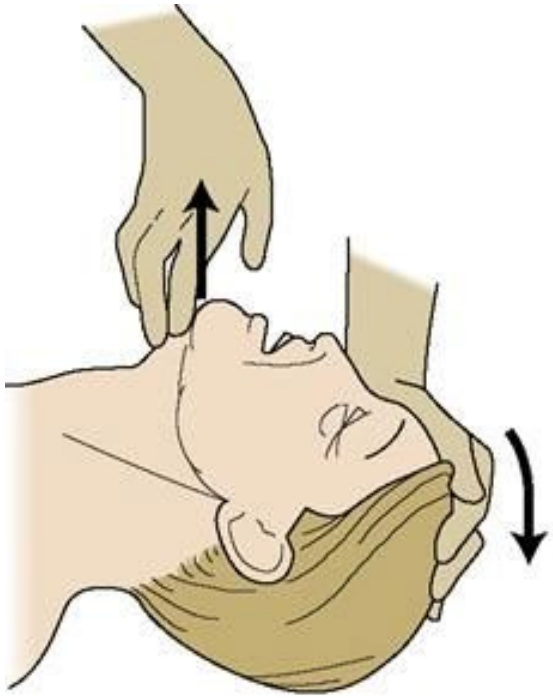
BEHAVIOR	RESPONSE	SCORE
Eye opening response	Spontaneously	4
	To speech	3
	To pain	2
	No response	1
Best verbal response	Oriented to time, place, and person	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	No response	1
Best motor response	Obeys commands	6
	Moves to localized pain	5
	Flexion withdrawal from pain	4
	Abnormal flexion (decorticate)	3
	Abnormal extension (decerebrate)	2
	No response	1
Total score:	*Best response*	15
	Comatose client	8 or less
	Totally unresponsive	3

Initial Evaluation

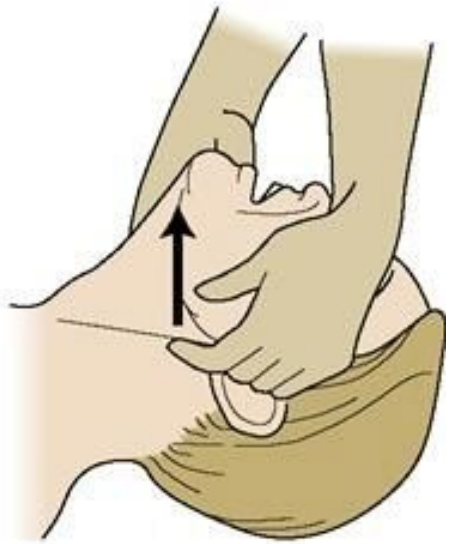
- LIFE-SAVING

A B C D

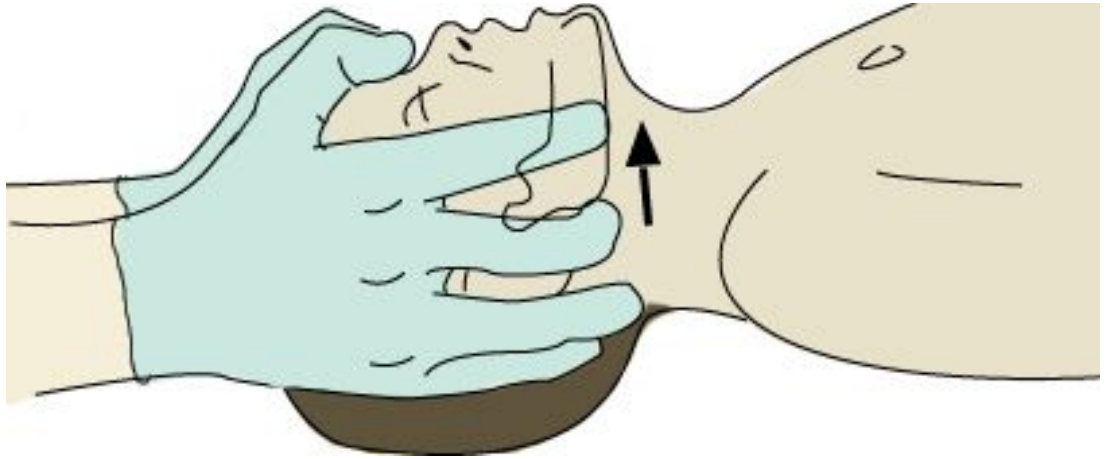
(A) : AIRWAY : COMES FIRST -NUMBER ONE 1



Head tilt–chin lift maneuver



Jaw-thrust maneuver



(B) : BREATHING

- **LOOKS FOR SIGNS OF RESPIRATORY DISTRESS:**

WOB and Patterns of breathing

RR

OXYGEN SATURATION

USE OF ACCESSORY MUSCLES

COUGHTIN

STRIDOR

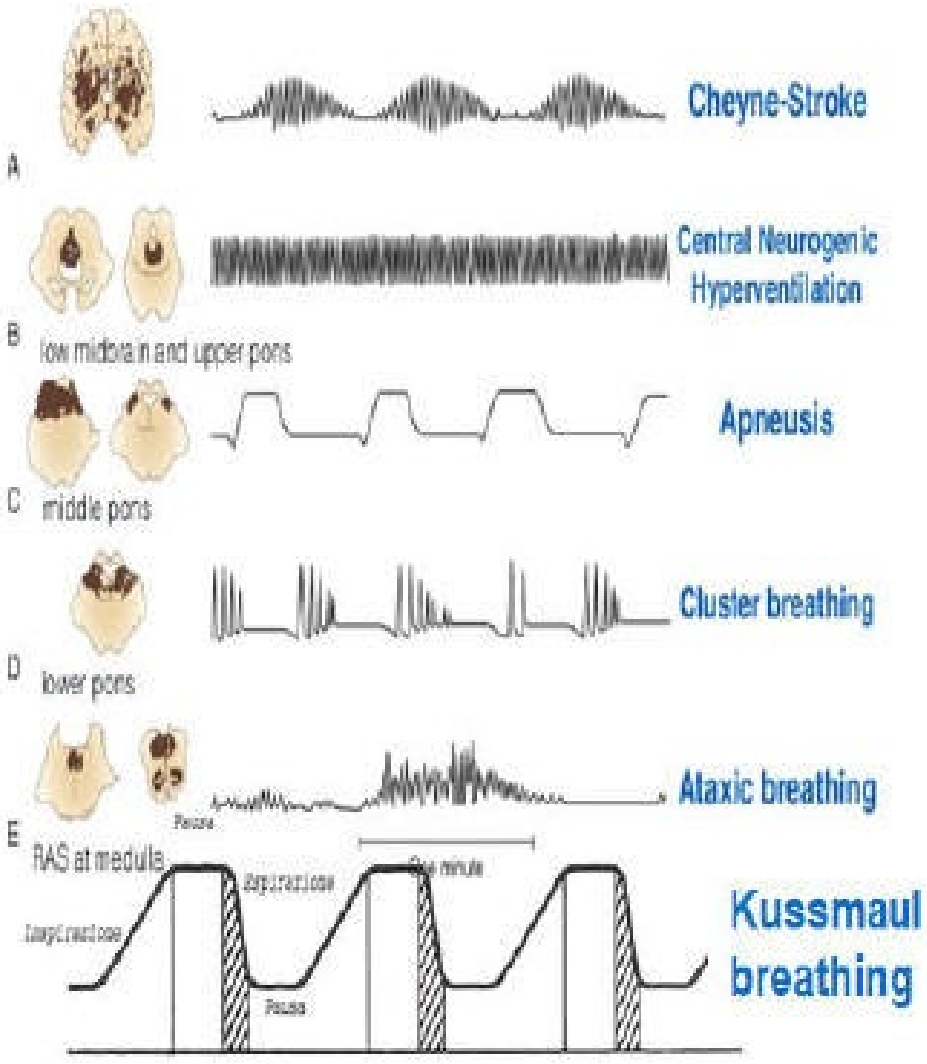
GRUNTING

GASPING

Breathing Patterns

- Spontaneous breathing
- Cheyne-Stokes Respiration
- Central hyperventilation
- prolonged inspiratory pauses
- irregular ataxic breathing
- Kussmaul breathing

Abnormal Respiratory Pattern



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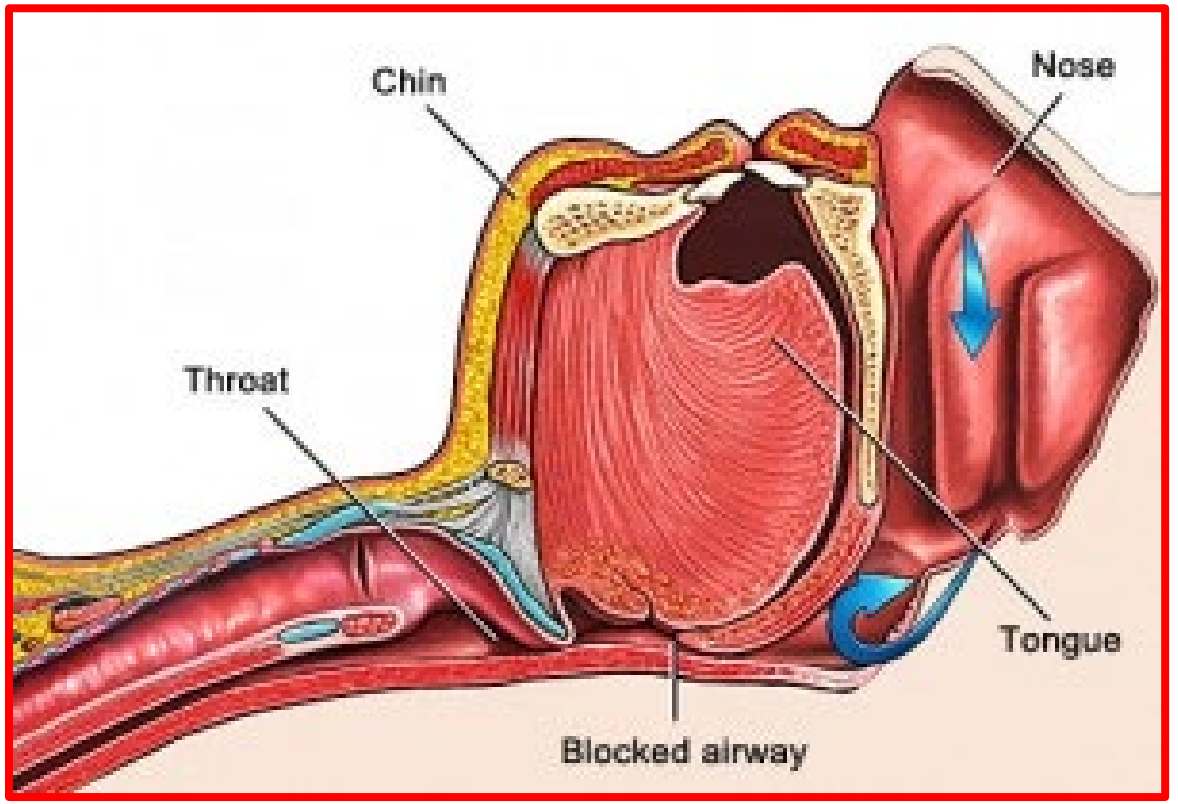
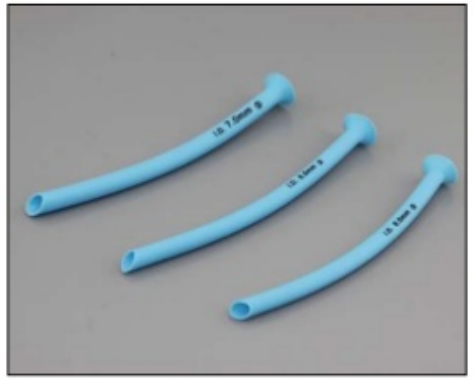


Airway adjunct devices

- Oropharyngeal airway
- Nasopharyngeal airway



INTUBATION

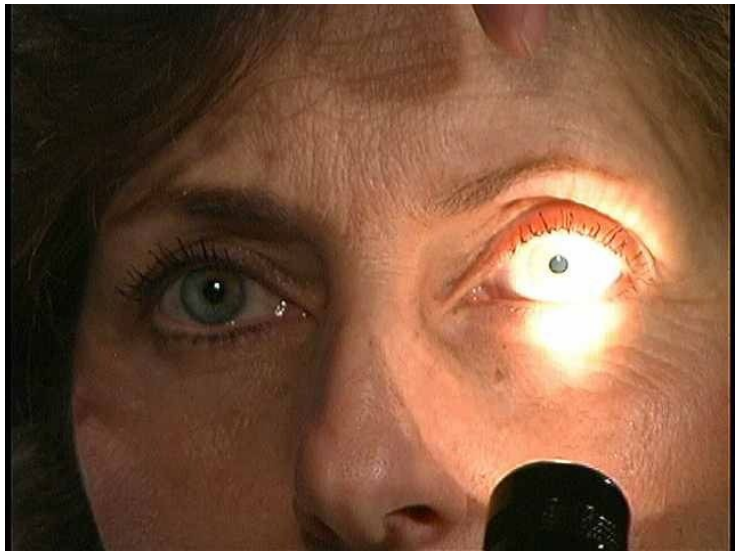
MECHANICAL VENTILATION

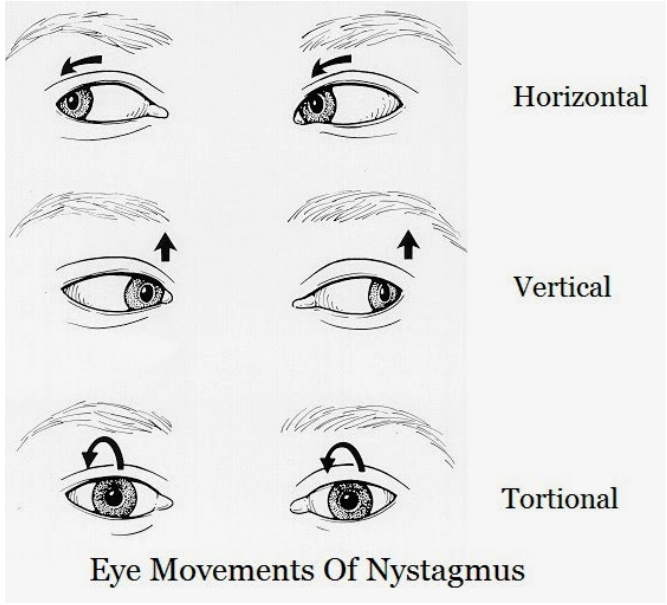
C: CIRCULATION : VOLUME DEPLETE ?

- VITAL SIGNS : HR AND BP
- PHYSICAL EXAM: LOOKS FOR SIGNS OF SHOCKS
- ECG

ONE PATIENT: COMATOSED
HR: 144/min WEAK PULSE
BP: 70/40 mmHg
DRY MM
DECREASE SKIN TURGOR
PALLOR CONJUNCTIVAE

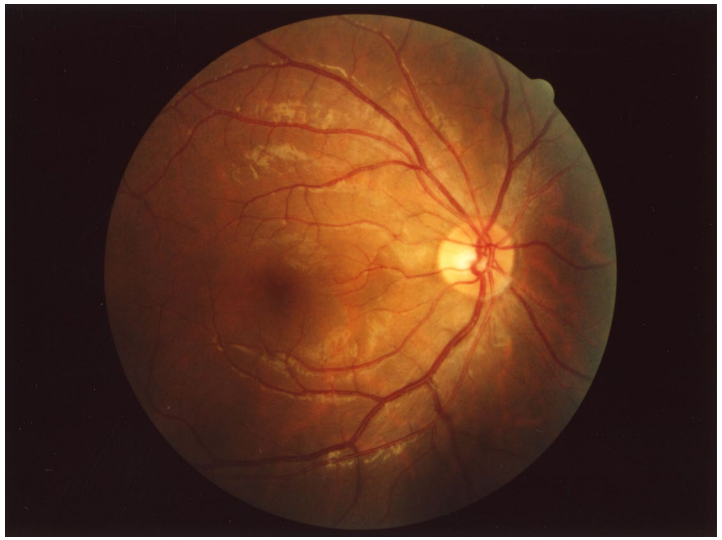
Neurological Examination:
Very important

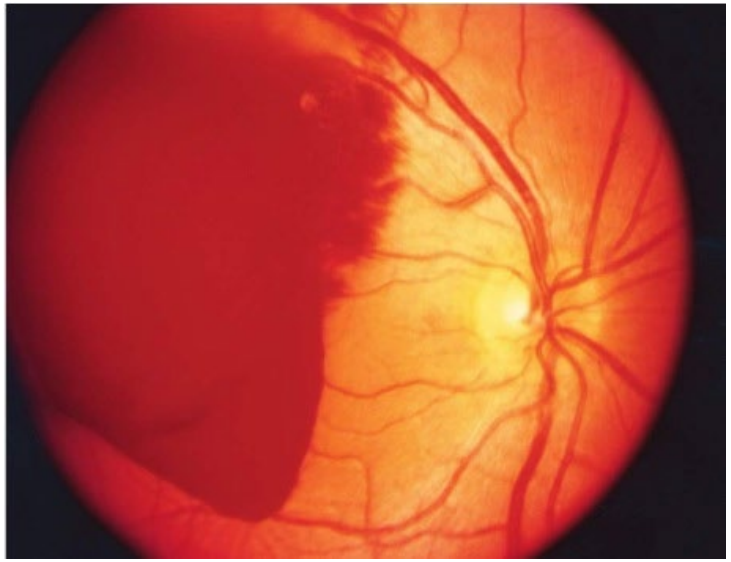




Eye Movements Of Nystagmus

Neurological Examination:
Very important





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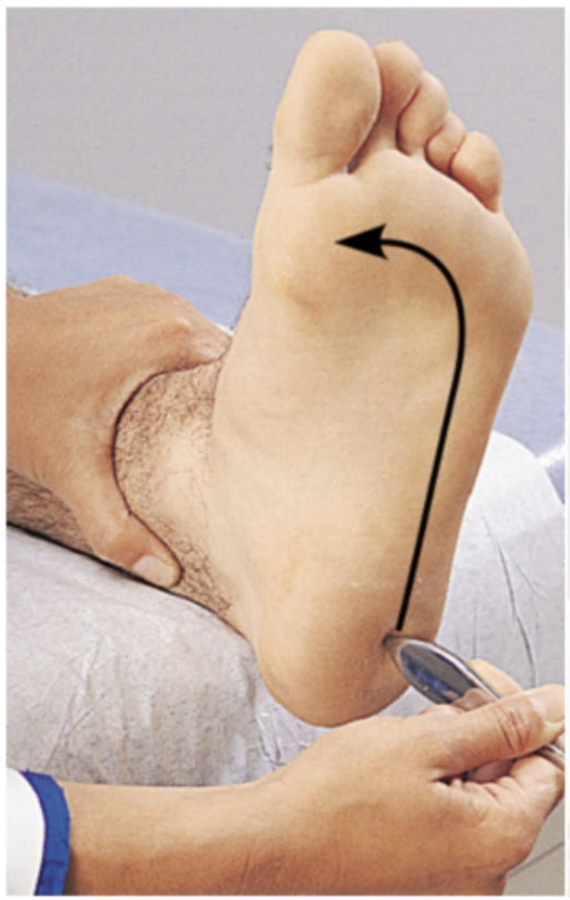
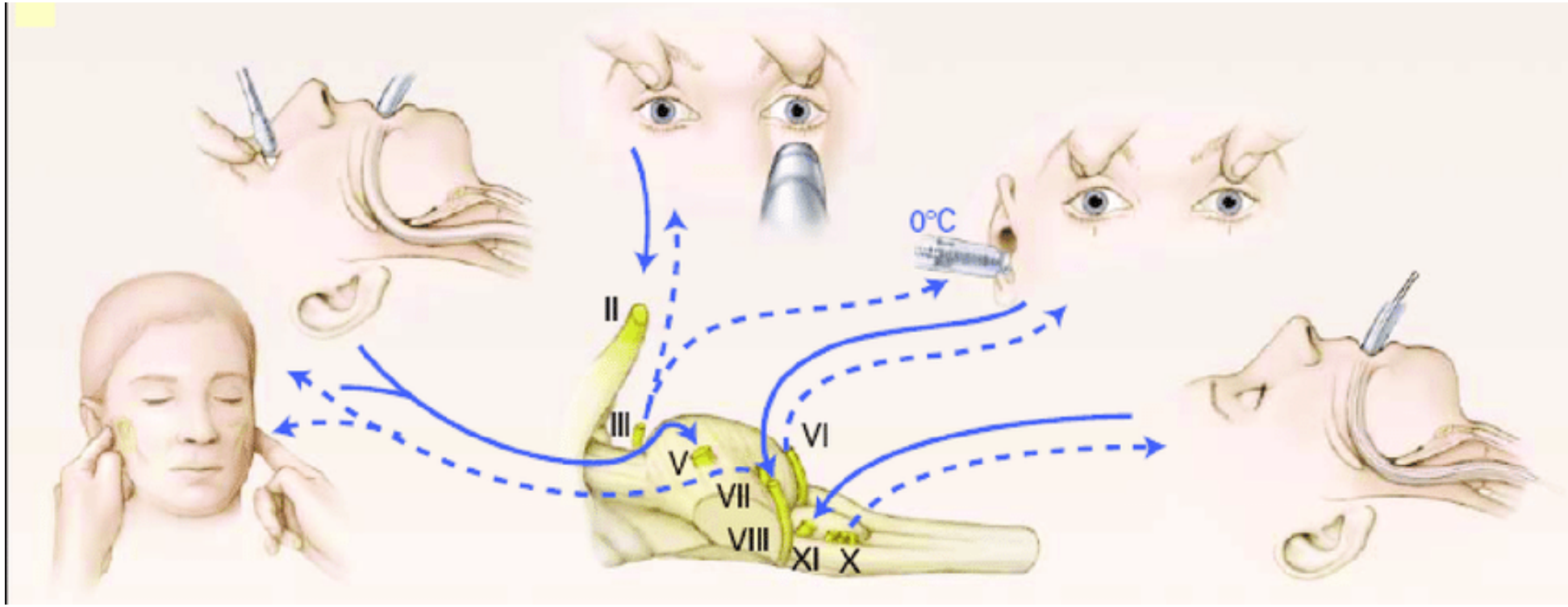


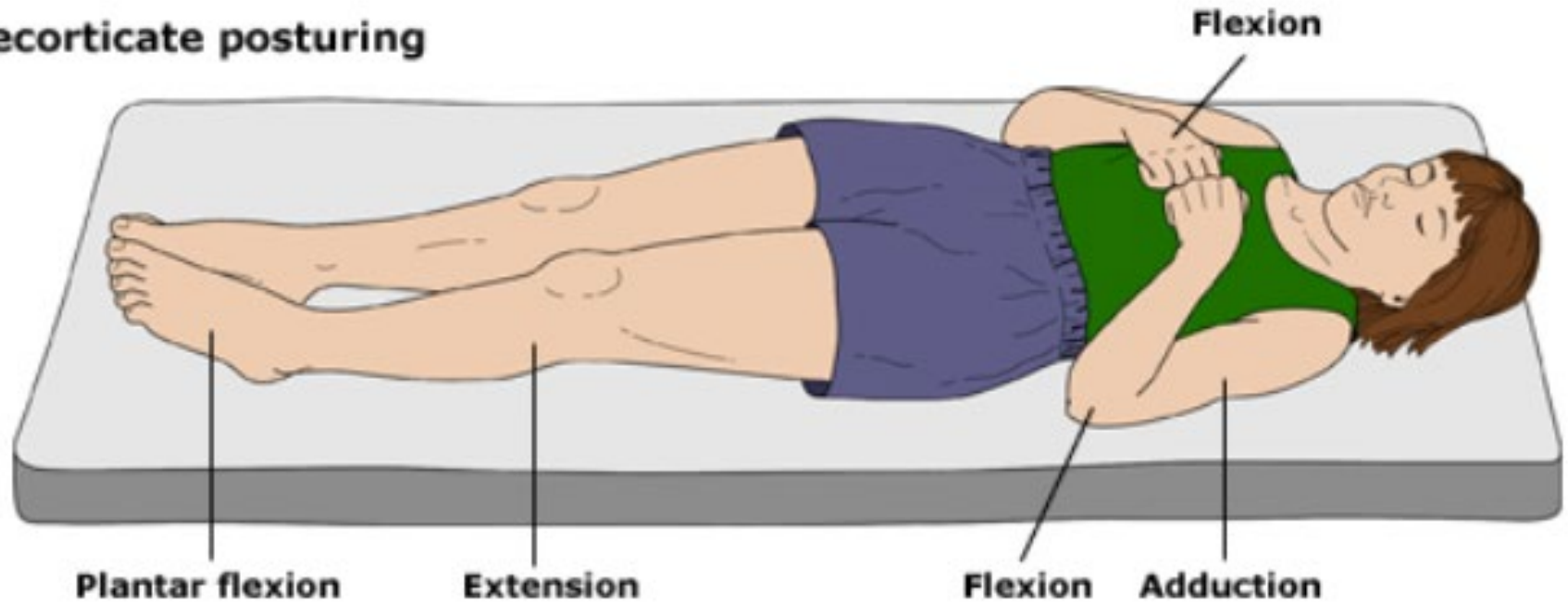
(D) : Disability
The Neurological Status

- GCS OR (AVPU) SCALE
- EYE EXAMINATION
- PUPILLARY EXAMINATION
- CORNEAL REFLEXS
- COUGH AND GAG REFLEX
- VESTIBULO-OCULAR REFLEX (VOR)
- MOTOR EXAMINATION
- SENSORY : ICE
- PLANTAR RESPONSE

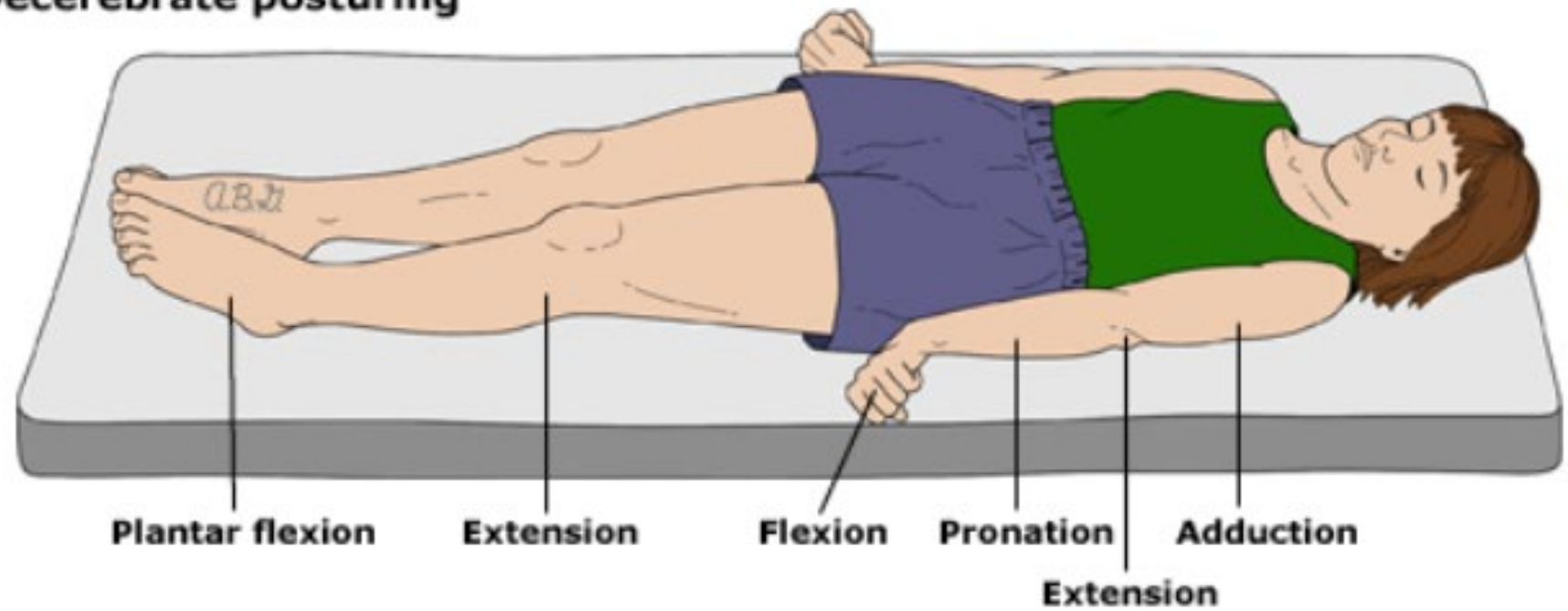
(D) : Disability
The Neurological Status



Decorticate posturing



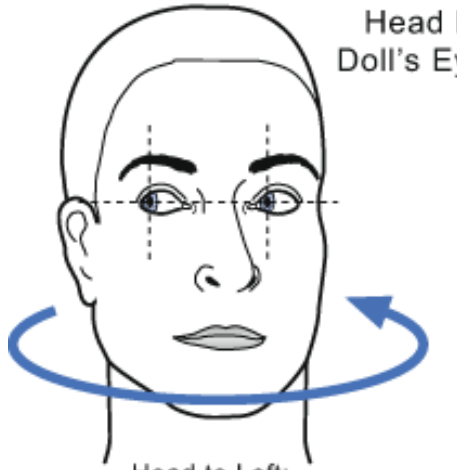
Decerebrate posturing



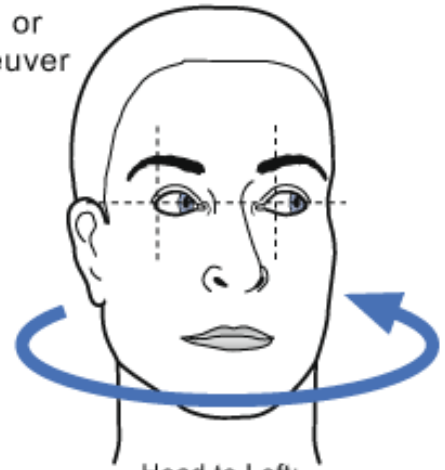
Normal Response

Abnormal Response

Head Rotation or Doll's Eye Maneuver

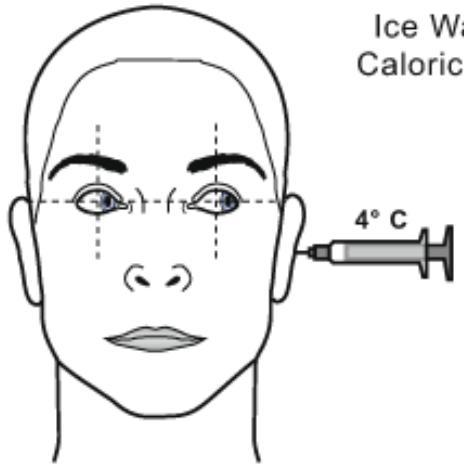


Head to Left:
Eyes Hold Original Position

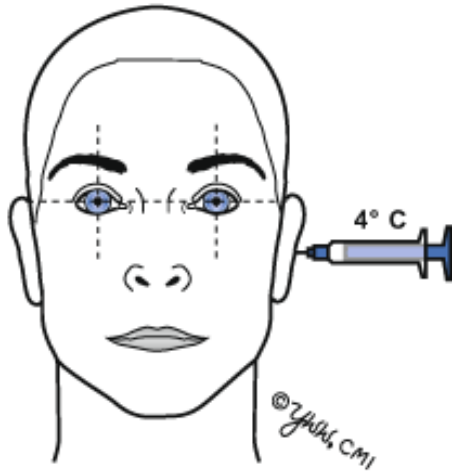


Head to Left:
Eyes Move With Head

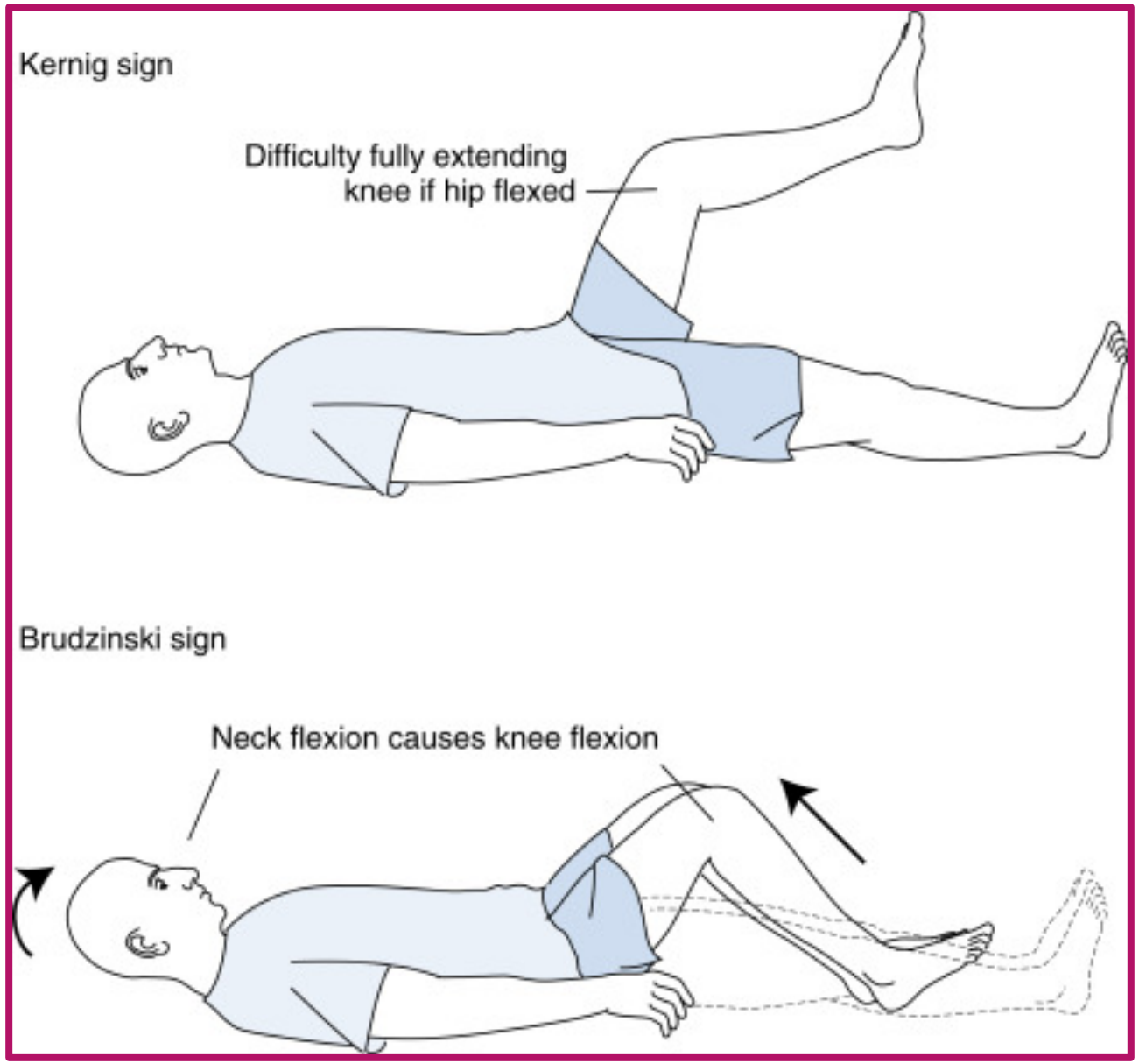
Ice Water Caloric Test



A Normal Tonic Response



A Negative Response


Kernig sign
Difficulty fully extending
knee if hip flexed
Brudzinski sign
Neck flexion causes knee flexion

DDX ?

Causes with focal signs

- no meningism — stroke, space occupying lesions (e.g. tumor, hemorrhage, abscess), injury, inflammation
- meningism — meningoencephalitis, subarachnoid hemorrhage (SAH)

DDX ?

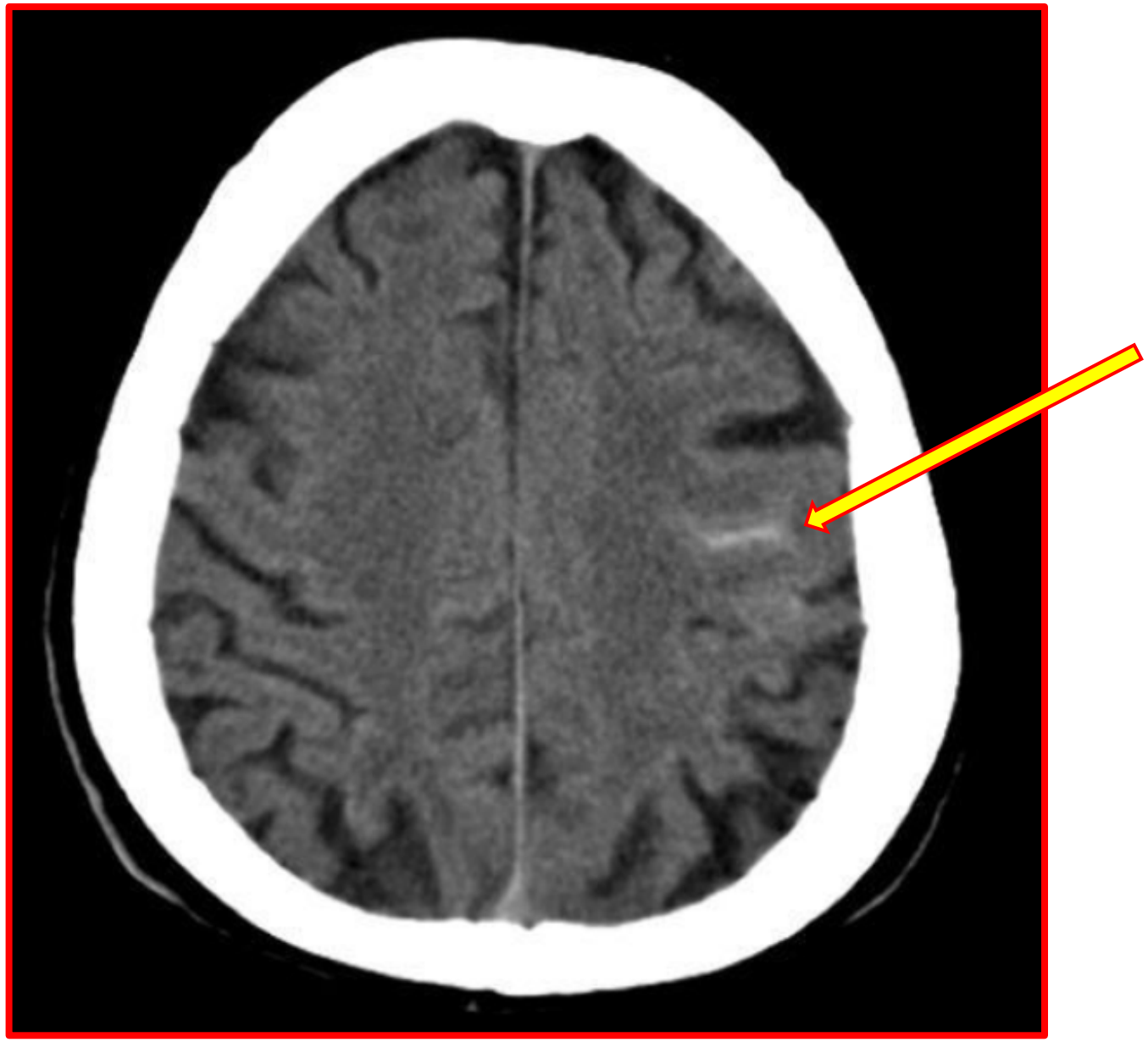
Systemic causes without focal signs

- Toxins
- Organ failures
- Metabolic — (CO_2, O_2, ammonia, temperature, pH, electrolytes, glucose, serum osmolality)
- Endocrine
- Seizures

TOMES
COATPEGS

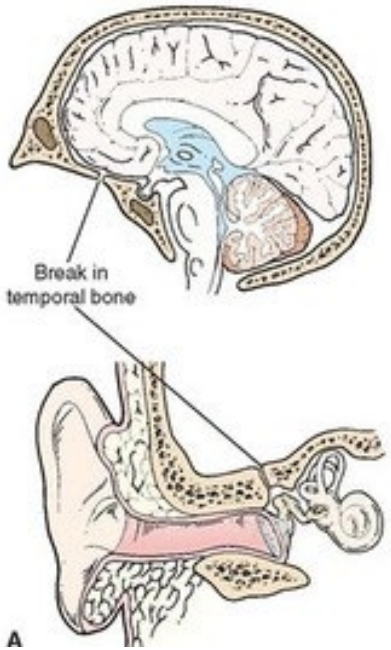
Case: 4

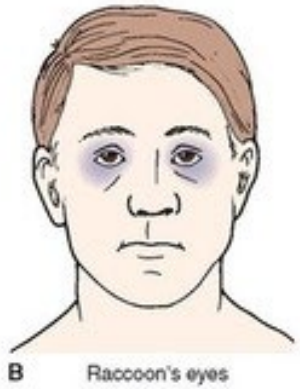
- 28-years-old male , previously healthy
- Developed seizure at home (for first time)
- Brought to hospital after two hours: …(post-ictal state)
- Not responding to any verbal or painful stimuli.
- Vital signs: normal
- Physical exam: no neurological deficit detected
- Systemic exam: normal



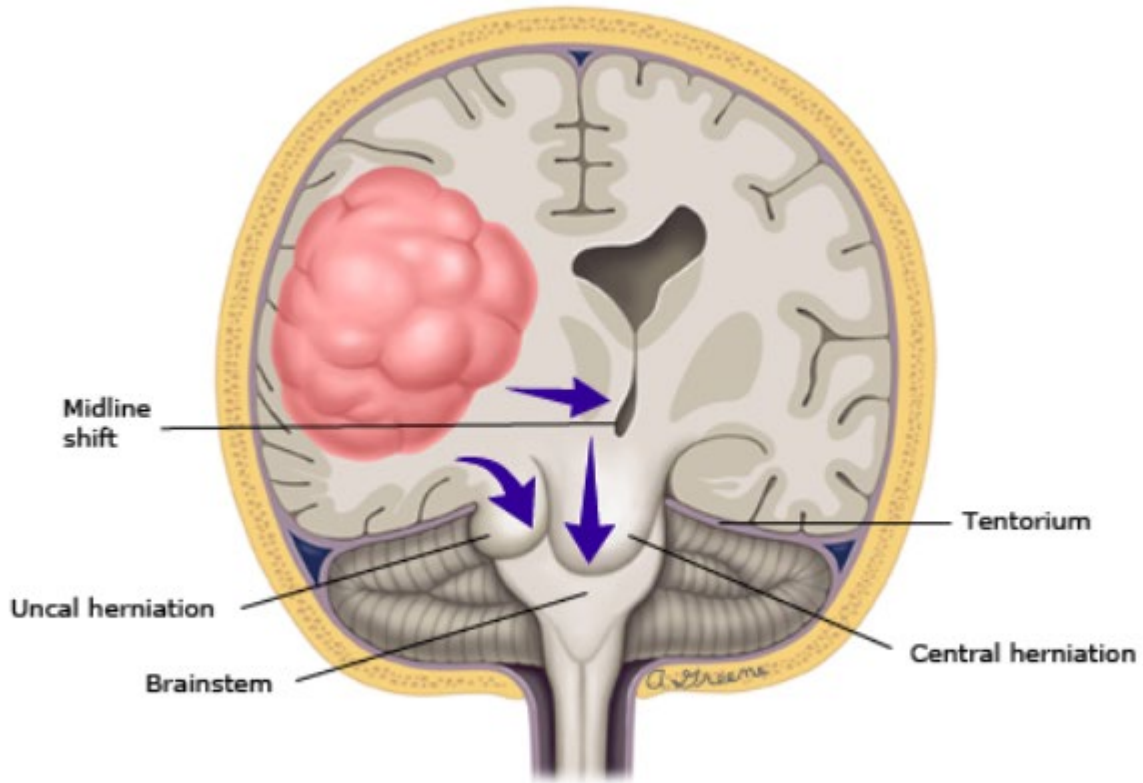
QUIZ?

TRAUMATIC BRAIN INJURY (TBI)





Transtentorial herniation



Clinical signs of central transtentorial herniation with rostral-caudal deterioration

SUMMARY

- COMATOSED PATIENT: ((LIFE-THREATING))
- MONITORING
- ABCD APPROACH
- HISTORY AND PHYSICAL EXAM
- GOOD FOCUSED NEUROLOGICAL EXAM
- GIVE COMA COCKTAILS: GLUCOSE, THIAMINE, NALOXONE, FLUMAZENIL
- ECG, COMPLETE BLOOD INVESTIGATIONS
- CT SCAN OF BRAIN IS REQUIRED

QUESTIONS ?

THANKS

ALMEZEINY@GMAIL.COM