

CHHOTI COPY REVISION: PART 1

SHORT SUBJECTS

Dr. Shreya

Anesthesia

Cannula sizes

14 G	Orange	270 ml/min
16 G	Grey	210 ml/min
17 G	White	130 ml/min
18 G	Green	80 ml/min
20 G	Pink	50 ml/min
22 G	Blue	30 ml/min
24 G	Yellow	20 ml/min
26 G	Violet	10 ml/min

Porphyria

Improves by

- 1) Glucose
- 2) Heme

worsens max

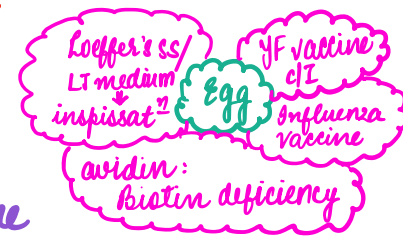
with barbiturates

Anaesthetic agent of

choice: Propofol

Thiopentone is c/I

- LMA Size ≤ 3 - child, 4 - female adult, 5 - male adult
- GORY PB ^{14 16 18 20 22 24} NG tube and Foley's catheter (smallest - 14 Fr, largest - 24 Fr) (1 Fr = 0.3 mm) infant = NIMU adult = NEX
- BIS: adequate depth of anaesthesia: 40-60 0: dead 100: fully awake
- INFUSION SYNDROME, Painful injection-Soyabean oil, egg lecithin, TIVA: Propofol
- DOC in asthma, Cyanotic HD, Shock Ketamine (NMDA \ominus : Phencyclidine analogue)
- DOC in cardiac surgery Etomidate (s/e: adrenal suppressⁿ) c/I in glaucoma, seizure
- Narcoanalysis, DOC in hyperthyroidism, seizures, Vasospasm intraarterial Thiopentone
- Cardiotoxic LA Bupivacaine c/I in IVRA (Bier's block) \rightarrow DOC: Papaverine
- Cardiostable MR: Vecuronium
- Shortest acting MR: Succinylcholine NDMR: Gantacurium > Mivacurium
- Suggamadex: Ro/Vecuronium (Neostigmine with atropine)
- LAST DOC: 20% Intralipid
- Adequate CPR ETCO₂: > 20 mm Hg
- Spontaneous ventilation circuit: Mapleson A ~ Magill/Lack
- Controlled ventilation circuit: Mapleson D ~ Bain
- Stop Clopidogrel: 7d Warfarin: 5d LMWH: 12-24h UFH: 4 hrs Lithium: 48 hrs ACE/ARB/OHG/Insulin: omit morning dose
- Adequate CPR: 5-6 cm (2 inch) ($\frac{1}{3}$ rd AP diameter); 100-120/min; 10 breaths/min; 30:2, carotid pulse
- Neonate: 40-60 breaths/min; 3:1; 100-120/min, HR child: 20-30 breaths/min; 15:2 (2 rescuers), femoral pulse
 Infant: brachial pulse



- Epinephrine dose $\left\{ \begin{array}{l} \text{status asthmaticus / anaphylaxis} : 1:1,000 \text{ IM/SC} \\ \text{ACLS} : 1-10,000 \text{ IV/IO/IT} \end{array} \right.$
- **Not** used for weaning **CMV** (controlled mandatory ventilation)
- Ventilator settings for ARDS: TV: 6 ml/kg PEEP: $5 \text{ cm H}_2\text{O}$ FiO₂: $\overset{\text{initial } 100\%}{f_{Ib} < 60\%}$ RR: $< 35 \text{ breaths/min}$
- Shortest acting opioid: **Remifentanyl**
- QT prolongation **Meperidine**
- **Aldrete score**: Activity / Respiration / Circulation / Consciousness / O₂ saturation *discharge fitness after daycare*
- Peripartum ~~LSCS~~ *delivery within 5 mins. Any incision, no OT required*
- Fasting: Solid: 8 Hr Liquid: 6 Hr Breastmilk: 4 Hr Water: 2 Hr
- Beer Lambert law **Pulse oximetry** False negative SpO₂ in $\left\{ \begin{array}{l} \text{methHb} \\ \text{carboxyHb} \end{array} \right\}$ *CO-oximetry used*
- **Dibucaine number < 30**: Prolonged Sch / Mivacurium
- **Soda lime** : CaOH (80%) + NaOH + KOH
- CO with dessicated sodalime **Desflurane**
- MAC min: *Methoxyflurane > Halothane* Max: **N₂O**
- BGC: $(\alpha \frac{1}{\text{speed}})$ min: **Xenon > Desflurane** max: **Halothane**



Nasal cannula

5 L/min

40%



Hudson mask

10 L/min

60%



Venturi device

15 L/min

60%



NRBM

15 L/min

85-90%



60 L/min

100%



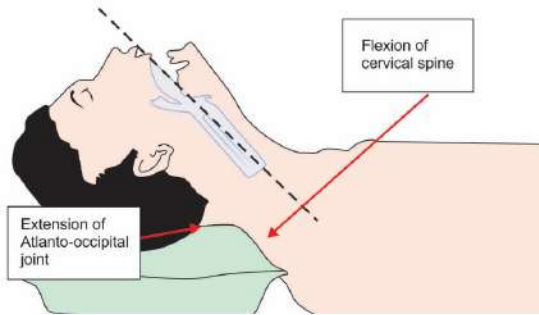
HFNC

provides PEEP
reduces dead space



NIV

desired flow rate
100%



Flexion of cervical spine

Extension of Atlanto-occipital joint

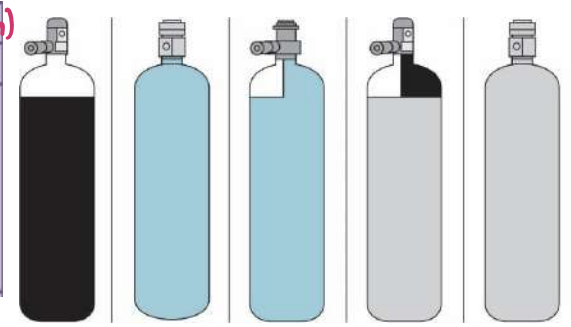


Larson manoeuvre
↓
Laryngospasm

ET Tube ~ sniffing position

No drug	Nondepolarizing block	Depolarizing block (Sch)	
		Phase I	Phase II
Train-of-four TOF-R = 1.0 2 Hz	Fade TOF-R = 0.4	Constant but diminished TOF-R = 1.0	Fade TOF-R = 0.4

best nerve to check TOF: ulnar nerve
Tetanic frequency: 50 Hz



O₂ 2,5
N₂O 3,5
Entonox 7
Air 1,5
CO₂ >7.5 1,6
<7.5 2,6



sevoflurane
isoflurane
halothane
desflurane

DISS: safety

ASA PS Classification	Definition	Examples, including, but not limited to:
ASA I	A normal healthy patient	Healthy, non-smoking, no or minimal alcohol use
ASA II	A patient with mild systemic disease	Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy, obesity (30<BMI<40), well-controlled DM/HTN, mild lung disease
ASA III	A patient with severe systemic disease	Substantive functional limitations. One or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity (BMI>40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, ESRD undergoing regularly scheduled dialysis, premature infant PCA < 60 weeks, history (>3 months) of MI, CVA, TIA, or CAD/stents.
ASA IV	A patient with severe systemic disease that is a constant threat to life	Examples include (but not limited to): recent (<3 months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or ESRD not undergoing regularly scheduled dialysis
ASA V	A moribund patient who is not expected to survive without the operation	Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction
ASA VI	A declared brain-dead patient whose organs are being removed for donor purposes	

1. Adult spinal cord-Lower border of L1
2. Spinal cords in infants-Upper border of L3

- Sevoflurane
- Induction of choice in children
 - Fruity odour
 - Best for asthma/liver surgery
 - Compound A: Nephrotoxic

- Isoflurane
- s/e: Coronary steal
 - Best for Cardiac surgery
 - Liver transplant

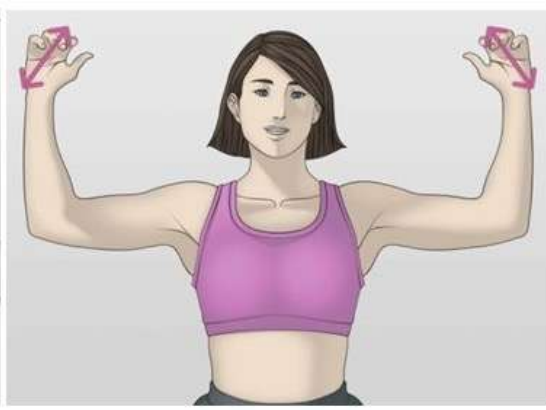
- Halothane
- A/E: AI hepatitis
 - potent bronchodilator

- Desflurane
- special vaporiser Tec 6
 - pungent smell hence never used for induction
 - Renal surgery/abuse

ORTHO

- Barlow: (BAD): Adduction - dislocation Ortolani: Abduction - relocates
- Ober test: Gluteal tract contracture (gluteus maximus + Tensor fascia lata)
- Valgus stress test: MCL Varus stress test: LCL
- Pivot shift test: Anterolateral knee Dial test: Posterolateral knee } IOC: MRI, Gold std: Arthroscopy
- O'Donoghue triad: MCL, ACL, MM
- PAD: ^{palmar interossei} adduction - cord test ^{unipennate} DAB: ^{dorsal interossei} abduction - egawa test (supplied by ulnar nerve) ^{bipennate}
- Lumbricals: lateral 2 by Median nerve; Medial 2 by ulnar nerve (flexion at MCP, extension at IPJ)
- SR PM: < supinator syndrome: Radial nerve
pronator syndrome: Median nerve
- Neck of fibula: CPN ~ no dorsiflexion - high steppage gait R: Toe raising splint (ankle foot orthosis)
↳ injured in lithotomy
- FLUTS Non-union: NOF, LCH, lower 1/3rd ulna, lower 1/3rd tibia, Talus, Scaphoid
R > 65Y: HR < 65Y: CR
- MISC Malunion: ITF, SCH, Colle's (hand-shaking cast), clavicle
R PFN
- Posteromedial displacement / extension / Dunlop smith traction / Baumann angle / 3pt bony Normal / K-wire: SCH
- Herbert: screws: scaphoid fracture (glass-holding cast)
- FOOSH in extension: Colle's # < dorsal displacement
dinner fork deformity Pronation, Palmar flexion, ulnar deviation
- GRIMUS Galeazzi: Superior radius #
Monteggia: superior ulna # (BADO classification)

- MC shoulder dislocation: *Anterior (subcoracoid)* Kocher manouever: *(TEAM) Traction, ER, Add², Medial rot²*
- Bankart: *Anteroinferior labrum* Hillsack: *Posterolateral humerus*
- FADIR: *Posterior dislocation of hip (and) TB hip*
- Hangman #: *C2-C3 subluxation*
- Babcock Triangle: *TB of hip* Fairbank triangle: *Coxa vera* Ward triangle: *Osteoporosis*
- ALP, Osteocalcin, Osteonectin: *Markers of bone formation*
- Painful arc: *60-120°*
- Kohler: *Navicular* Keinboch's *Lunate*
- SCIWORA *Spinal cord injury without obvious radiological findings (in children)*
- Head: Glenoid ratio: *4:1*
- Bony ankylosis: *TB spine* Fibrous ankylosis: *TB hip/knee*
- Mirel score: *Pathological fracture*
- Hook shaped MC: *Hemochromatosis*
- Jaipur foot: *Squatting, Barefoot*



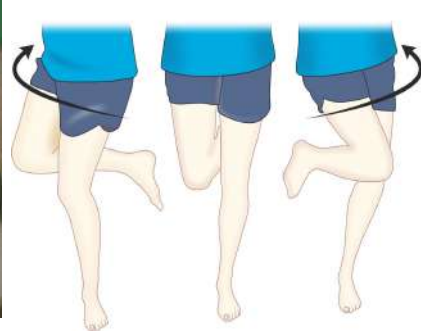
Roos Test C8-T1 (mc)



Lachman : 20-30%



Aply's grinding



Thesley Test



McMurray's Test

Thoracic outlet obs:
nerve > SCV > SCA

Gustilo-Anderson

Type	Characteristics
I	Puncture wound <1cm Minimal contamination Minimal soft tissue damage
II	Laceration >1cm but <10cm Moderate soft tissue damage Adequate bone coverage Minimal comminution
III A	Laceration > 10cm Extensive soft tissue damage Adequate bone coverage Segmental/severely comminuted fractures or heavily contaminated wounds
III B	As a Gustilo type IIIA injury, but with periosteal stripping and bone exposure
III C	Any open fracture with vascular injury requiring repair



Cavus Adduction Varus Equinus

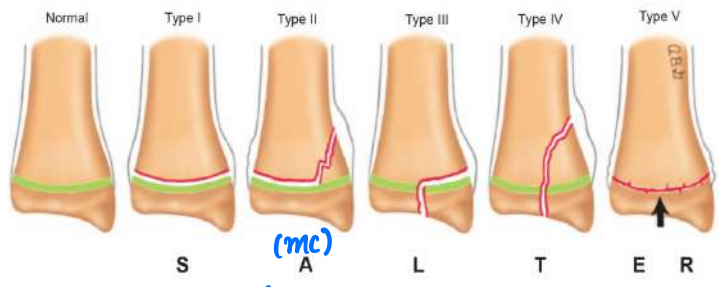
CTEV

Talonavicular
Calcaneo cuboid Talo-calcaneal Tibiotalar joint

Rx:
Dennis Brown splint
Kite's angle
Pirani score

Ant. Drawer Test : 90%

Salter-Harris



Normal Type I Type II Type III Type IV Type V
S (mc) L T E R
SCFE Tharten Holland (eg: SCH) Julliaux LCH Crush

DERMATOLOGY

HPV

HPV 6, 11: Condyloma acuminata/
genital warts

HPV 2, 5: Verruca vulgaris

HPV 1: Plantar wart

HPV 2: Digitate wart

HPV 3, 10: Verruca plana

- Orthokeratosis: *Hyperkeratosis minus Parakeratosis* ~ seen in lichen planus
- Epidermal turnover time: *56 days*. Psoriasis: *6d* Epidermal-melanin unit: *1:36*
- LCH markers: *present in stratum spinosum*. *S-100, CD-207, CD 1a*
- Merkel cell / Ca colon: *in stratum basale* *CK 7 ⊖, CK 20 ⊕*
- Acitretin: *Rx pustular psoriasis* washout period: *3 years*
- Isotretinoin: *Nodulocystic acne* washout period: *(1 month-) 3 months* *slc*
 - chelitis*
 - hypertriglyceride levels*
 - hepatotoxic*
- UV-A -365nm : Barium silicate + NiO filter *Wood's lamp*
- Modified apocrine glands: *Moll's gland, Mammary gland, Ceruminous gland*
- Ca ATPase 2A2: *Darier's ds.* 2C1: *Hailey - Hailey disease*
- TME PSC

<i>T: Trichophyton</i>	<i>M: Microsporum</i>	<i>E: Epidermophyton</i>
<i>P: Pencil</i>	<i>S: spindle</i>	<i>C: Club/Cavalle</i>
- Para tertiary butyl phenol: *Bindi* PPD: *Hair dye*
- Sign of lesser Trelat: *Seborrheic keratitis*
- Darier sign : *Cutaneous Mastocytosis*: *C-kit/CD 117 (GIST)*
- Atopic dermatitis infants: *face, extensors* Cataract: *Anterior subcapsular ~ shield cataract*
- Footprint in snow: *lichen planus pilaris*
- Resistant acne: *rule out hyperandrogenism first*



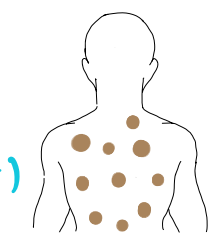
crop grain lesions
Barrier's



Hailey-Hailey ds.



sign of lesser Trelat



	INH	CHR	GENE
NF1	AD	17	Neurofibromin
NF2	AD	22	Merlin gene
TSC	AD	9, 16	Hamartin Tuberin → mTOR ⁺
VHL	AD	3	Pheochromocytoma Hemangioblastoma Clear cell RCC
SWS	Sporadic	9	GNAQ
ATM	AR	11	

B/L vestibular schwannoma
 multiple inherited ← schwannoma
 meningioma
 ependymoma
 angiomyolipoma
 lymphangioliomyomatosis in lungs
 sub-ependymal nodules

port wine stain
 tramtrack calcific²
 congenital glaucoma



Blaschko lines



- Incontinentia pigmenti
 - hypomelanosis

Langer's lines



- lines of skin tension
 - to make incisions for better wound healing



Scleredema diabeticorum

4. Match the wood lamp findings with the respective diseases.

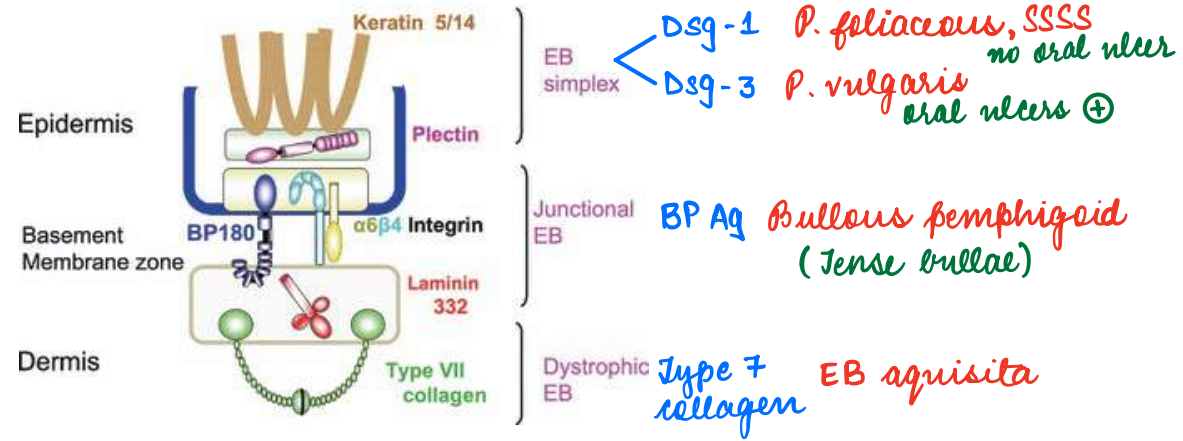
1. Erythrasma	a) pink fluorescence
2. Pityriasis versicolor	b) Milky white fluorescence
3. Tinea Capitis	c) Yellow fluorescence
4. Vitiligo	d) Blue fluorescence
	e) Coral red fluorescence

Rifampicin (Most effective)	Dapsone	Clofazimine <i>sl: Ichthyosis / pigmentation</i>
600mg OAMS	100mg OD	300mg OAMS+ 50mg OD

PBL: 6 months

MBL: 12 months

Three major categories of epidermolysis bullosa (EB)

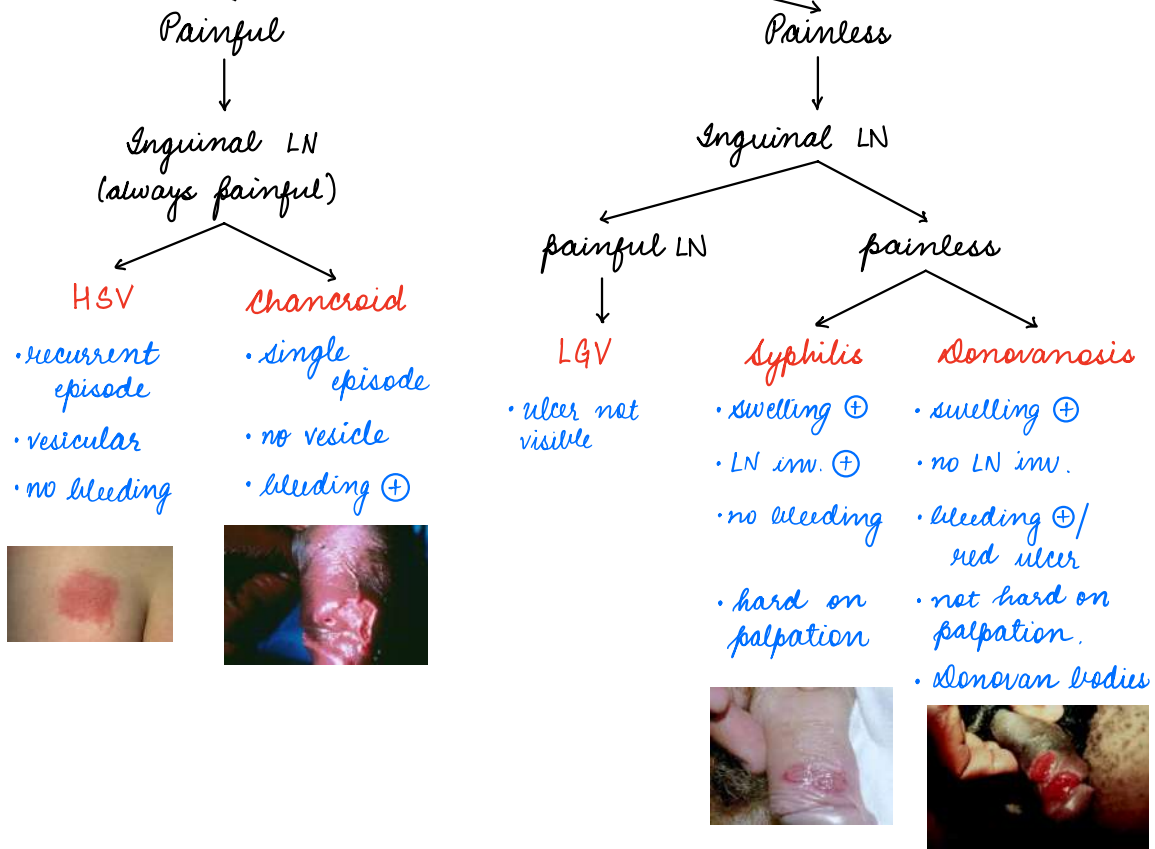


Urethral Discharge	Cervical Discharge	Painful Scrotal Swelling	Vaginal Discharge	Genital Ulcer-Non Herpetic		Genital Ulcer - Herpetic	Lower Abdominal Pain (LAP)	Inguinal Bubo (IB)
<ul style="list-style-type: none"> Urethral Discharge (Pus or muco-purulent) Pain or burning while passing urine Increased frequency of urination Systemic symptoms like malaise, fever 	<ul style="list-style-type: none"> Nature and type of discharge (quantity, color and odor) Burning while passing urine, increased frequency Genital complaints by sexual partners Low backache (Take menstrual history to rule out pregnancy) 	<ul style="list-style-type: none"> Swelling and pain in the scrotal region Pain or burning while passing urine Systemic symptoms like malaise, fever History of urethral discharge 	<ul style="list-style-type: none"> Nature and type of discharge (quantity, color and odor) Burning while passing urine, increased frequency Genital complaints by sexual partners Low backache (Take menstrual history to rule out pregnancy) 	<ul style="list-style-type: none"> Genital ulcer, single or multiple, painful or painless Burning sensation in the genital area Enlarged lymph nodes 	<ul style="list-style-type: none"> Genital ulcer or vesicles, single or multiple, painful, recurrent Burning sensation in the genital area 	<ul style="list-style-type: none"> Lower Abdominal Pain Fever Vaginal Discharge Menstrual irregularities like heavy, irregular vaginal bleeding Dysmenorrhoea, dyspareunia, dysuria, tenesmus Lower backache Cervical motion tenderness 	<ul style="list-style-type: none"> Swelling in inguinal region which may be painful Preceding history of genital ulcer or discharge Systemic symptoms like malaise, fever etc 	
Tab. Azithromycin 1 gm OD Stat + Tab. Cefixime 400 mg OD Stat	Tab. Azithromycin 1 gm OD Stat + Tab. Cefixime 400 mg OD Stat	Tab. Azithromycin 1 gm OD Stat + Tab. Cefixime 400 mg OD Stat	Tab. Secnidazole 2 g OD Stat + Cap. Fluconazole 150 mg OD Stat	Inj. Benzathine penicillin (2.4 MU) - 1 vial Tab. Azithromycin (1 gm) - Single dose	If allergic to Inj. Penicillin: Doxycycline 100 MG (Bid for 15 days) Azithromycin 1GM (Single dose)	Tab. Acyclovir 400 mg TDS for 7 days	Tab. Cefixime 400 mg OD stat + Tab. Metronidazole 400 mg BD X 14 days + Doxycycline 100 mg BD X 14 days	Tab. Azithromycin 1 gm OD Stat + Tab. Doxycycline 100 mg BD for 21 days
KIT 1/Grey	KIT 1/Grey	KIT 1/Grey	KIT 2/Green	KIT 3/White	KIT 4/Blue	KIT 5/Red	KIT 6/Yellow	KIT 7/Black
Treat all recent partners	Treat partners when symptomatic	Treat all recent partners	Treat partners when symptomatic	Treat all sexual partners for past 3 months		No partner treatment	Treat male partners with Kit 1	Treat all sexual partners for past 3 weeks

Urethral discharge (STD)

gonococcal urethritis : IP < 1 week
Non-gonococcal urethritis : IP ≥ 2 weeks

STD ulcers



Klebsiella granulomatis
Donovan body (safety
pin like bodies inside the
monocyte)



CHHOTI COPY REVISION: PART 2

ENT, MICRO, FMT, PSYCHI

Dr. Shreya

MICROBIOLOGY

- Gram stain: *Crystal violet* - *Iodine* - *Acetone* - *Saffranin* (mordant) (decoloriser) Peptidoglycan: gram +ve
- Acid fast: *Carbol fuchsin* - heat - H_2SO_4 - *Methylene blue* (1:1) - *Nocardia*, *Legionella*
- Hyaluronic acid capsule: *S. pyogenes* Polypeptide capsule: *B. anthrax*
- No capsule: *Mycoplasma* ~ *Diene stain* Medusa head inverted fir tree PLET medium
- Lipotechoic acid *Gram positive*
- Endotoxin *Gram negative + Histeria* Assay: *LAL assay* (PALCAM agar, Tumbling mobility)
- Diaminopimetic acid *Bacteria*

Polysaccharide capsule with vaccine: **SHIN**

- *Streptococcus*
- *H. influenza*
- *N. meningitidis*

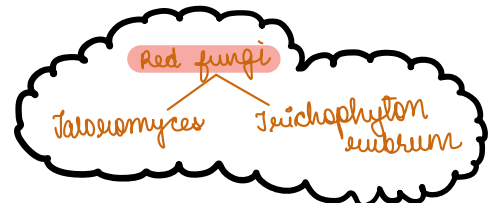
- cAMP: (CALP) *Cholera (zona occludens)* - *GM1*, *Anthrax*, *LT-ETEC*, *Pertussis* (inspiratory whoop)
- Catalase + (SPACE) *Serratia*, *S. aureus*, *Pseudomonas*, *Aspergillus*, *Candida*, *Enterobacter*
CGD ~ Tests: DHR > NBT
- All *Clostridium* motile and noncapsulated except: *C. perfringens* ~ α -toxin

- Schiff: *Vivax* James: *Ovale* Maurier: *Faki* Ziemann: *Malariae*
- ICAM-1: *Rhinovirus* ACE2: *Covid* Nicotinic AchR: *Rabies*

CD21: *EBV* - *OHL* / *NP CA* / *CA stomach* / *HL* / *NHL*

Integrin: *CMV*: urinary PCR > Ag: PP65 Ag, Rx: *Ganciclovir*, pizza pie app. in fundus finding

Breteau index: *Aedes* Cheopsis index: *Rat flea* Chandler index: *Hookworm*
Dengue, Chikungunya



- α -toxin
 - has capsule
 - is immobile
 - most lethal
 - Nagler react²²
 - Ax: somatic motility / proprioception
 - TEQ: RK at Ma 1y 30
- coag⁺ | MAP
+ | ppt.
fibrinogen

Gram \oplus (purple/blue)

Bacilli

Cocci

Branching filaments

Aerobic

Anaerobic

Aerobic

Anaerobic

Bacillus
Listeria
C. diphtheriae: EF-2-i
M. TB

Clostridium

Nocardia
- AF \oplus
- mimics TB
- h/o renal transplant

Actinomyces
- AF \ominus
- osteomyelitis of mandible

Catalase

(Pairs or chains)

Streptococcus

(Clusters)

Staphylococcus

Hemolysis

Coagulase

α

(Partial hemolysis, green)

β

(Complete hemolysis, clear)

γ

(No hemolysis, grows in bile)

CONS

S. aureus

IE: acute, HA, IV abuse
mitral (tricuspid)

Optochin sensitivity and bile solubility

Bacitracin sensitivity and PYR status

Growth in 6.5% NaCl and PYR Status

Novobiocin sensitivity

mcc of neonatal sepsis
GBS
S. agalactiae
cAMP \oplus

GAS
S. pyogenes

S. saprophyticus
2nd mcc UTI in sexually active
Bile esculide agar
IE: cystoscopy

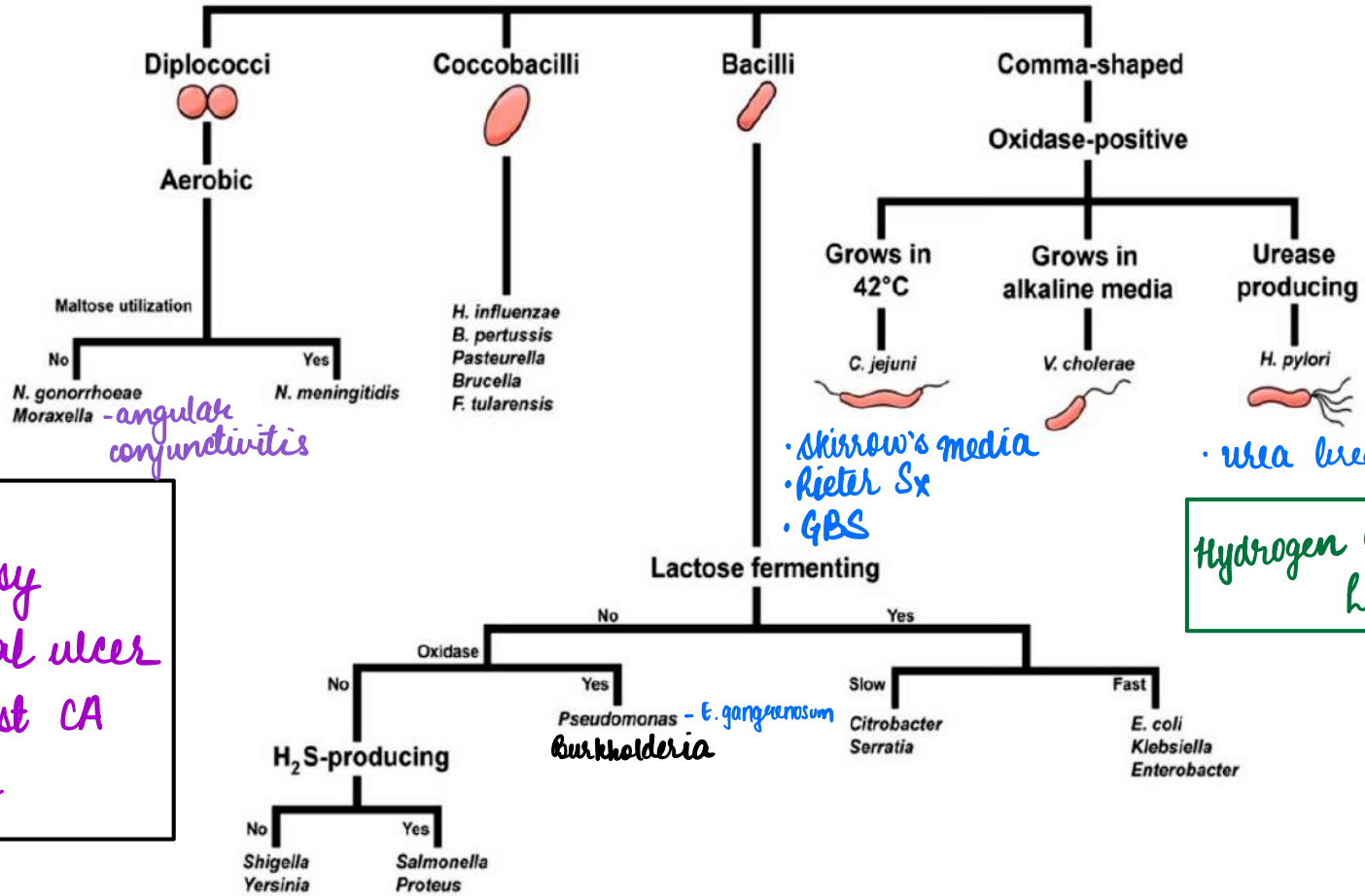
S. epidermidis
IE: prosthetic valve (<1 year)

S. viridans
IE: subacute CA.

S. pneumoniae
diplococci, Carbohydrate Quellung reaction

S. bovis
IE: CA colon

Gram-Negative Bacteria



Satellitism

- BT in leprosy
- Fungal corneal ulcer
- PUS in breast CA
- H. influenza

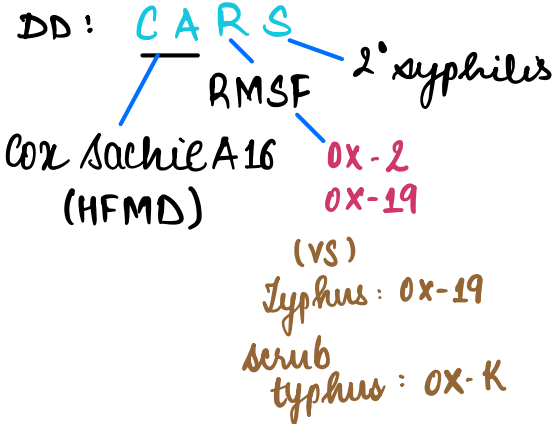
Hydrogen breath test:
Lactose Intolerance

- Skirrow's media
- Hieter Sx
- GBS

- urea breath test



2° syphilis
 • involves skin of palms and soles



Anopheles
 clear water
 parallel larva
 single eggs
Malaria

HRP 2 Ag:
 sp. for
P. falciparum

Aedes
 artificial water
 100m: shortest distance
 Tiger mosquito
 siphon tube maybe (+)
 tongue
Chikungunya
 YF
 Zika
 Rift Valley

Culex
 dirty water
 10km: longest distance
 hunchback at rest
 siphon tube present
W. Bancrofti
 JE
 West Nile

Mansonia
 with Pistia plant
Bengia malayi

Sandfly
 Kala-azar
 RK 39 Ag Test
 Kinetoplast
 Amastigote of *L. donovani*
 Rx: LAB

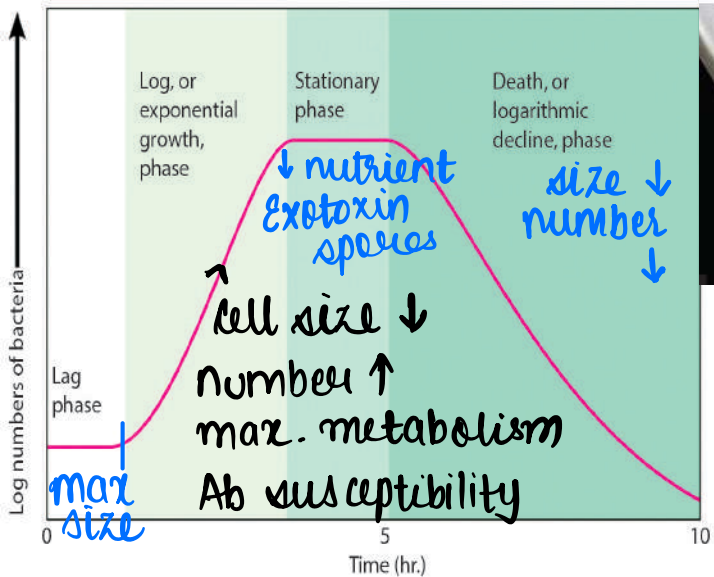
Haagic conjunctivitis

Borrelia < burgdorferi: Lyme ds.
 recurrentis: RF

Coxsackie A24,
 Enterovirus 70

sandfly
 Bartonella bacilliformis **Oroya fever**

henselae **cat scratch disease** quintana **Junch fever**

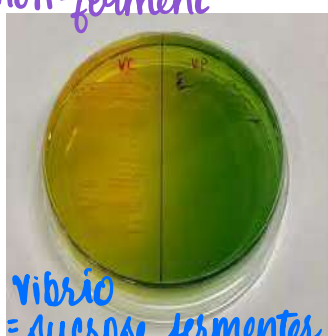
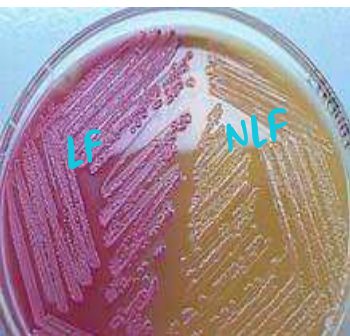


LSS LJ

Inspissation

K Jelurite
- C. diphtherie

Sorbitol non-fermenter in O157:H7

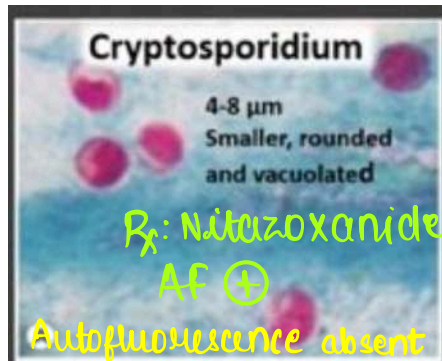


MacConkey (LF)
Indicator:
Neutral Red

CLED (LF)
Biomethynol blue

TCBS (SF)
Biomethynol blue

Mannitol salt (MF)
Phenol red



- Casoni / Arc5 electrophoresis- *Hydatid cyst*

- Montenegro- *Kala-azar*

- Bachmann *Trichinella*

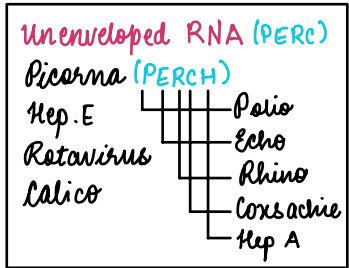
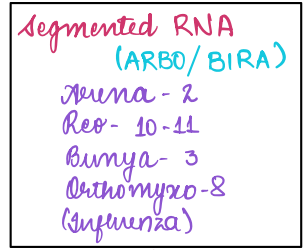
- Fairly *Schistosoma*

- Frenkel *Toxoplasma*
 - cat feces: oocyst

- Mazzotti- *Onchocerca*
 - cat meat: bradyzoite

- Fullborne *Strongyloides*

- NEHA SUIT CHEST



- HAY BAP *Viral Inclusion Bodies*

- Auramine-Rhodamine: *TB*

- Acridine orange: *Malaria*

- Calcofluor white: *Fungi ~ Chitin*

- FITC: *Flow cytometry*

Non-Bile Stained (NEHA)

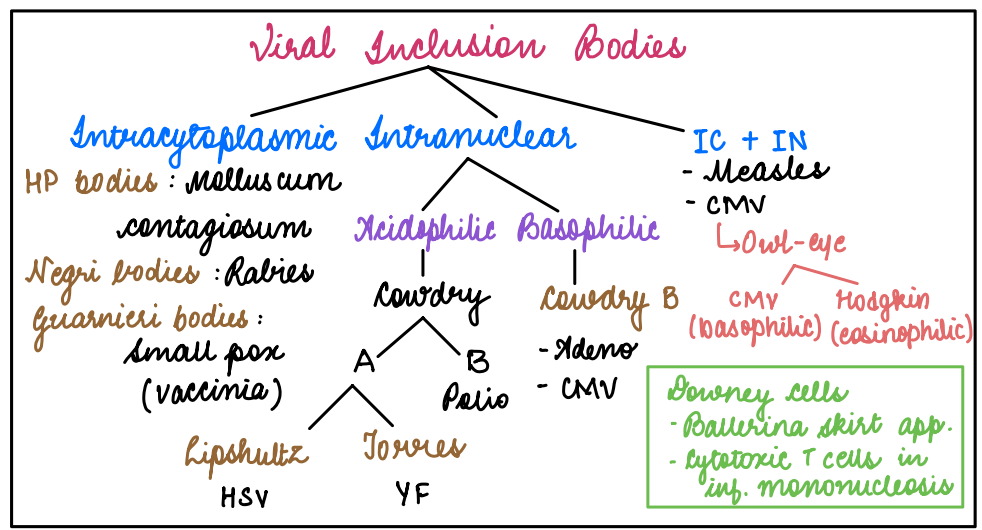
- Necator
- E. vermicularis*
- H. nana*
- Ancylostoma*

Don't float [SUIT]

- Strongyloides*
- Unfertilized egg of *Ascaris*
- Intestinal tapeworm
- Tinea*

Autoinfection [CHEST]

- Cryptosporidium*
- H. nana*
- Enterobius*
- Strongyloides*
- Tinea*



Sterilization ~ sporicidal

HOT AIR OVEN
160 X 2HR

- glassware
- paraffin wax

AUTOCLAVE
121 x 15min x 15psi

- Sx instruments
 except sharps
- OT linens
- sutures
 except catgut
- culture media
 except LT/LSS
- sputum

RADIATION:
Gamma rays

- catgut
- chromic catgut
- disposable

Aldehydes:
Glutaraldehyde 2%

- scopes except → { Arthroscope
 Urethroscope
 [STERRAD]

H2O2=
Plasma

ETO
CPM

Blood spills

Hypochlorite 5%

- surface disinfectant
- does not kill spores

CONTROL:

- B. subtilis: Hot air oven
- B. stearothermophilus: Autoclave, plasma sterilization
- B. pumilis: Infra-red
- B. globigi: ETO

MILK PASTEURISATION:

- 63 X 30min Holder/VAT
- 72 X 15s Flash/HTST
- 125 X 3s ultra high temperature

Coliform, standard plate, phosphatase test

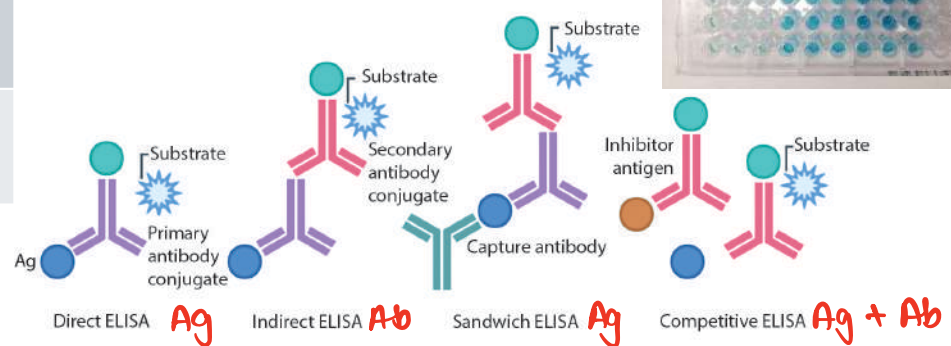
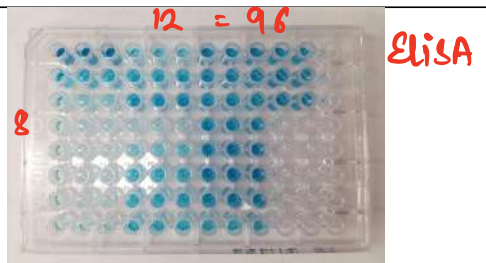
Precipitation/Flocculation

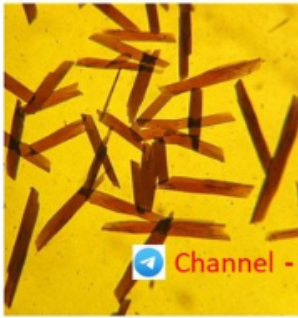
- Ring ppt Ascoli: **Anthrax** Lancefield: ^{Carb Ag} **S. pyogenes** Elek: **C. diphtherie** Kahn/ VDRL: **Syphilis**
- Microscopic agglutination / Emjnh/ Dinger ring: **Leptospirosis** _{not urine} R_x: **Macrolides**
- Cold: **Mycoplasma**
- Standard/ Rose Bengal test: **Brucellosis**
- Paul-Bunnell / Monospot: **EBV**
- Weil-Felix: **Proteus** \bar{c} **Rickettsia**
- Widal: **Typhoid**
- Sabin Feldman **Toxoplasma** } **Complement fixation**
- Wasserman **Syphilis** }

} **Tube Agglutination**

	Single dimension	Double dimension
Single diffusion	Oudin	Mancini
Double diffusion	Oakley-Fulthorpe	Ouchterlony

Enzyme	Substrate	Chromogen
Horseradish Peroxidase	Hydrogen peroxide	Tetramethyl benzidine (TMB)





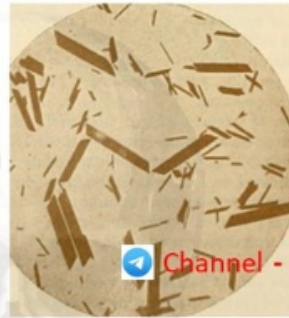
Florence test

Choline iodide
(Dark brown
rhombic crystals)



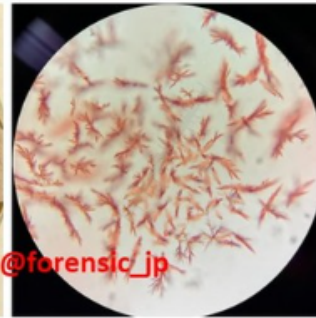
Barberio's test

Spermine picrate
(yellow needle
shaped crystals)



Haemin crystal test
(Teicheman's test)

Yellowish red to
brownish black
rhombic crystals



Takayama's
Haemochromogen
crystal test

Pink feathery crystals

5/9

FMT

- OPD/ IPD records maintained for: **3 years** MLC records: **10 years**
- Time to provide records: **3 days**
- Primary blast: **(TLC) TM, lungs, colon**
- Abrasion, Contusion, Laceration: **2° blast ~ Marshall's Triad**
- Superfetation VS Superfecundation: **diff. cycles** - same cycle, 2 ova, 2 sperms
- Barberio test: **Spermine picrate crystals** - yellow needle
- Florence test: **Choline per iodide crystals** - rhomboid
- Hemin (Teichmann), Hemochromogen (Takayama) - **pink feathery** **for blood**
↳ rhomboid
- Palmaris longus/ Ulnar N, artery / Palmar cut nerve (ulnar, median) / Palmar aponeurosis **Hesitation cuts/ suicide attempts**
- Primary marking/ Secondary marking: **2° > 1°** 2°: **gun marking, microscopic, wear and tear**
- Paltauf hemorrhage: **Antemortem** ↳ lung base h'age ✓ Simon bleed: **epidural bleed in hanging** Tardeu spots **Asphyxial deaths**
- Adduction hyoid#: **Strangulation**
- Pelvis : All large and wide in females except: **(OSA) Obturator foramen, S-I joint surface, Acetabular notch**
- Lochia **Rubra 4-5 days, Serosa 10 days, Alba 12 days**
- Virchow- **head → trunk → abd** Letulle- **en masse** Ghon- **en bloc** Rokitansky- **in situ**
- Pripaism **Spanish fly, Cantharidin. Also by Terazodone**

Phossy jaw *Phosphorus, Actinomyces, Bisphosphonates*

PCM *N-acetyl cysteine* B blocker *glucagon*

Methanol/ Ethylene glycol *Fomepizole*

BZD *Flumazenil*

Meth Hb *Methylene blue*

MIOSIS *Pinpoint pupil ~ OP poisoning, BZD.*

Rx: *Atropine + Pralidoxime* *barbiturates, opioids, carbolic acid*

MYDRIASIS *Datura/Thorn apple poisoning.*

Rx: *Physostigmine* *cocaine, LSD, Ketamine, MDMA, TCA*

Wishnewsky ulcer: *hypothermia* Curling ulcer: *burns* Cushing ulcer: *head injury* Cameron *hiatal hernia*

Fresh water vs salt water: *Fresh water: hemodilution ($\downarrow Na^+$, $\downarrow Cl^-$, $\uparrow K^+$ d/t RBC lysis)*

Quelet rule: *Twins have different fingerprints*

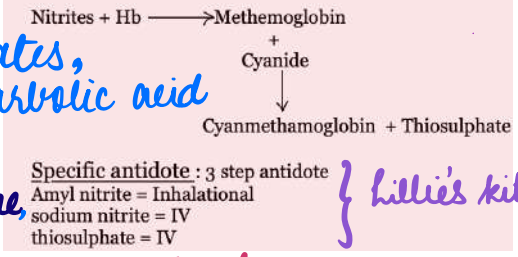
Quetelet rule: *BMI* Broca index: *wt(kg) = Ht(cm) - 100*

Casper dictum: *1:2:8* *a body decomposes in air twice as rapidly as in water and eight times as rapidly as in earth*

Monday morning 1) fever + chills: *Zn poison* 2) Chest tightness *Byssanosis* 3) sickness (headache): *Nitrate*

CHELATORS:
BAL/ Dimercaprol- <i>HAL</i>
DMSA/Succimer- <i>Hg/As/Lead</i>
D-penicillamine- <i>Cu/Hg/Pb</i>
EDTA- <i>Pb</i>
Desferioxamine- <i>Fe</i>
Prussian blue- <i>Thallium</i>

Hemodialysis:
Barbiturate
Lithium
Alcohol
Salicylates
Theophylline





Digitalis



*Pink Oleander
(Nerium)*



*Yellow Oleander
(Cerebra)*



Nicotine



Aconite

————— *Cardiotonic* —————



Cannabis



*Erythroxylum
cocca*



Whatura
Rx: Physostigmine



Aegemone mexicana

*Epidemic
dropsy*



arch



loop (mc)



whorls

Change	Disease
Complete loss	Burns, Celiac disease
Permanent impairment	RT, Electrical injury, Leprosy,
Change in distance	Acromegaly, Rickets
Ridge alteration	Scleroderma, Eczema, Acanthosis nigricans

*Metaphyseal corner #/
Bucket handle #*

*↓
NAI*

dix-penny bruises

60g, 30g 1:35, 1:70

- Foder / Ploquet/ Hydrostatic test: lung floats in live born (sp. gravity < 1)
- Wredin: gel membrane / air in ear in still born
- Breslau second life test Air bubbles in stomach in live born
- Permanent teeth 6-11yrs: permanent teeth : $(age - 5) \times 4$
- Japanese detergent suicide / Sewer gas / Bluish green lividity: Hydrogen sulfide (rotten egg)
- Preservative for blood: NaF + K⁺ oxalate Viscera: Rectified spirit Urine: Toluene blue > Thymol / NaF
- Bharatiya Nyaya Sanhita - IPC - Citation: Act No. 45 of 2023
- Bharatiya Nagarik Suraksha Sanhita - CrPC: Citation: Act No 46 of 2023
- Bharatiya. Sakshya Adhinyam - IEA - Bill No. 123 of 2023

82- < 7 years : no liability

83- 7-12 years : maturity

84- McNaughten's rule

85- Involuntary Intoxication

86- Voluntary Intoxication

BNS

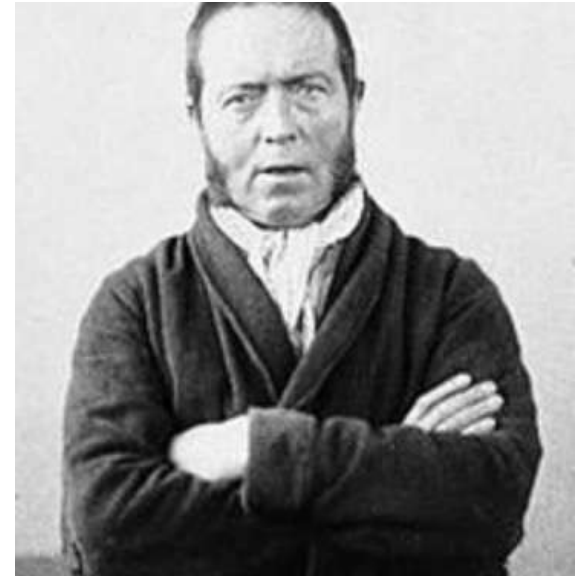
20

21

22

23

24



BNS

87- > 18 years can consent

25

~~88~~

~~26~~

89- < 12 years cannot consent

27

90- Invalid consent

28

~~91~~

~~29~~

92- Implied consent

30

191- Perjury

BNS
227

193- Punishment
for perjury

229

228A- Punishment for
revealing identity of
rape victim

72



not intended to kill but killed

299- Culpable homicide

BNS

100

300- Murder

101

302- Punishment for murder

103

304- Punishment for culpable homicide

105



304A- Punishment for death
in case of medical negligence

BNS

106

(max 2 yrs)



304B- Dowry Death

80

Elements of Negligence

Duty

Breach of Duty

Act Must Be Done

Damages

312: Criminal abortion \bar{e}
consent of female

88

313: Criminal abortion \bar{e} out
consent of female

89

314: Criminal abortion
+ death of mother

90

316 → child she

Wny to kill
mother.

319- Hurt

BNS

114

320- Grievous Hurt

116

375- Rape (definition) 63

376 - Rape (punishment) 64

- i. Emasculation.
- ii. Permanent privation of the sight of either eye.
- iii. Permanent privation of the sight of either ear.
- iv. Privation of any member or joint.
- v. Destruction or permanent impairing of any member or joint
- vi. Permanent disfiguration of the head or face
- vii. Fracture or dislocation of a bone or tooth
- viii. Any hurt which endangers life or which causes the sufferer to be during the space of **twenty days** in severe bodily pain or unable to follow his ordinary pursuits

69

3x3

CrPC

✓ 174- Police inquest

BNSS

194

Police inquest: Minimum rank

Sub-inspector-Sexual offences

Head constable-Others

Judicial magistrate-Custodial death

✓ 176- Magistrate inquest 196

IEA

	BSA	
32- <u>dying declaration</u>	26	- 26 Jan
45- Expert witness	39	
154- Hostile witness	157	!

ENT

Lat. rhinotomy / Med. maxillectomy / Inverted papilloma / Total maxillectomy / Weber Ferguson: CA Maxillary sinus / Gluck-Sorenson: Total laryngectomy

- Murre incision: Inverted papilloma
- Trotter triad: ~ NP CA ~ Trigeminal neuralgia, palatal palsy, CHL (d/t serous OM / glue ear)
- Gradenigo syndrome: Apical petrositis - retroorbital pain, diplopia, chronic ear discharge
- Grisel: Atlanto-axial dislocation
- Griesenger: Lateral sinus thrombosis
- Guerin sign: Greater palatine artery hematoma
- SMT:

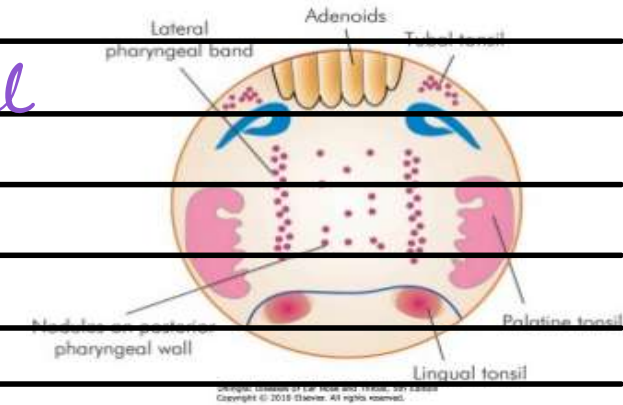
- Weber test:
- ECOG SP/AP >30%
- EECOLIMA
1 2 3 4 5 6 7



• LVESPA structures not visible on Indirect Laryngoscopy
 laryngeal part of epiglottis, vestibule, epiglottis, subglottic area, post. cricoid area, apex of piriform fossa

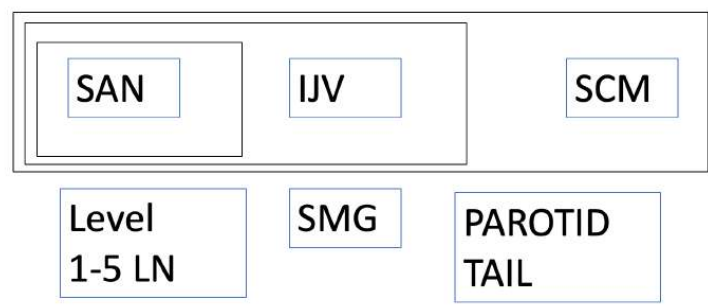
- All muscles supplied by RLN except cricothyroid (ext. branch of SLN)
- Safety muscle larynx
- Tracheostomy:

- UMN facial N: *c/l sparing of frontalis, emotional movements, tone of fascial muscles*
- Crocodile tears: *gustatory lacrimation ~ GSPN*
- Frey syndrome: *gustatory sweating ~ ATN*
- Promontory, high frequency sounds: *Basal turn low freq: apical*
- Stria vascularis (Scala media): *2³/₄*
- Lushka tonsil- *Adenoid* } *GT LA*
- Gerlach tonsil- *Tubal* }



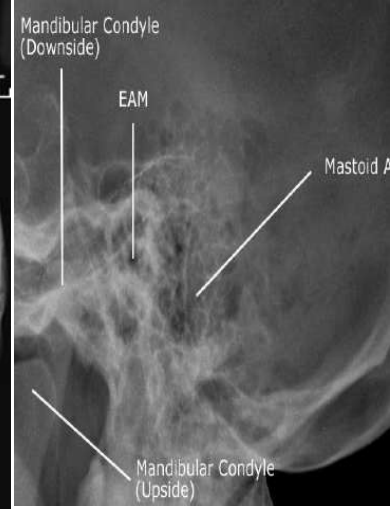
Thyroplasty

- 1- *Medialisation*
- 2- *Lateralisation - RLN palsy*
- 3- *Shortening/ relaxation - pulberphonia*
- 4- *Lengthening/ tightening - androphonia*



Modified RND:

- Type 1: *SAN preserved*
- Type 2: *SAN + IJV preserved*
- Type 3: *Functional RND SAN + IJV + SCM preserved*



Pierce's view

Caldwell view

Towne's view

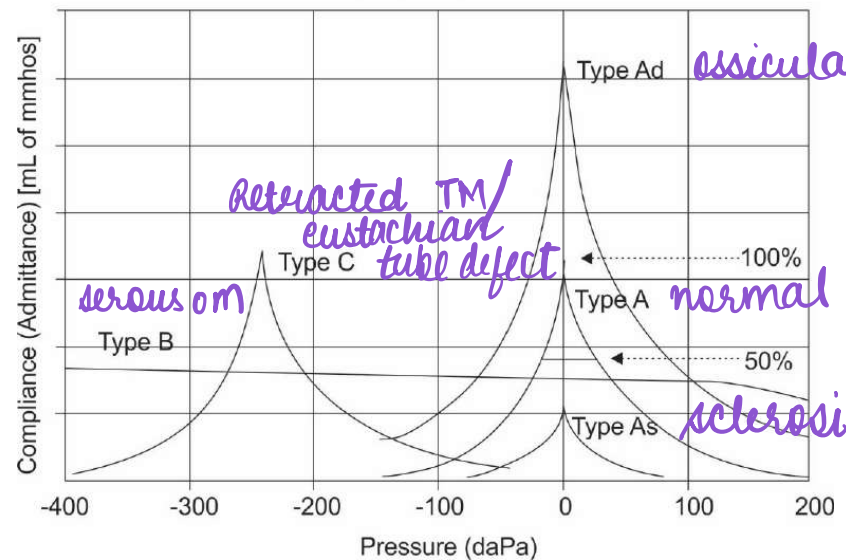
Schuller's/Law's view

Stenner's view

JNA

Stage	Description
IA	Limited to nose or nasopharynx
IB	Same as IA with extension into >1 paranasal sinus
IIA	Minimal extension through the sphenopalatine foramen into & including a minimal part of the medial part of the pterygopalatine fossa SPF
IIB	Full occupation of the pterygopalatine Fossa, displacing the poerior wall of the maxilla forward: lateral or anterior displacement of the branches of the maxillary artery: superior extension may occur, eroding orbital bones PPF
IIC	Extension through the pterygomaxillary fissure into the cheek & infratemporal fossa or the pterygoid plates ITF
IIA	Erosion of the Skull base with Minimal intracranial extension
IIB	Erosion of the Skull abase with extensive intracranial extension with or without cavernous sinus involvement

Tympanogram



	NORMAL	COCHLEAR LESION	RETROCOCHLEAR LESION
Pure tone audiogram	Normal	Sensorineural hearing loss	Sensorineural hearing loss
Speech discrimination score	90-100%	Below 90%	Very poor
Roll over phenomenon	Absent	Absent	Present
Recruitment	Absent	Present	Absent
SISI score	0-15%	Over 70%	0-20%
Threshold tone decay test	0-15% dB	Less than 25dB	Above 25dB
Stapedial reflex	Present	Present	Absent
Stapedial reflex decay	Normal	Normal	Abnormal
BERA	Normal interval between wave I & V	Normal interval between wave I & V	Wave V delayed or absent

Grade of impairment	dBHL corresponding	Description	Performance
0	≤25	No impairment	No (or very slight) hearing problem, able to hear whisper at 1 m
1	26–40	Slight impairment	Able to hear and repeat words spoken in normal voice at 1 m
2	41–60	Moderate impairment	Able to hear and repeat words using raised voice at 1 m
3	61–80	Severe impairment	Able to hear some words when shouted into the better ear
4	≥81	Profound impairment including deafness	Unable to hear and understand even shouted voice

Psychiatry

Brief psychotic disorder < 1 month } functional decline not mandatory

Schizophreniform < 6 months

Schizophrenia > 6 months \bar{c} functional decline

Schizoaffective schizophrenia isolated > 14 days

Delusional disorder > 1 month

Depression 2 weeks

Persistent depressive disorder/ Cyclothymia 2 years

Bipolar disorder / Mania 1 week

Hypomania 4 days

OCD 2 weeks

Panic disorder 1 month

GAD 6 months

Phobia 6 months

Acute stress reaction < 1 month

PTSD > 1 month

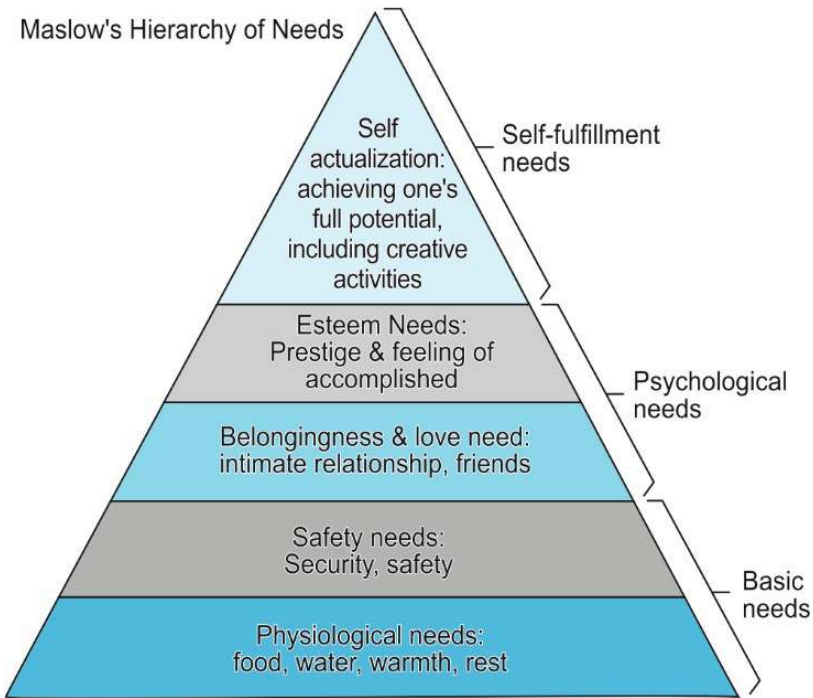
Adjustment disorder < 6 months

ADHD $6 \times 2 = 12$ > 6 months, 2 settings, age < 12 years

- Thought content: *Delusion*
- Derailment / Loosening of association/Tangentiality *Forum*
- Flight of ideas/ Pressure of speech/ Thought retardation/ Circumstantiality/ Perseveration *Stream*
- Possession: *Insertion, Withdrawal, Broadcast, Obsession, Impulse, Phobia*
- Repression VS suppression \rightarrow *voluntary (mature)*
(involuntary, neurotic)
- Projection VS displacement \rightarrow *neurotic*
 \rightarrow *narcissistic*
- DOC for alcohol withdrawal: *BZD + Thiamine* Anti-craving: *Naltrexone > Acamprosate*
- *AST > ALT*

- HEROIN Toxicity DOC: *Naloxone*
- Withdrawal: *Methadone*
- Squeeze technique: *Ejaculation*
- Precontemplation \rightarrow Contemplation \rightarrow Preparation \rightarrow Action \rightarrow Maintenance \rightarrow Relapse
- *MECP2 gene for Rett syndrome*
- TRS, Max metabolic s/e, Sialorrhea, Seizure, Myocarditis, Agranulocytosis: *Clozapine*
- QT prolongation: *Ziprasidone, Thioridazine, Haloperidol, Quetiapine*
- SIADH, vivid dreams, dry mouth, sweating *s/e of SSRI*

Maslow's Hierarchy of Needs



GOOD PROGNOSTIC FACTORS	BAD PROGNOSTIC FACTORS
Acute onset or abrupt onset	Insidious onset
Advanced age at onset (>35 yrs)	Early onset (<20 yrs)
Catatonic, paranoid subtype	Simple, disorganised, hebephrenic
Female sex	Male sex
Prominent positive symptoms	Prominent negative symptoms
Presence of affective symptoms	Absence of affective symptoms
Family history of mood disorders	Family history of schizophrenia

CHHOTI COPY REVISION: PART 3

PSM, OBG, ENT, PSYCHI

- Dr. Uma Marda

PSM



Best test to confirm fecal contamination- *E. coli* Recent contamination- *fecal strep* Remote contamination- *C. perfringens*
WHO STEPS: *Verbal / Physical / Biochemical (x therapeutic)*

Community participation/ Equitable Distribution/ Inter Sectoral coordination/ Appropriate technology *Components of*

Essential health care Available/ Accessible/ Affordable/ Acceptable

Bagassosis *not* a notifiable disease under Factory act

Sickness benefit- *70% - 91d*

Extended sickness benefit- *80% - 2yr (34 diseases)*

Enhanced sickness benefit- *vase/ tuberculosis 100%*

Maternity benefit- *6M 100%* *7d 14d* Funeral benefit- *15000 ₹*

Cash incentive of Rs 5000 in 3 installments on first child → *Vandana (MvY)*

Leishmaniasis/ *montenigro* *Q*raya fever/ *Q*riental sore/ Chandipura encephalitis *sandfly*

Typhoid/ Cholera/ dT/ TT → *Outbreak - workers (Gr)* *Arbovirus*

Burden of disease: *Hep B* *Disaster* *Proportional mortality rate (PMR), (DALY)*

Virulence/ killing power of disease: *case fatality rate (CFR)*

Communicability: *2^o attack rate*

Incidence-prevalence bias: *Neyman bias*

Test of Milk

Before pasteurization: Methylene blue test

After pasteurization: Phosphatase test / Standard plate count/ Coliform test

Energy, fat and protein: Buffalo > goat > cow > human

Lactose: Human > Buffalo > goat > cow

Most sensitive indicator of iodine deficiency: *Goitre prevalence / prev. of neonatal hypothyroidism >5%*

For surveillance: *urine I concⁿ*

HIV prophylaxis: CD4 < 350: *TMP-SMX-PCP* CD4 < 100: *Fluconazole cryptococcal* CD4 < 50: *Azithral - MAC CMV retinitis - Gancyclovir (Rx)*

ANMOL
ANM

Components of
PHC

Bias

- Hawthorne - attention bias*
- Berksonian - Hospital*
- Pygmalion - Belief of researcher*

Best to eliminate known confounders: **Matching** Overall best for confounders: **Stratified randomization**

Bias: Blinding (mc=double)

CLINICAL TRIALS **SWIM** pho-dosing (not compulsory)

Diagnostic power of a screening test: **PPV**

Meta-analysis: Identification-selection-abstraction-analysis \times randomization

PLOT: Forrest

Cluster sampling: **30x7-12-23mon**

HDI: Knowledge, LE₀, income

PQLI: LE₁, literacy, IMR

GHI: US%, US underwt, under nourished

Demographic determinants: Birth, death, marriage, migration, social mobility

ANGLES OF NEEDLES: im/ Suture: 90° Sc, Verees needle: 45° Id: 10-15°

epi-tomy = 60° (ML)

OPEN VIAL POLICY: 28days Not applicable: **MBJ / COVID / YF**

8 + 4 = 13

→ Ideal

WHO GOI (min)

GOI/WHO

Red: ↑ risk

green: (R)

yellow: PID / GDM / thyroid

Blue: PIH

distilled water

NS

PBS

NS

Reconstituted vaccines

PM-SMA Categories:

9th ANC

TARGETS:

NTEP: 90% reduction: mortality 80% reduction: Incidence

NACO: 90-90-90-90 dx, Rx, virtually suppressed, quality of life

WHO CA CERVIX 2030-90:70:90

<15yr
90% vaccinated

70%
35-45%
Pap screening

90%
CA cx
treated

1°

2°

2°

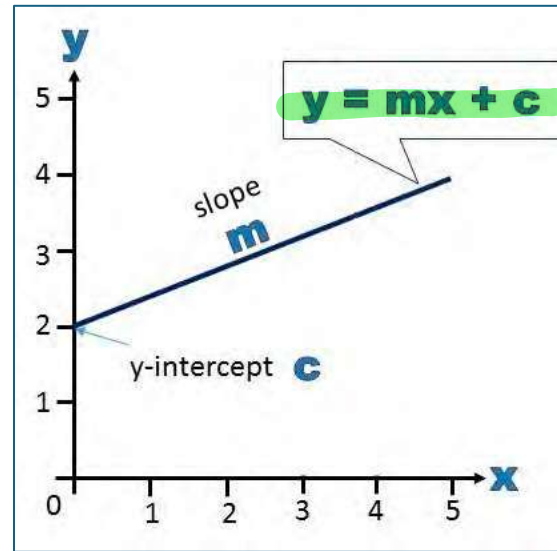
Goal: achieve SDR
Target: Discret
Obj: end point (IMR < 20)

Central Pollution Control Board's Air Quality Standards	
AQI	Category
0-50	Good
51-100	Satisfactory
101-200	Moderate
201-300	Poor
301-400	Very Poor
401-500	Severe

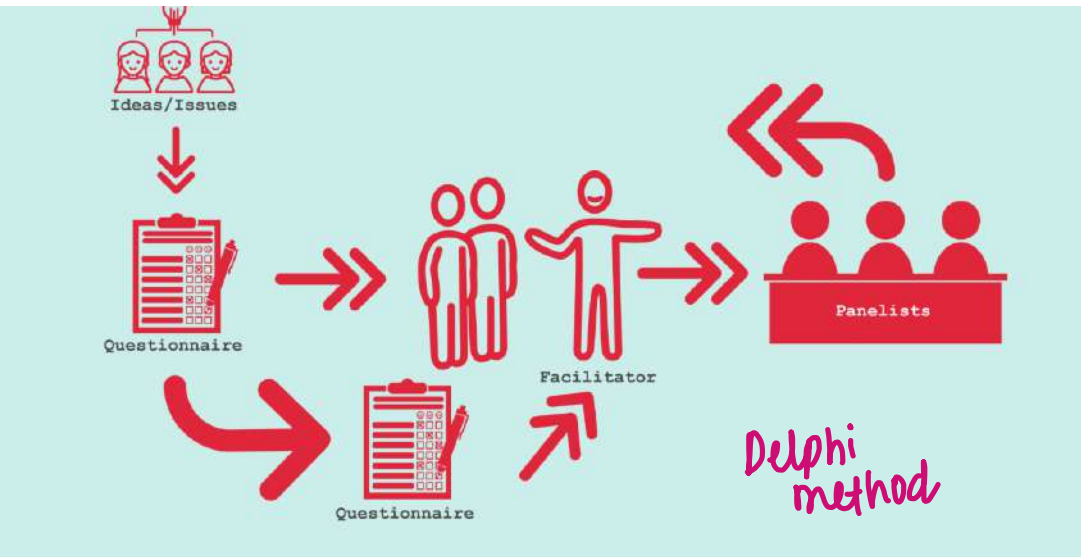
AQI

1. PM 2.5 - *most imp*
2. PM 10
3. CO
4. NO2
5. SO2
6. O3
7. NH3
8. Lead

CO2
PM5



Linear correlation curve



	Hilly/tribal	Plains	Beds
Sub-centre (HWC) A- <i>x del</i> B- <i>v del</i>	<i>1/3000</i>	<i>1/5000</i>	<i>3 MPW</i> <i>ANM</i> \leftarrow $\left(\frac{M}{Y} \right)$
PHC A- <i><20 del</i> B- <i>>20 del</i>	<i>1/20K</i>	<i>1/30K</i>	<i>5</i> <i>HA / HV</i>
School health PHC			
U-CHC	-	<i>1/2.5L</i>	
Metro:		<i>1/5L</i>	<i>100 bed</i>
Village level staff:	<i>1/1000</i>	<i>1/400-800</i>	<i>ASHA / AWW / TBA / UHG</i>

$P=I \times D$
 ODDS RATIO ad/bc

RIF $\frac{+D}{-}$

A	B
C	D

Relative risk: I_e / I_{ne}

> 1 - ↑ risk
 1 = no asso
 0.5 - 2 = Not valid
 1.1 - 2 = ✓

Attributable risk: $\frac{I_e - I_{ne}}{I_e}$
 15%

Population attributable risk: $\frac{I_T - I_{ne}}{I_T}$
 33%

Confidence level: $1 - \alpha$ α error probability
 $\alpha < 0.05$

Power of study: $1 - \beta$

Increase power: Increase sample size, precision

Confidence interval: $mean \pm 2SE$

SE mean: SD / \sqrt{n}

SE proportion $\sqrt{\frac{pq}{n}}$

Coefficient of variation: $\rightarrow \frac{SD}{mean} \times 100$

Z-score: $\frac{x - mean}{SD}$ DEXA scan / malnourished area

$$\sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}} = SD$$

Variance $(SD)^2$

SAMPLE SIZE $\frac{4pq}{d^2} \rightarrow$ absolute error

$$P = 10\% \\ \frac{4 \times 10 \times 90}{5 \times 5}$$

IMR $\frac{\text{no. of infant deaths}}{LB} \times 1000$

MMR $\frac{\text{no. of mat deaths}}{LB} \times 1 \text{ lakh}$

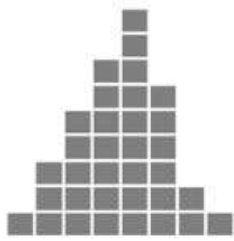
PNMR $\frac{> 28 \text{ wks POG} / 1000 \text{ gm} + 0-7d}{\text{total birth}} \times 1000$

$P_{reg} = 2^{nd} r$

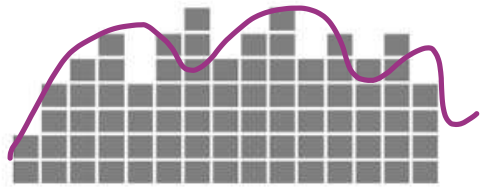
Biannual deworming

1-2yr / > 2yr
 200mg / 2-19yr
 400mg

Albendazole



point source - single exposure



pt source - multiple exposure



propagated



Interrupted

POSHAN Abhiyaan
PM's Overarching Scheme for Holistic Nourishment



PM Poshan SHakti Nirman

सही पोषण - देश रोशन

Shunting
S U L Anemia
2% 3%

ICDS

MW CD

education
all govt schools
10 & upper 10

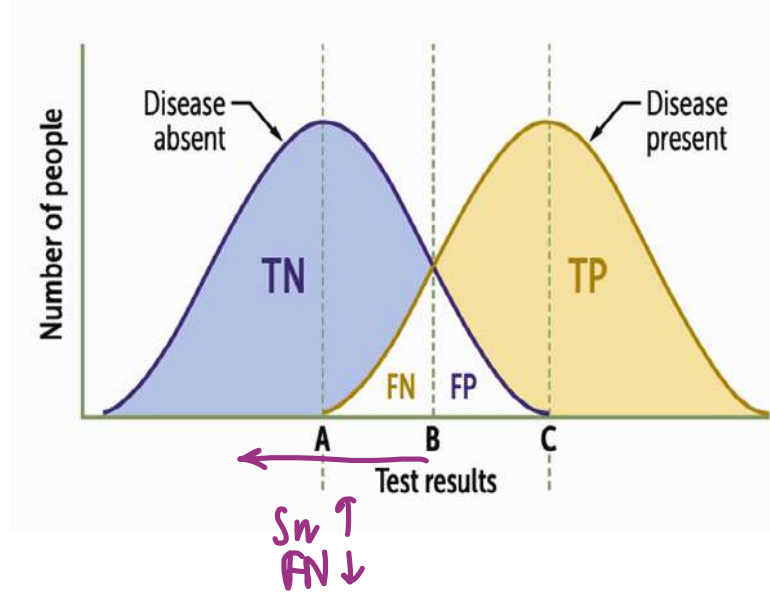
1/2 protein
1/3 cal

	Fe	Folate	Frequency
6-59m	20mg	100ug	Biweekly syrn
5-9y	45mg	400ug	WMy (pink)
10-19y	60mg	500ug	" (Blue)
20-49 Females			" (Red)
Pregnant			OD
Lactating			OD

Identified Health Conditions for Child Health Screening and Early Intervention Services	
<p>Defects at Birth</p> <ol style="list-style-type: none"> Neural Tube Defect Down's Syndrome Cleft Lip & Palate / Cleft Palate alone Talipes (club foot) Developmental Dysplasia of the Hip Congenital Cataract Congenital Deafness Congenital Heart Diseases Retinopathy of Prematurity 	<p>Deficiencies</p> <ol style="list-style-type: none"> Anaemia especially Severe Anaemia Vitamin A Deficiency (Bitot spot) Vitamin D Deficiency (Rickets) Severe Acute Malnutrition Goiter
<p>Childhood Diseases</p> <ol style="list-style-type: none"> Skin conditions (Scabies, Fungal Infection and Eczema) Otitis Media Rheumatic Heart Disease Reactive Airway Disease Dental Caries Convulsive Disorders 	<p>Developmental Delays and Disabilities</p> <ol style="list-style-type: none"> Vision Impairment Hearing Impairment Neuro-Motor Impairment Motor Delay Cognitive Delay Language Delay Behaviour Disorder (Autism) Learning Disorder Attention Deficit Hyperactivity Disorder
<p>30. Congenital Hypothyroidism, Sickle Cell Anaemia, Beta Thalassemia (Optional)</p>	

RBSK
X glaucoma
X survey

		Disease		
		+	-	
Test	+	TP a	FP b	PPV = $\frac{a}{a+b}$
	-	FN c	TN d	NPV = $\frac{d}{b+d}$
		$Sn = \frac{a}{a+c}$	$Sp = \frac{d}{b+d}$	



Reference	Man	Woman
Age	19-39yrs	19-39yrs
Weight	65kg	55kg
Height	177cm	162cm
BMI	18.5-22.9	18.5-22.9
Sedentary	2100	1700
Moderate	2700	2100
Heavy	3400	2700

1. Registration *SC & PHC*
2. ANC
3. Safe delivery
4. PNC and newborn case

*60ml
60mm
6-12wks*

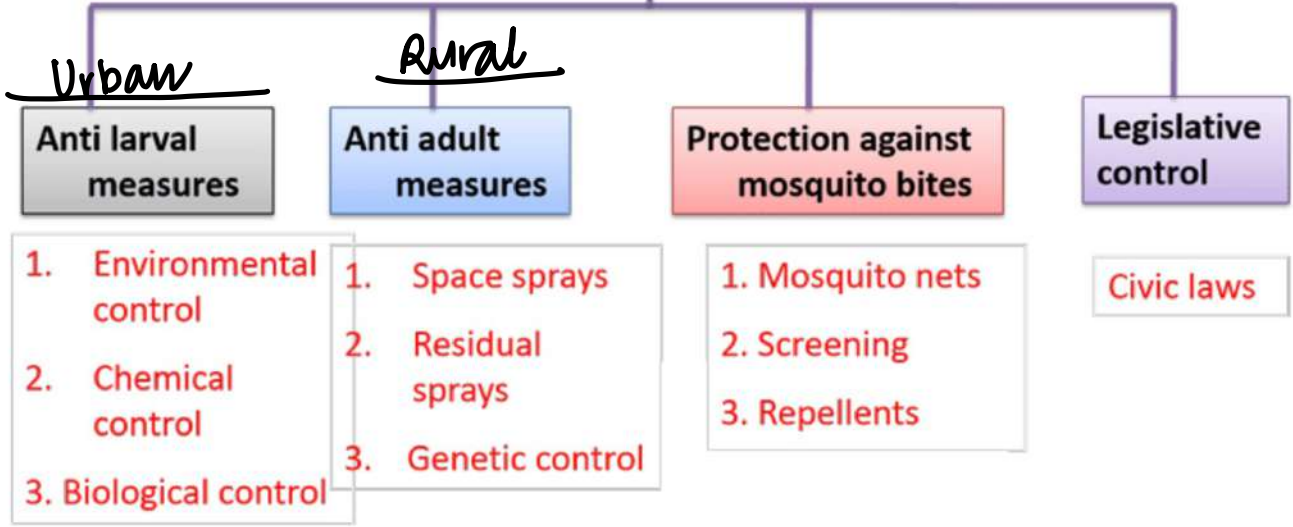
- BASIC EmONC** *(CHC)*
1. Antibiotics IV/IM
 2. Oxytocic drugs IV/IM
 3. Anticonvulsants IV/IM
 4. Manual removal of placenta
 5. Manual vacuum aspiration of retained products of conception
 6. Vacuum extraction
 7. Newborn resuscitation

- COMPREHENSIVE EmONC** *(Dist)*
7. Surgery, including cesarean section
 8. Blood transfusion

Siphon
Culex
aedes
anopheles x

Integrated vector control approach for mosquito

Mosquito Control Measures



Age (years) 25- 44

Married/ Widow/ Divorced

Should be of same village

10th pass 8th pass

Trained by AWW + ANM

Major impact indicator: Reduction of IMR in village

ASHA

No delivery
No vaccine

UNICEF

- G GROWTH MONITORING
- O ORAL REHYDRATION
- B BREAST FEEDING
- I IMMUNIZATION
- F FAMILY PLANNING
- F FOOD SUPPLEMENTS
- F FEMALE EDUCATION

Chemical:
Paris green = Stomach poison
Temephos/Abate = Contact poison

Biological: **Gambisia / GUupy**
Bacillus thuringiensis

Space spray: API <2
Malathion
Cyphenothrin **DDT**
Pyrethrum

Residual spray: API >2:
DDT (2 rounds)
Malathion (3 rounds)
Deltamethrin (2 rounds)

Deltamethrin
-ITBN: 6mon (AP 2-5)
-LLIN:3yrs (API >5)
0.0475inch
>150 holes/ich

ENT

- Moure incision:

Weber Ferguson: *Ca Maxilla*

Gluck-Sorenson:

- Trotter triad: *NPCA* →

- Gradenigo syndrome: *Petrositis*

- Grisel: *Rose position*

- Griesenger: *Lat sinus thrombolis*

- Guerin sign *Le fortz I*

- SMT:

- Weber test: *same-CHL, opp-SNHL*

- ECOG SP/AP >30% → *Meniere's*

- EECOLIMA

- LVESPA

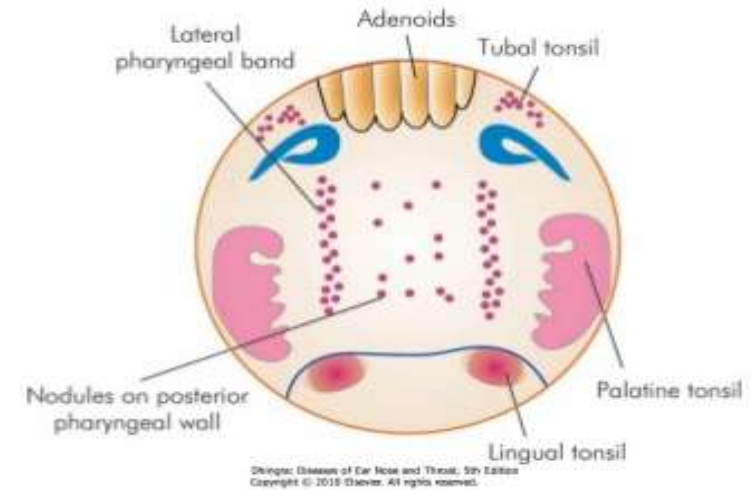
- All muscles supplied by LN *Recurrent* except *Cricothyroid* → *SLN (ext br)*

- Safety muscle larynx

- Tracheostomy:

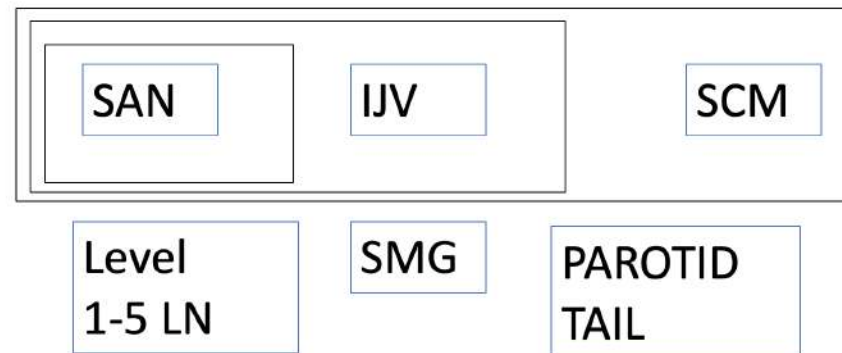


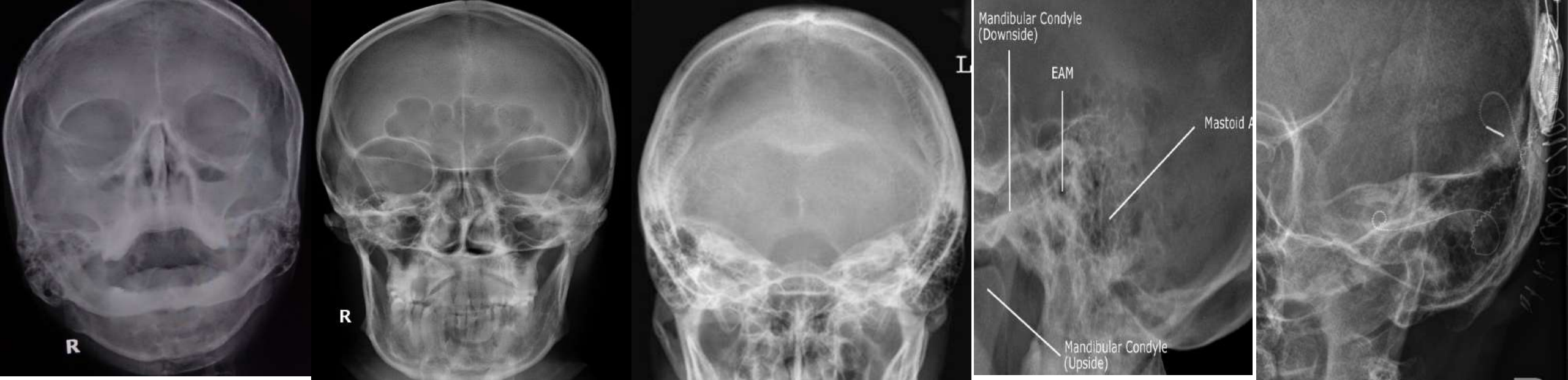
- UMN facial N:
- Crocodile tears:
- Frey syndrome:
- Promontory, high frequency sounds:
- Stria vascularis (Scala media):
- Lushka tonsil-
- Gerlach tonsil -



Thyroplasty

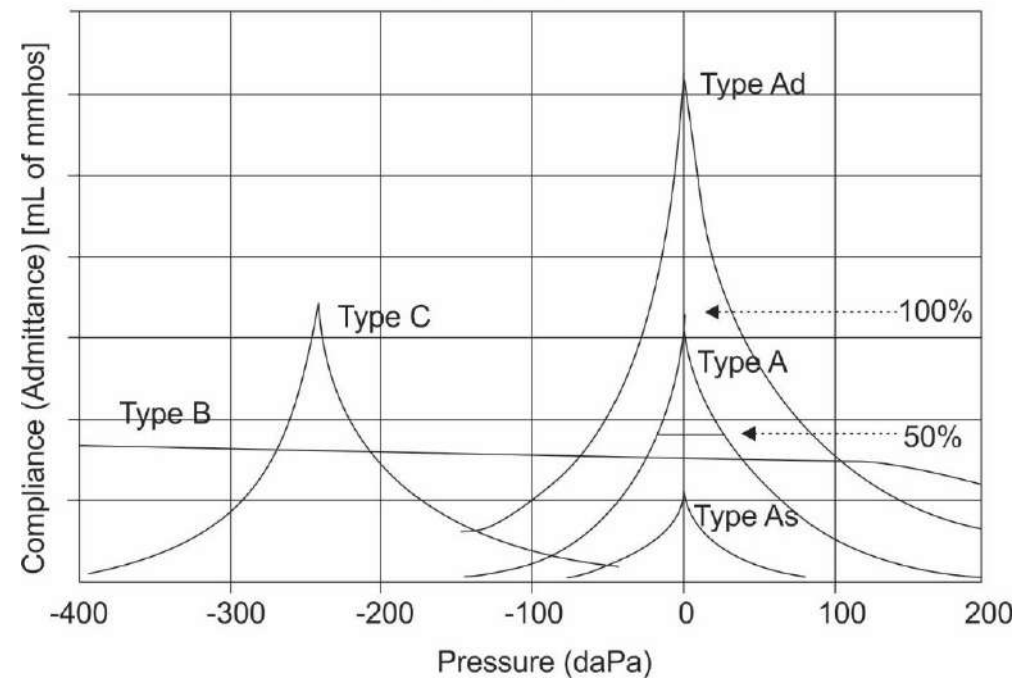
- 1-
- 2-
- 3- Shortening/ relaxation
- 4- Lengthening/ tightening





Stage	Description
IA	Limited to nose or nasopharynx
IB	Same as IA with extension into >1 paranasal sinus
IIA	Minimal extension through the sphenopalatine foramen into & including a minimal part of the medial part of the pterygopalatine fossa
IIB	Full occupation of the pterygopalatine Fossa, displacing the posterior wall of the maxilla forward: lateral or anterior displacement of the branches of the maxillary artery: superior extension may occur, eroding orbital bones
IIC	Extension through the pterygomaxillary fissure into the cheek & infratemporal fossa or the pterygoid plates
IIA	Erosion of the Skull base with Minimal intracranial extension
IIB	Erosion of the Skull base with extensive intracranial extension with or without cavernous sinus involvement

Tympanogram



	NORMAL	COCHLEAR LESION	RETROCOCHLEAR LESION
Pure tone audiogram	Normal	Sensorineural hearing loss	Sensorineural hearing loss
Speech discrimination score	90-100%	Below 90%	Very poor
Roll over phenomenon	Absent	Absent	Present
Recruitment	Absent	Present	Absent
SISI score	0-15%	Over 70%	0-20%
Threshold tone decay test	0-15% dB	Less than 25dB	Above 25dB
Stapedial reflex	Present	Present	Absent
Stapedial reflex decay	Normal	Normal	Abnormal
BERA	Normal interval between wave I & V	Normal interval between wave I & V	Wave V delayed or absent

Grade of impairment	dBHL corresponding audiometry ISO value (average of 500, 1000 and 2000 Hz)	Description	Performance
0	≤25	No impairment	No (or very slight) hearing problem, able to hear whisper at 1 m
1	26–40	Slight impairment	Able to hear and repeat words spoken in normal voice at 1 m
2	41–60	Moderate impairment	Able to hear and repeat words using raised voice at 1 m
3	61–80	Severe impairment	Able to hear some words when shouted into the better ear
4	≥81	Profound impairment including deafness	Unable to hear and understand even shouted voice

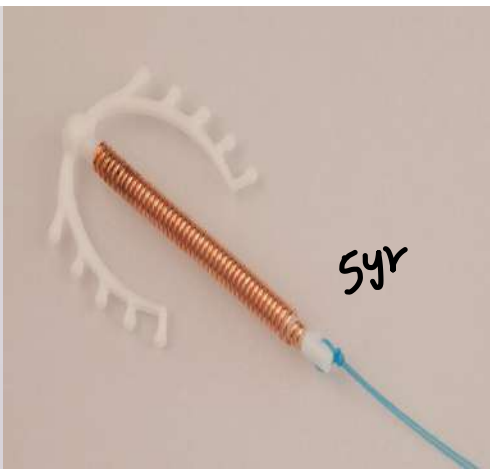
Tolerable sound level:
 TM rupture:

OBG





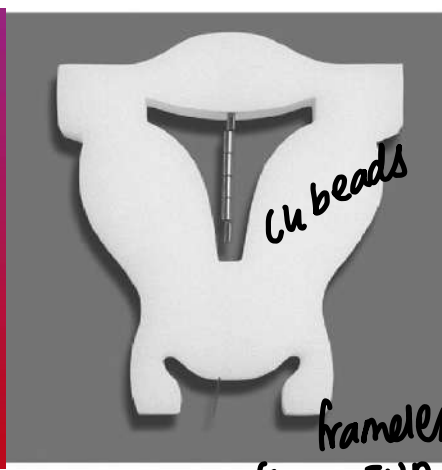
CuT 380 A
(HEUP)



CuT 375



Mirena - LNG 52mg
20 mg/day



Gynefix IUD



(S2, SCA)

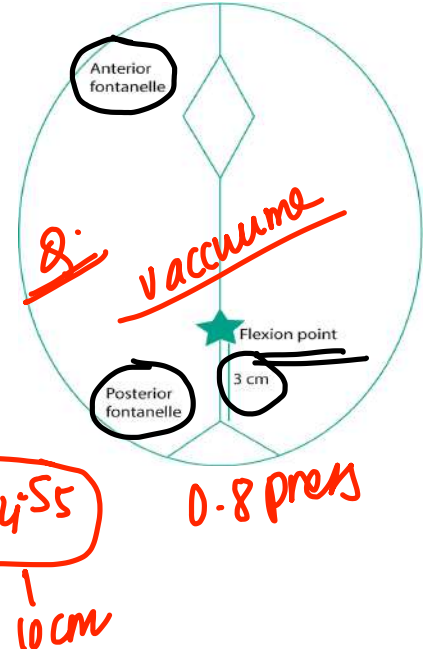
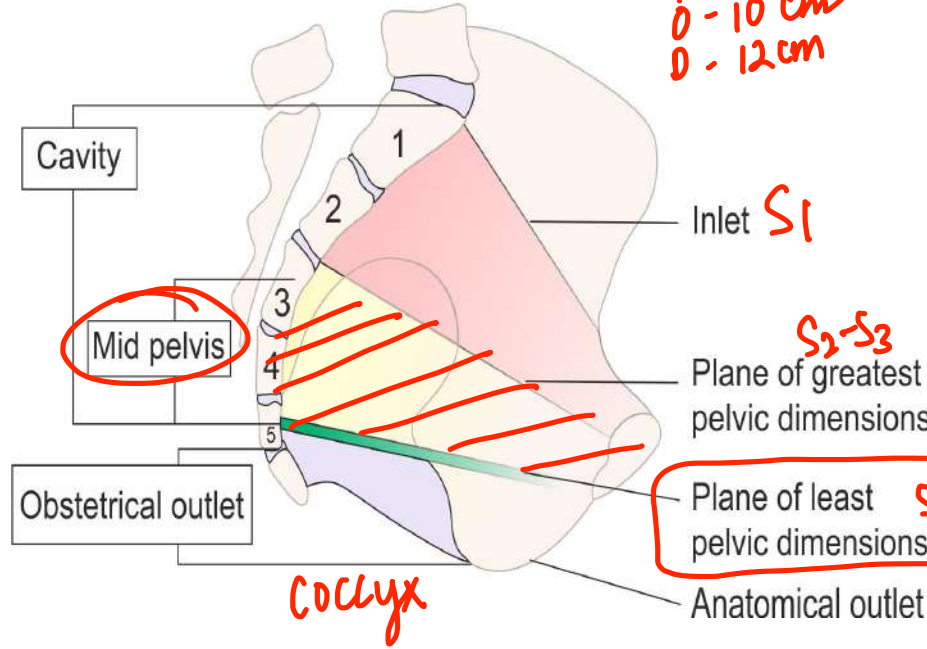
DMPA 150mg
3M

Tennessee system	Mississippi systems
AST > 70 IU/L	AST > 40 IU/L and LDH > 600 IU/L and
LDH > 600 IU/L	• Class I: platelets < 50 × 10 ⁹ /L
Platelets < 100 × 10 ⁹ /L	• Class II: platelets 50-100 × 10 ⁹ /L
	• Class III: platelets 100-150 × 10 ⁹ /L

(BISHOP Score)

≥ 6 = NVD

Cervical Feature	0	1	2	3
Cervical dilatation	< 1cm	1-2 cm	2-4 cm	> 4cm
Cervical length	4 cm	2-4 cm	1-2 cm	< 1 cm
Effacement*	< 30%	40-50%	60-70%	> 80%
Station of presenting part	-3 cm	-2 cm	-1/0 cm	+1/+2 cm
Consistency of cervix	Firm	Average	Soft	
Position of cervix	Posterior	Mid position	Anterior	



T - 11 cm
O - 10 cm
D - 12 cm

• Premature ovarian failure: $FSH > 40$ / $AMH < 1$ (any day)

• IVF **d3 ET**: +263 d IVF **d5 ET**: +261d embryo transfer

• Pritchard regimen $\rightarrow 14g \leftarrow 10g - 50\% IM 5,5$

• Therapeutic level $4-7 mcg/L$ $ug - IV inf^n$

• IADPSG: $92/180/153$

• WHO $\rightarrow 140 - 2hr$

• BIOPHYSICAL PROFILE $NSP + AFI + TBM - movement$
 $> 15 bpm$ $10-20$ 1 tone breathing 3
 $> 15s$

• Deceleration: Early- **Head**

Late- **UPI**

Variable- **cord**

• Post VVF repair: Sexual abstinence: **3M**

Pregnancy avoid **1y**

• Normal uterocervical length: **6cm**

• $12 \times 2 = 24$ **cerclage** $12-14wk$ $\rightarrow 2$ usr $cx < 21mm$

• **3x1 APLA** $\rightarrow 3$ **1st trimester** $> 1:3^{rd}$ $< 34wks$

• Medical MTP - **Mife** $\rightarrow 200mg$
 \downarrow **4hrs**
mead $\leftarrow 400u < 7wks$
 $\leftarrow 800u 7-9wks$

• 1ml fetal blood: 10 microgram anti-D

• T1: **50ug** T2/T3/28weeks: **200ug** $< 72hr$ repeat

ant: 25d
Post: 28d

SOP $\leftarrow < 2 - oligo$
 $\leftarrow > 8 - poly$

AFI $\leftarrow < 5 oligo$
 $\leftarrow > 25 poly$

B6
BA
B12

Homocystinuria

B2, B3, B6

Niacin synthesis

ADHD
 $6 \times 2 = 12$
 $> 6M$ **Symph** 2 settings $< 12yr$ age onset

Beta: $12mg \times 2$ dose - $24hrs$
Dexa: $6mg \times 4$ dose - $12hrs$

Preeclampsia
Pi-
infections

PHYSIOLOGICAL CHANGES IN PREGNANCY



Blood/plasma/RBC volume
Retic count
WBC count
All clotting factors
Fibrinogen
ESR
SHBG/TBG, Total protein

CO, HR, SV

IC
TV
MV

RBF, GFR



Hematocrit
Hb
Platelet
F 11/13
Protein C/S

PVR
BP

FRC

Sr Urea
Uric acid/Creatinine


Vaginal pH

Albumin ↓



BT, CT

EF

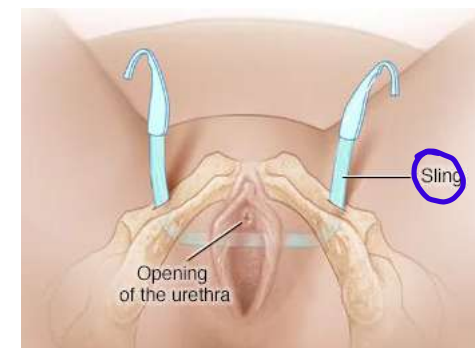
IRV
RR
Vital capacity
TLC 
COMPLIANCE

~~*NO. of accidental preg x 1200*~~
♀ x Time

Semen parameters	WHO 2010	WHO 2020
Semen volume	1.5 ml	1.4 ml
Sperm concentration	15 million/ml	16 million/ml
Total motility	40%	42%
Progressive motility	32%	30%
Viability	58%	54%
Morphology	4%	4%

	Pearl Index
Calendar Method	24
Female Condom Vaginal Sponge	20
Male condom	14
IUCD	2
OCP	1
Sterilization	0.1

Calorie Requirement increases in pregnancy
Second trimester: +350 Kcal/day
Thirst trimester: +450 Kcal/day
Lactation (0-6m): +600 Kcal/day
Lactation (6-12m): +520 Kcal/day



Trans
Obturator
foramen
(SUI)
Q.
Hypermobility of
urethra
Weak pelvic floor

- Engagement
- Descent
- Flexion
- Internal rotation
- Crowning
- Extension
- Restitution
- External rotation
- Expulsion of rest of the body

Changes in Uterus after delivery

Undergoes involution (0.5 inch or 1 finger breadth per day)

Immediately after delivery	Uterus is at the lower border of the umbilicus (20 weeks)
Day 1	1 finger breadth below the umbilicus
Day 2	2 finger breadths below the umbilicus
At the end of 2 weeks	No longer palpable abdominally (It becomes a pelvic organ)
At the end of 6-8 weeks	Pre-pregnant sized uterus 2M.

WHO PROGNOSTIC SCORING

SCORES	0	1	2	4
AGE IN YRS	<40	>40	-	-
ANTECEDENT PREGNANCY	H. MOLE	ABORTION	TERM	-
INTERVAL SINCE LAST PREGNANCY	<4 MONTHS	4-6	7-12	>12
BHCG	<1000	10 ³ -10 ⁴	10 ⁴ -10 ⁵	>10 ⁵
LARGE SIZE TUMOR	3-4	5	-	-
SITE OF METASTASIS		SPLEEN, KIDNEY	GI <i>lung x</i>	LIVER, BRAIN
NUMBER OF METASTASIS		1-4	5-8	>8
PREVIOUS FAILED CHEMO			SINGLE DRUG	TWO OR MORE DRUG

- Stage I - Disease confined to uterus
- Stage II - GTN extending outside uterus but limited to genital structures (adnexa, vagina, broad ligament)
- Stage III - GTN extending to lungs with or without known genital tract involvement
- Stage IV - All other metastatic sites

<6 → M+X
≥7 → EMALO

Help: call for help

Evaluate for episiotomy

*LCMT
metastasia
p.*

Legs: McRoberts position

Pressure: Suprapubic pressure

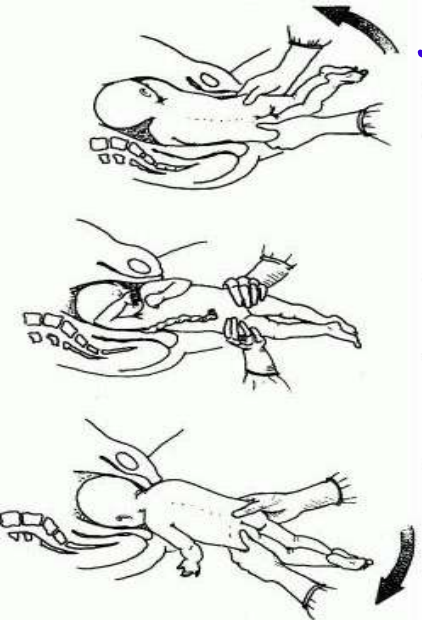
Rotate posterior shoulder
Woods/Rubins

Roll the patient on to all fours

Gaskin's

Put baby back -> LSCS

Zavanelli



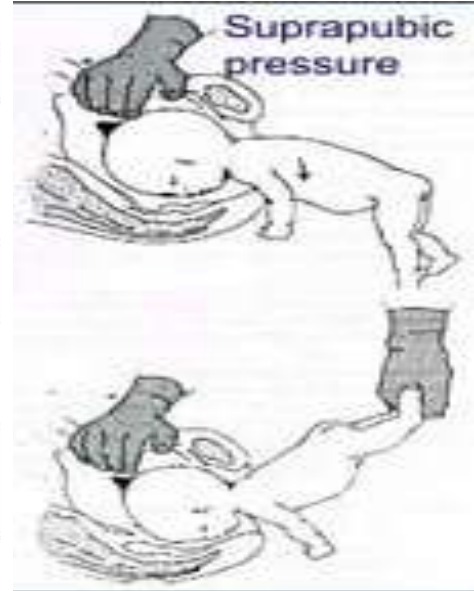
lovset

Fetus is held by hip or bony pelvis

The fetus is rotated through 180 degrees to deliver the shoulder and arm

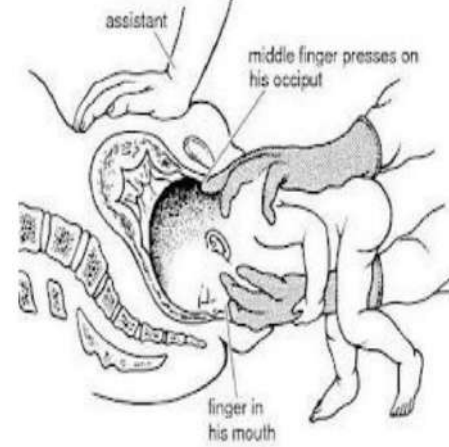
The fetus is rotated to the opposite direction so that the other shoulder and arm are delivered under the pubic symphysis

Burns & Marshall's



Suprapubic pressure

smelle's



assistant

middle finger presses on his occiput

finger in his mouth



Prague
Chin to pubis

Psychiatry

Brief psychotic disorder < 1M

Schizophreniform - 1-6M

Schizophrenia - 6M

Schizoaffective 2Wk

Delusional disorder > 1M

Depression > 2Wks

Persistent depressive disorder/ Cyclothymia > 2y

Bipolar disorder / Mania ← BPD I - 7d

Hypomania 4d ← BPD II - hypo + depress

OCD 2Wks

Panic disorder 1M

GAD

Phobia → 6M → sys. desensitiⁿ > CBT

Acute stress reaction 1M

PTSD > 1M

Adjustment disorder < 6M

ADHD 12M

- Thought content: **delusion**
- Derailment / Loosening of association/Tangentiality **Form**
- Flight of ideas/ Pressure of speech/ Thought retardation/ Circumstantiality/ Perseveration **stream**

Clang

- Possession: **obsession**
- Repression VS suppression ^{→ voluntary}
- ^{1° defence (invol)} Projection VS displacement

DOC for alcohol withdrawal: **BZD** **(LOT)**
^{SGP1} **AST > ALT** Alcohol ^{SGP7} **ALT > AST - viral hep.**

Anti-craving: **Naltrexone > Acamprosate**

- HEROIN Toxicity DOC: → **Naloxone**
- Withdrawal: **Memadone** ^{αβ-} (Q↑↑)
- Squeeze technique: **Premature ejaculⁿ**

Precontemplation → **Contemplation** → **Preparation** → **Action** → **Maintenance** → **Relapse**

MECP2 **Rett's Sx** **(XLD)** >6M - ♀ - microcephaly (cannabinoids x) ^{>2yr = Heller's Sx}
Trophinitide ✓

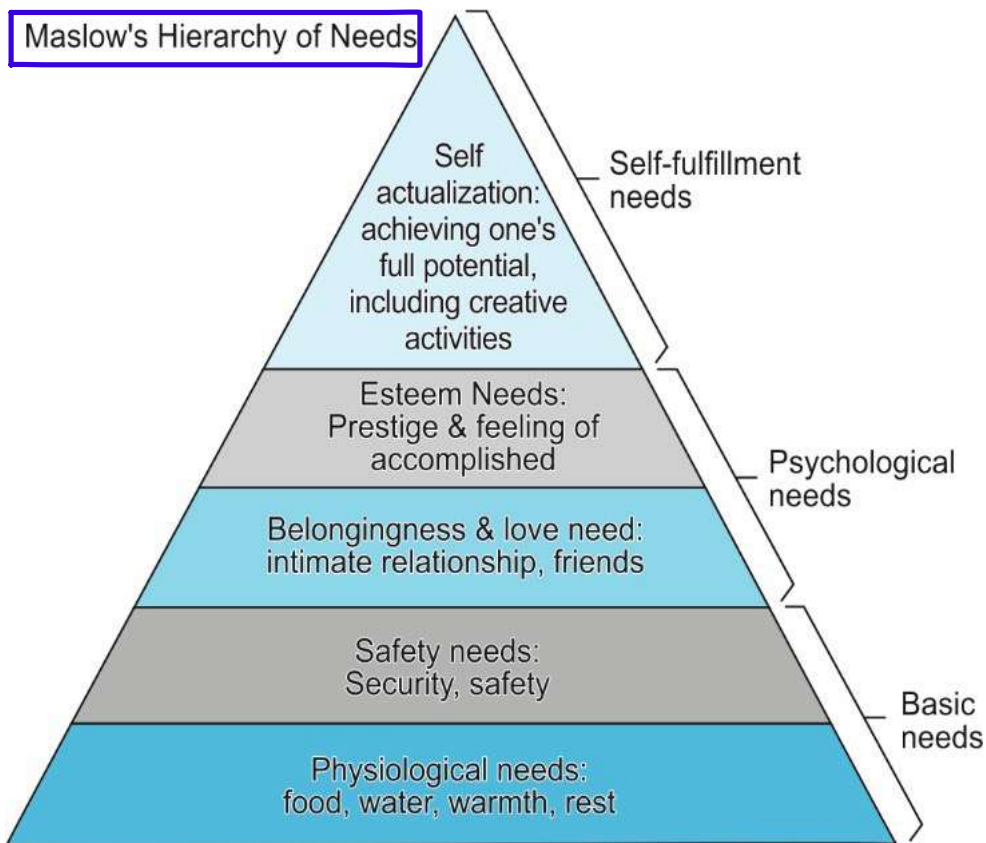
^{32AD} TRS, Max metabolic s/e, **Sialorrhea**, Seizure, Myocarditis, Agranulocytosis: - **clozapine**

QT prolongation: **2QT** **Haloperidol**

SIADH, vivid dreams **dry mouth**, sweating **SSRI**

Schizophrenia

Maslow's Hierarchy of Needs



GOOD PROGNOSTIC FACTORS	BAD PROGNOSTIC FACTORS
Acute onset or abrupt onset	Insidious onset
Advanced age at onset (>35 yrs)	Early onset (<20 yrs)
Catatonic, paranoid subtype	Simple, disorganised, hebephrenic
Female sex	Male sex
Prominent positive symptoms	Prominent negative symptoms
Presence of affective symptoms	Absence of affective symptoms
Family history of mood disorders	Family history of schizophrenia

CHHOTI COPY REVISION: PART 4

MEDICINE / PATH / PHARMA / PHYSIO

UT \ominus : Griesofulvin
Sle: Periph neurop
SIADH
Urtaistine
Spores BM
Colchicine \rightarrow Komarov's fixative m/c - Giemsa
Taxanes
Vinca alkaloid
Mebendazole
centromere - c staining

QT \oplus
Tendon rupture
 \oplus Motilin - Hunger
House keeping
Saundice
FG. Macrolides, Azoles
ATP \ominus Bedaquiline, Pretomanid, \ominus mycolic acid
Ziposidone, Quinapone, Thiadiazine
Methadone
Ia, III \rightarrow K Blocker, 5HT $3\ominus$, 5HT $4\oplus$

Enzyme inducers	Enzyme inhibitors
Griseofulvin → Doc: T. capitis → 4 hubble ⊖	Valproate → only ⊖ next all antiepileptic use
Phenobarbitone	Ketoconazole Azoles inducers
Phenytoin	Cimetidine /
Rifampicin → Replace = Rifabutin in	Omeprazole →
Carbamazepine TB & HIV	Ciprofloxacin Fg
Smoking, Ethanol (ATT ↓ ART)	Erythromycin, Macrolides
	Clarithromycin
	INH

Red man: Vancomycin (dit Histamine)
 Blue man: Niacin → flushing (dit PG)
 Grey baby: Amiodarone → PLS - Photosensit
 Black thyroid: Chloramphenicol
 PFT - Pulm fibrosis
 LFT - Liver
 TFT
 Pseudo-jaundice: uveitis, Rifabutin
 Flagellate: Bleomycin
 Skin / nail pigmentation (ART): Stribitabine: palm in SIADH
 BM spacing / Hepatox = Zidovudine
 Hand foot syndrome: SKV / Capecitabine
 Purple toe syndrome: Warfarin → CO2 ⊖ prot. C&S
 Pseudolymphoma / Purple glove syndrome Phenytoin
 Vesicular eruptions (CNS Depressant): Thrombocytopenia
 Barbiturate
 Livido reticularis: Amantadine

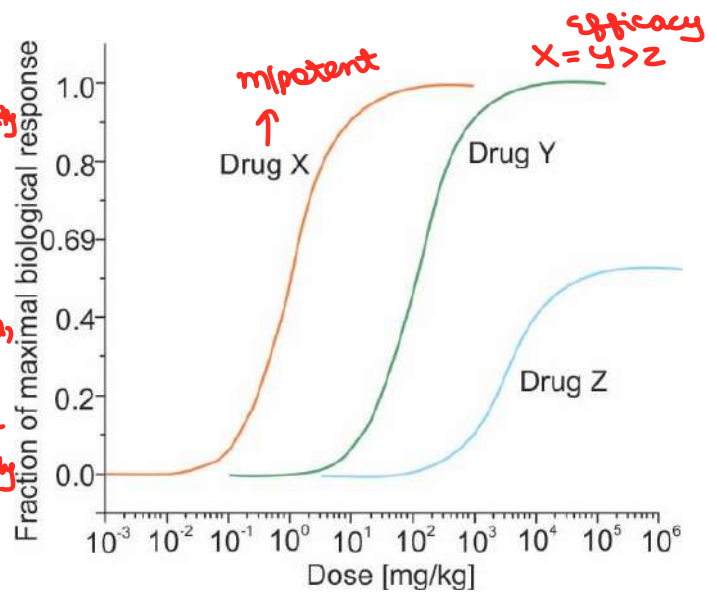
CYP2C19:
CLOPIDOGREL → active
 ↳ interaction = omeprazole

CYP2C9: both zero order
WARFARIN → Factors 2, 7, 9, 10
PHENYTOIN
 ↳ zero order

CYP 3A4
 CAT
 OCP(ESTROGEN)
 Cyclosporine/ Tacrolimus → Nephrotoxicity
 Statins / Amiodarone
 ↳ gum hyperplasia

CYP2D6
 ↳ Se: cystic endometrial hyperplasia, DVT, crystalline maculopathy
TAMOXIFEN → active
 ↳ premenopausal
 Bblocker
 SSRI

Schedules:
 Under medical supervision: G
 With prescription only: H
 Cannot be treated: J
 Addictive potential: X
 Category: safety in pregn
 X: Teratogen



HELP
 ↳ left = more potent
 Ht = Efficacy

un = B_{un}
 $K_m \downarrow$
 $V_{max} \downarrow$

Competitive → $\uparrow K_m$ V_{max} const
 \downarrow potency

Non comp → \downarrow efficacy — K_m const
 $V_{max} \downarrow$

ATT drug causing psychosis: **Cycloserine**

ATT drug causing Hypothyroidism: **Sitomamide / PAS**

ART causing intracranial bleed: **Tipranavir**

Antifungal causing heart failure: **Itraconazole**

Daratumumab (CD38-): **MM**

CD38 → marker of plasma cell

→ face, rodent ulcer, pseudopalisading

Vismodegib / Sonidegib: **Basal cell carcinoma (Sonic Hedgehog ⊖)**

Anticancer causing cerebellar ataxia: **Cytarabine**

→ Dry mouth & sweating

SIADH: **Vincristine, Cyclophosphamide, Oxcarbazepine, SSRI, chlorpropamide, small cell ca lung, encephalitis, pneumonia**

Palivizumab **RSV** → Px to High Risk Babies ⊖ → Ribavirin

Cetuximab, Panitumumab **EGFR ⊖ / Her1** → adenoca lung

Emicizumab **Thrombophilia**

→ gp IIb IIIa

Fostamatinib **Tyrosine kinase ⊖** → in STP

Oprelvelkin **IL-11** → ↑ platelets

Romiplostim, Eltrombopag **PLT stim**
Thrombopoietin analogue

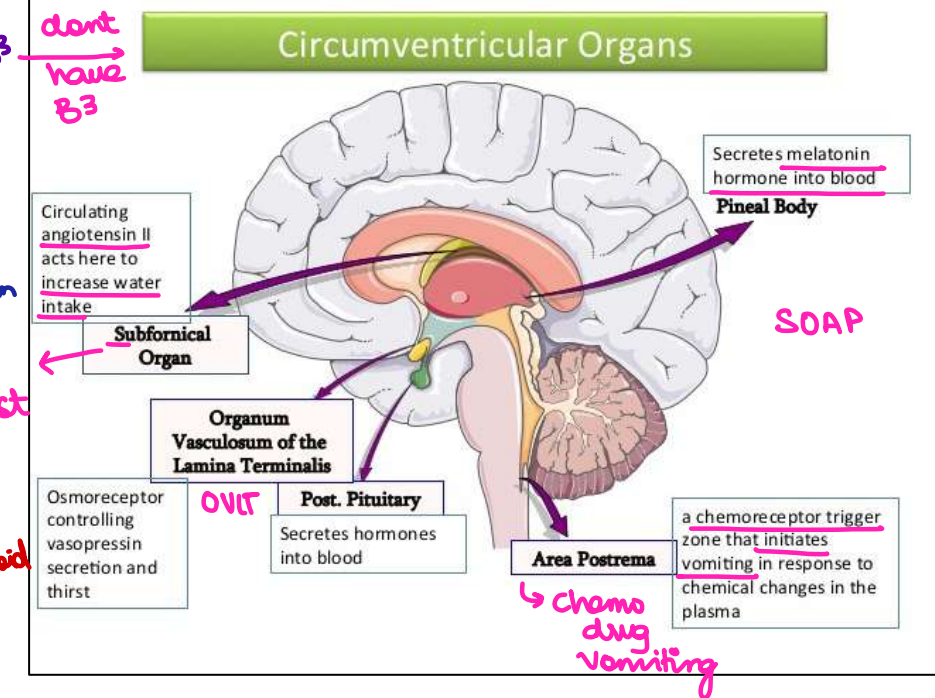
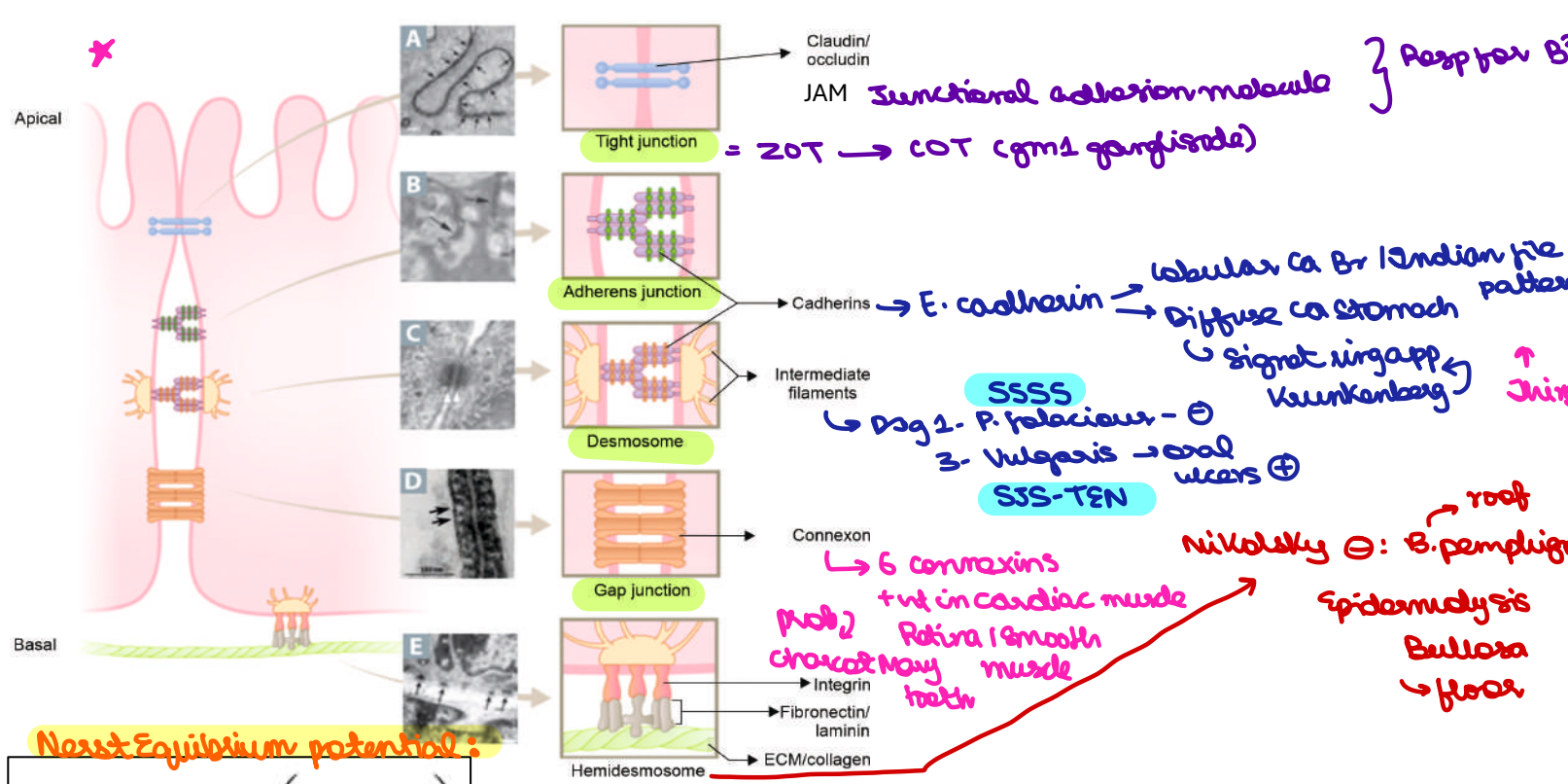
Palbociclib: Cyclin- dependent kinase 4/6 -Breast cancer

BRCA-2 → 13 → RB → ATP7B Wilson

Olaparib: Poly(ADP-ribose) polymerase (↓ DNA repair) : Breast, ovarian, pancreatic and prostate cancers (**BRCA+**)

PS3
NF1
← 1 - ch. 17

INH
→ injures neurons, hepatotoxic
→ SHIP → drug ind Lupus
→ ⊖ vit B6 → sideroblastic anemia
→ CYP ⊖

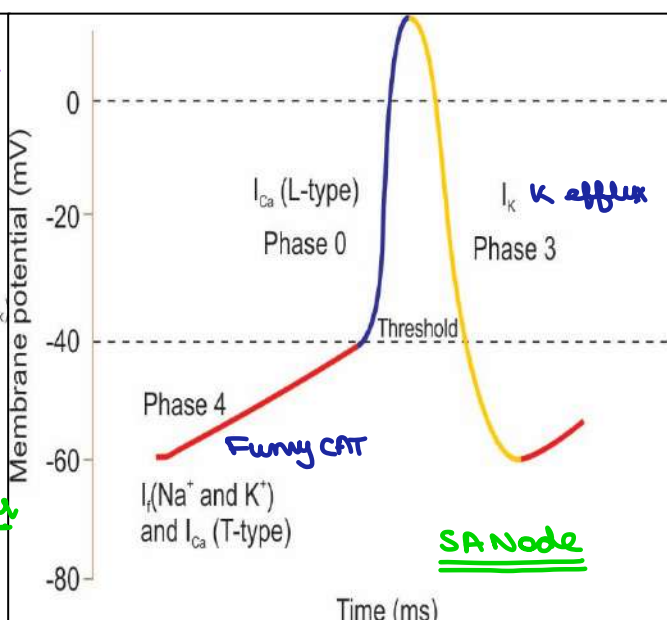
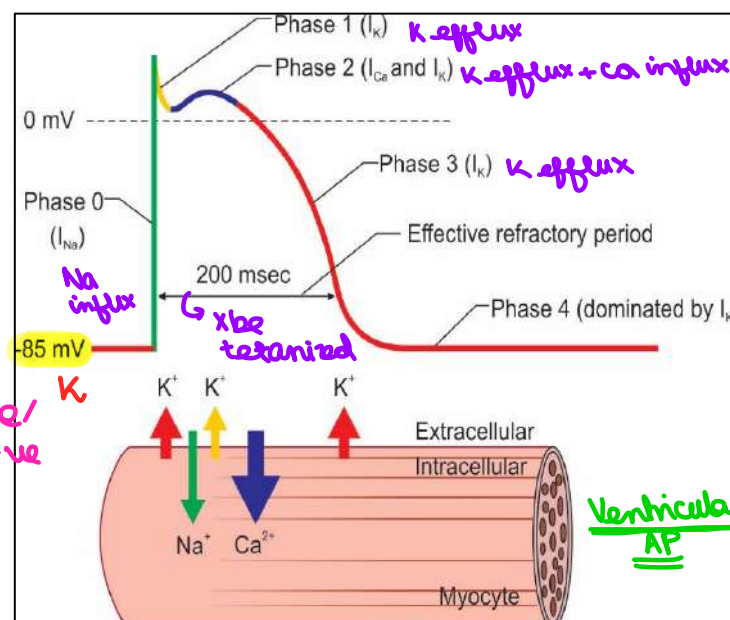
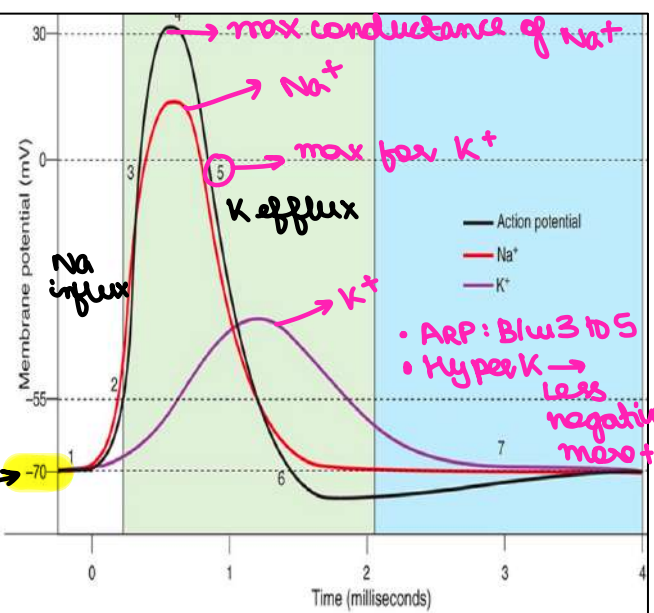


Nernst Equilibrium potential:

$$V_{Eq} = \frac{RT}{zF} \ln \left(\frac{[X]_{out}^{140}}{[X]_{in}^{10}} \right)$$

$Na \rightarrow +61.5 \log \frac{10}{1} \rightarrow 1$
 $\pm \frac{61.5}{z} \log \frac{conc\ out}{conc\ inside}$
 \rightarrow valency

- Na: +60 mV
- Ca: +100 mV
- Cl: -70mV
- K: -90V



IL-2, IL-12, INF-G: TH_1 → granuloma/cell mediated imm
 IL-4, IL-5, IL-13: TH_2 (Humoral) IL4 → IgE
 IL5 → eosinophils
 IL-1, IL-6, TNF-A: Pyrogenic
 IL-10, TGF-B, Lipoxin: Anti-inflammatory
 IL-8, C5a, LTB4, 5HETE, Kallikrein: Chemokines
 C3b, IgG: opsonins

C3a, c5a Anaphylatoxins

CD16, 56, 94: NK cell

CD41, 42, 61: Megakaryocyte

Leukocyte common Ag: CD45 CALLA → CD 10

Terminal comp /MAC def: Neisseria infection → cit to live vaccines except complem def ✓ be given

C1 INH def: HAE → drug: Danazol

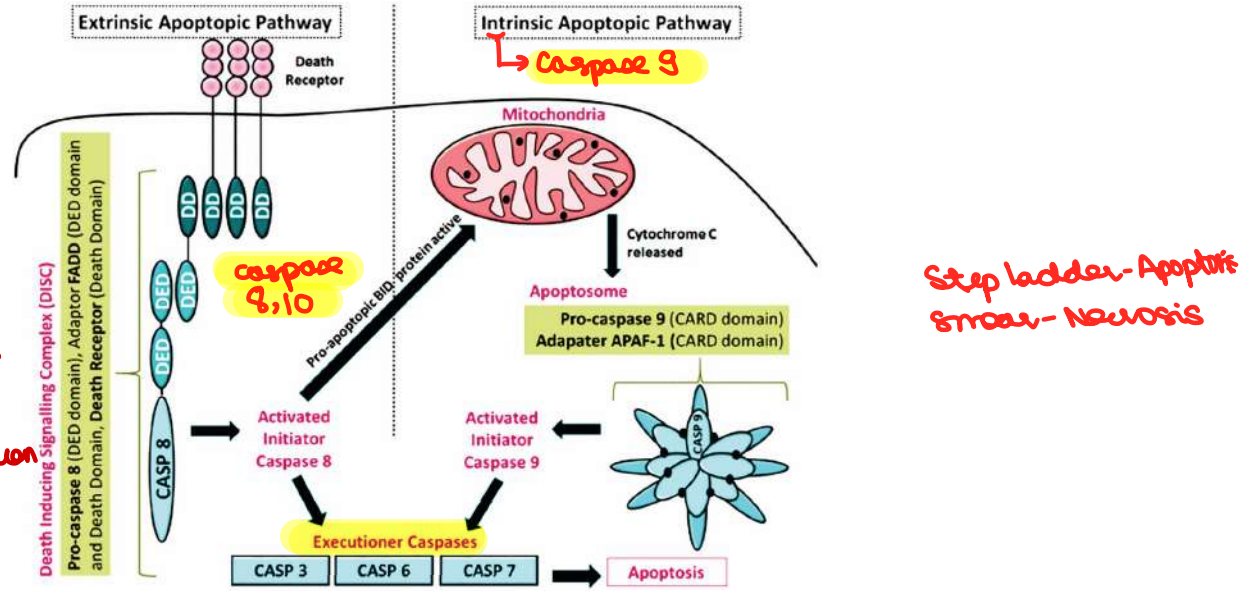
Affinity maturation-Somatic hypermutation

Isotype switching-Alternate RNA splicing IgM ID → IgA/E/I4

Benzene leukemia (AML)

Benzidine UBCa → NMP22

Pro apoptotic genes (BH1-3)	Anti-apoptotic genes BCL2, BCLXL, MCL-1 Sex steroids	Apoptosis initiators or Sensors
BAK Gene	BCL-2 Gene (Most Important)	BIM Gene
BAX Gene	BCL XL Gene	BAD Gene
p53 Gene	MCL1 Gene	PUMA Gene
Glucocorticoids	Sex (Love) Steroids	NOXA Gene



Step ladder- Apoptosis
 Smoax- Neurosis

PCD with RIPK-1 and MLKL phosphorylation-Neuroptosis
 PCD with Caspase 1,4,5,11- Pyroptosis
 PCD-iron (fenton reaction/lipid peroxidation) Ferroptosis

VC → VD → VP → vas permeability
 → vasoconcty
 Raynaud: White-blue-red → vasodilation
 → cyanosis
 Margination → Rolling → selectins → LAD 2
 Adhesion → Transmigration (PECAM / CD31) → Chemotaxis → Opsonisation → Phagocytosis

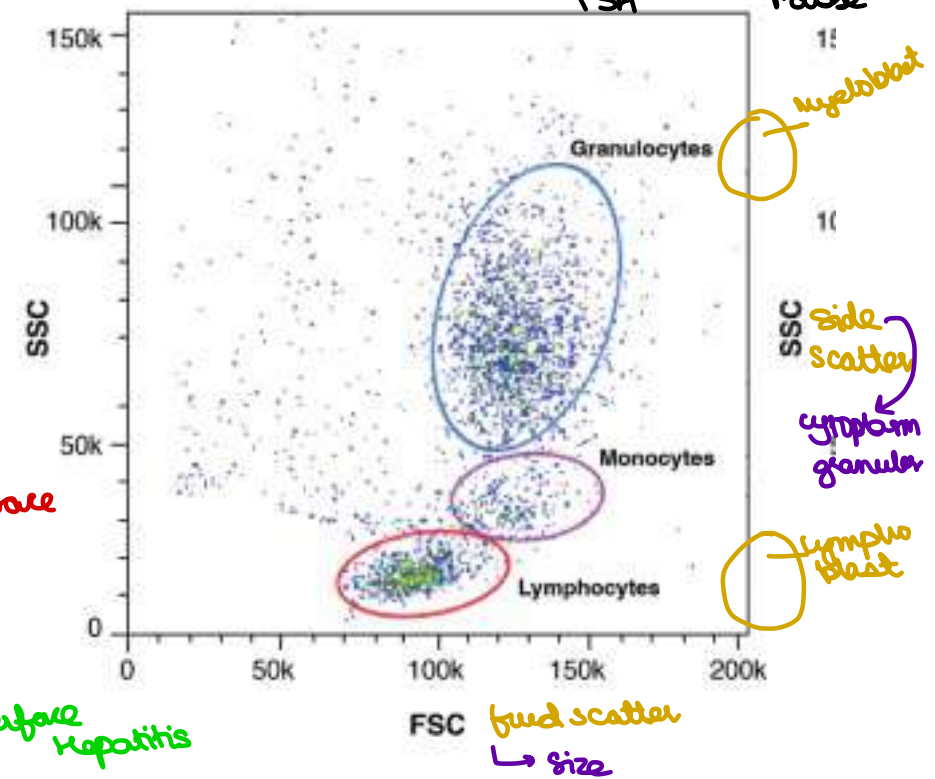
Bombay BG → LAD 2 → Rolling
 LAD 1 → adhesion
 → Delayed umb stump sep
 [2000]
 → NADPH oxidase → Ch granulum d2
 Lyst → chediak hagashi

PPI: B12 deficiency / Fracture / C.difficile → Doc: Fidaxomicin
 ↓
 oral vancomycin

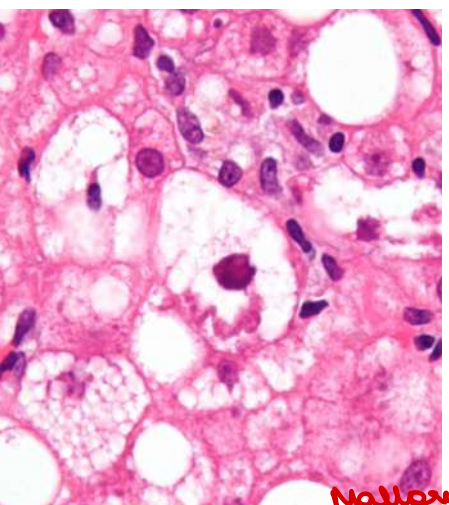
⊕: Total T3 ↑
 T4 ↑
 TSH Free: ⊖ to slight ↑
 TBG ⊕
 • hypothyroid
 ↑ dose

During contraction:
 Prominent- M
 Disappear- H
 Shorten- Σ
 Constant- A

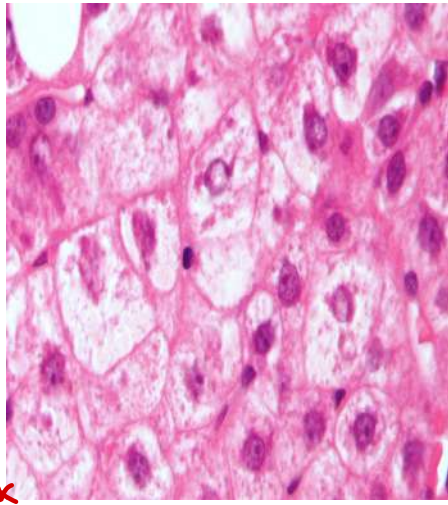
1 slow red ox Type 1 → slow
 → ↑ Hb, ↑ mitochondria, ↑ myoglobin
 → contract for long time
 → oxidative
 → 32 ATP
 → solars



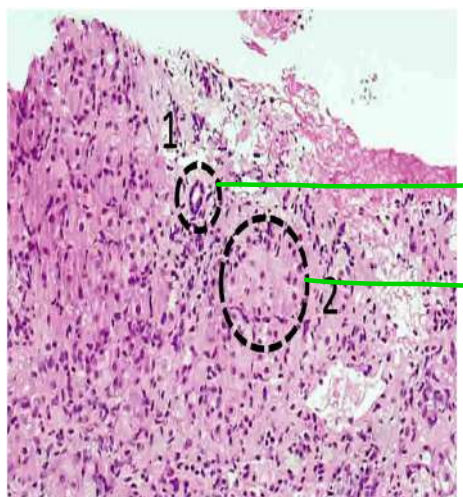
Lichen planus → Hep C cirrhosis
 → Apoptosis
 → max Joseph space



Mallory Denk → Alcoholic CK 8/18



Hep C → Councilman Body (Apoptotic)



AIH Hepatitis

Interface hepatitis
 Emperipolesis

- ① Rosai Dorfman
- ② MDS
- ③ CLL

anti Type 1 AIH: ANA, SMA

PIGGLET: JAK STAT / (N) Receptor Tyrosine Kinase → Prolactin, GH
 IL: GM-CSF, Leptin, EPO/TPO
 Phospholipase C
 PLC → IP3 / DAG (Gq) H₁α, V₁, M₁, M₃, AT-III, G_{0T}

Insulin PIFE
 ↳ TKI MK

cGMP: BAN - BNP, ANP, NO

Cytoplasmic: Steroids / Vit D / Mc

↳ GnRH
 gastrin
 oxytocin
 TRH
 oxytocin

T/P. Both

G_i → ↓ CAMP = M₂
 = α₂
 = D₂

Prolactinoma / lactation suppression DOC:

Dopamine agonist → Bromocriptine
 cabergoline ⇒ puf m ♀

(T&A, nucleus)

Cardiac valve fibrosis / useful in DM: Bromocriptine

side: erythromelalgia

Dual mechanism osteoporosis: Strontium Ranelate, Romosuzumab, sclerostin ⊖

↑ Blasts = PTH 1-34
 Abaloparatide
 Teriparatide

estrogens ⊖
 Bisphosphonate

TNF-α inhibitors: Adalimumab / Certolizumab / Etanercept / Infliximab / Golimumab

Blood DO
 IGRA / Quantiferon GOLD / Mantoux (RID TB)

IL-1R Antagonist: Anakinra

IL-2 → Basiliximab
 CD25 ↑ prevent transplant Rx

IL-6 inhibitor: Tocilizumab, Sarilumab

Co-stimulation inhibitor/CTLA4-: Abatacept

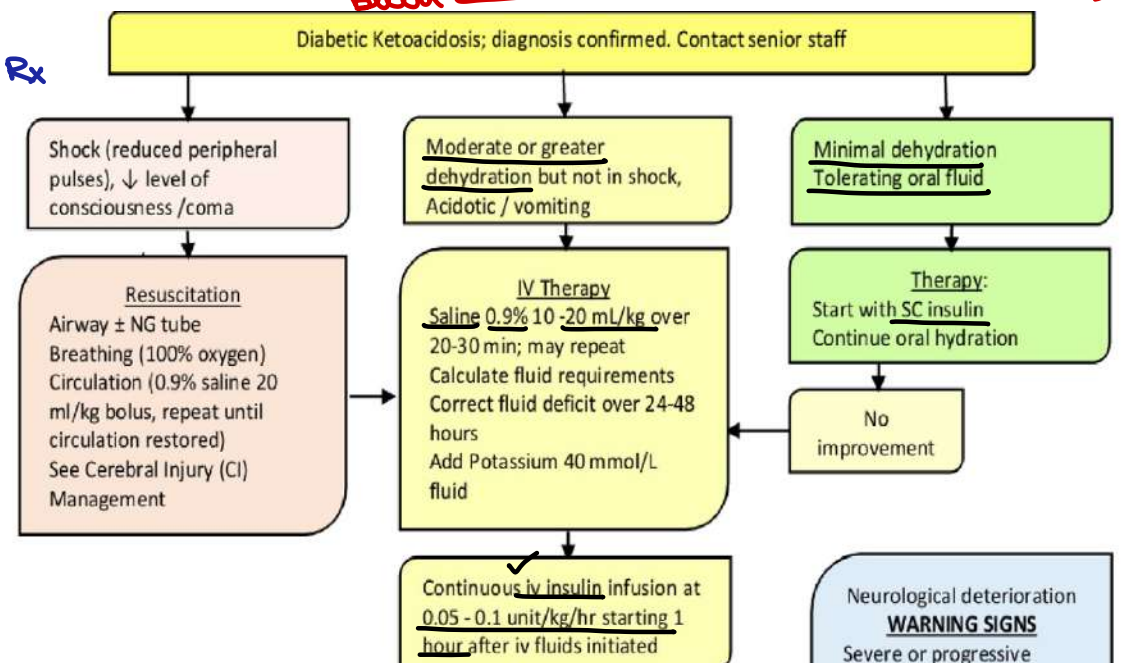
Order of blood draw: Blue → Red / Gold → Li Na Heparin → EDTA → Grey
 Purple
 Pink
 Royal Blue

Kweim test / CD4: CD8- Sarcoidosis → Ratio ↑
 (N) → 2:1

Anti-enolase: Borchers dz anti endothelial → Kawasaki

MODY3: HNF 1α (m/c)

cut: 22 gov / < 25 yrs / AD



Agent	Mechanism of action	Side effects
Sulfonylureas Chlorpropamide Glipizide, Glyburide Meglitinides Repaglinide, Nateglinide	Increases insulin secretion by inhibiting B-cell K ⁺ ATP channels	Hypoglycemia , Weight gain Chlorpropamide: SIADH
Biguanides Metformin	Stimulates AMP kinase, decreasing insulin resistance Useful in CV risk mortality	Lactic acidosis, Weight loss, Vit B12 deficiency Max reduction in HbA1c x renal failure
Thiazolidinediones Pioglitazone Rosiglitazone	Activates transcription regulator <u>PPAR-g</u> , decreasing insulin resistance PPAR-γ	Weight gain, Heart failure, Hepatotoxic, Fractures Risk of bladder cancer - Pioglitazone MI- Rosiglitazone
GLP-1 agonists Exenatide, Liraglutide-SC Semaglutide-Oral Tirazepatide: + GIP analogue DPP4 inhibitors : ORAL → wt neutral Sitagliptin, Saxagliptin, Linagliptin	Increases glucose- dependent insulin secretion, decreases glucagon secretion, delays gastric emptying Sneakin → ↑ satiety Useful in CV risk mortality GLP-2 agonist: Teduglutide → used in Stomach	Increase satiety, Weight loss Pancreatitis - GLP 1 ⊕ MTC → GLP ⊕ Nasopharyngitis- DPP4 - : CI in renal failure except: Linagliptin → ✓ in renal failure
Amylin Analogue Pramlintide Type 1 DM	Decreases glucagon secretion, delays gastric emptying	Increase satiety
α-glucoside inhibitors Acarbose , Miglitol	Reduces intestinal disaccharide absorption	Diarrhea, Flatulence CI in IBD
SGLT2 Inhibitors Canagliflozin, Dapagliflozin	Increases renal glucose excretion Useful in CV risk mortality → most imp t *	Urinary tract infections , Polyuria (osmotic diuresis) Weight loss , Fournier's gangrene

P a4 QRS 1 cx T 2dn v 3y

atrial depolar →
 ventr depolar →
 AV valve closes →
 Semilunar valve closes →

Category	Duration from last attack
RF without carditis	5 years or until 21 years of age (whichever is longer)
RF with carditis but no residual heart disease	10 years of until 21 years of age (whichever is longer)
RF with carditis + residual heart disease	10 years of until 40 years of age (whichever is longer)

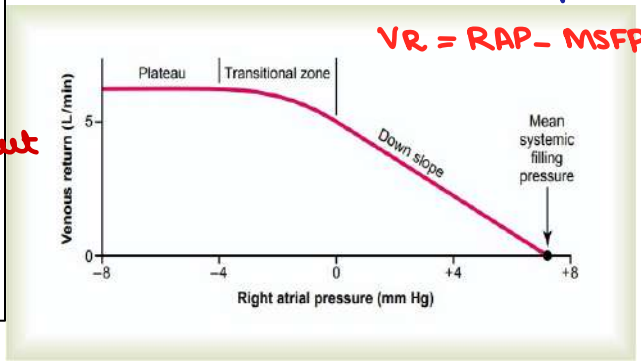
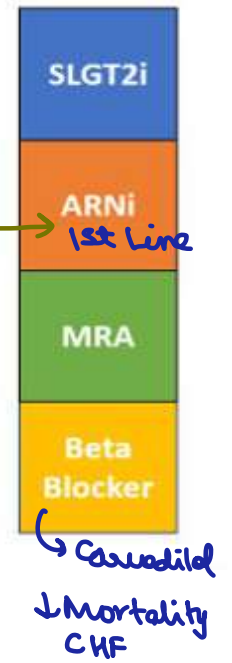
DYSLIPIDEMIC DRUGS:
 Statins-HMG coA reductase inhibitor
 Ezetimibe-Absorption -
Fibrates-PPAR alpha + *sle: gallstones*
 Niacin-HSL - *sle: CME, Hyperuricemia-gout, PG, ← Flushing, glykemia-DM*
 Alirocumab, Evolocumab-PCSK9-
 Evinacumab: AL3p

→ Phenytoin, cyclosporine, Verapamil

Gingival hyperplasia/ Hyperprolactinemia / ATP binding cassette/ AV block/ Constipation/ Pedal edema Verapamil (Non-DHP)
PPAR-gamma agonist / Uric acid excretion increase/ TxA2 inhibition ARB's

Saroglitazar: α/γ ⊕ → losartan ← telmisartan
 Lanfibranor: Pan PPAR → used in NASH → *tit: vit E*

Ivabradine: *Sf Blocker* → *visuol sle*
 Nicorandil: *K channel opener, NO release*
 s/e: Aphthous ulcer
 Rho kinase inhibitor: Fasudil
 Neprilysin+ ACE inhibitor: *omapatrilat*
 S/e: *Refractory cough, angioedema ⇒ ↑ Bradykinin Level*
 Neprilysin inhibitor: *Sacubitril + ARB*
 Metabolic modulators (PFOX-): *Frimotarine*
 s/e: *aggravating movement disorder*
 MM + Late inward Na blocker: *Dantrolene*
Direct guanyl cyclase activator: Vereciguat
 Calcium sensitize: Pimobendan/ Levosimendan } CHF
 Direct myosin activator: Omecamtiv
 Mexicamptan → HCM

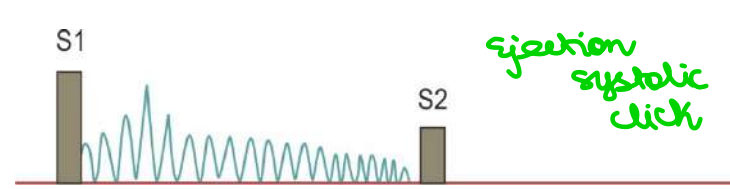
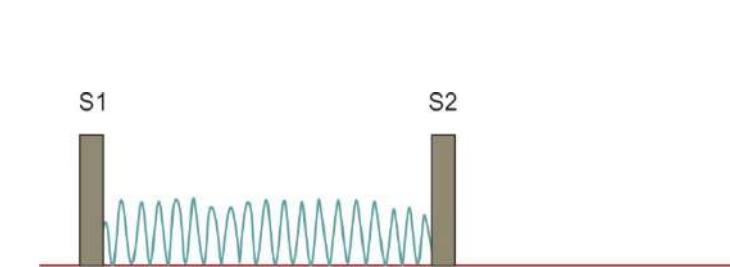
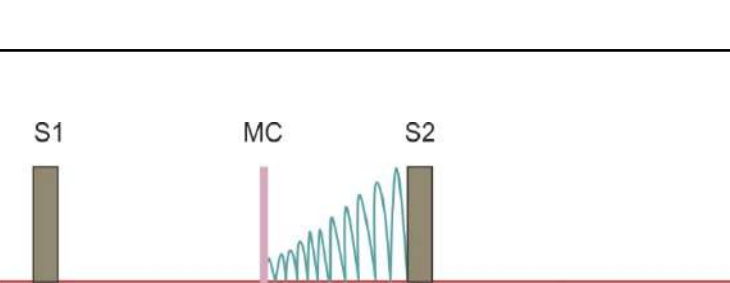
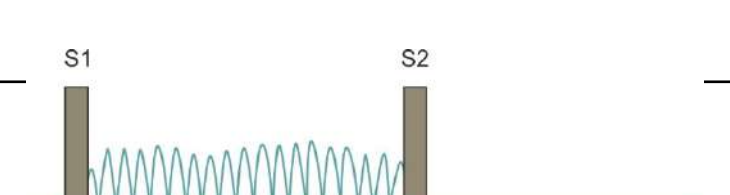


Bainbridge reflex *Tachyk* (Bridge re Tachyk)
 Bezold-Jarisch reflex *Serotonin, capsaicin ⇒ Bradyk, Hypoth, Apnea*
 J reflex *Peritoneal stretching ⇒ Pneumoperit (CO2)*

Postural hypotension:
 SBP-DBP-within 3min of standing
 20 10

colchicine → Diarrhea

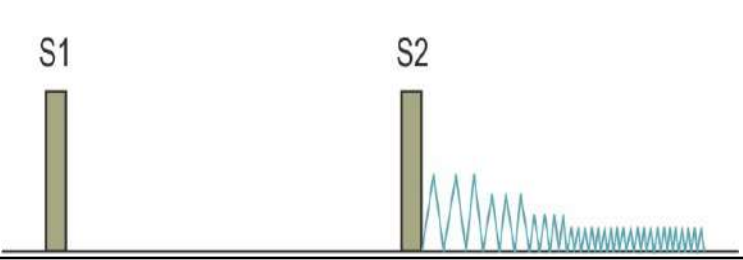
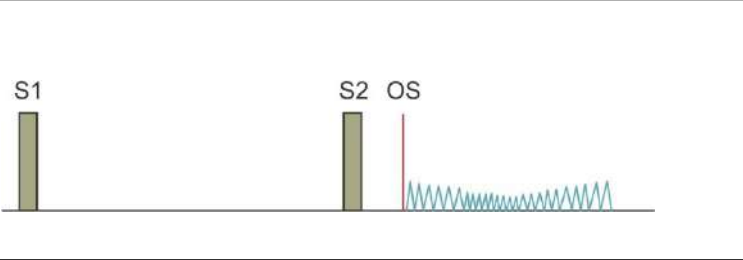
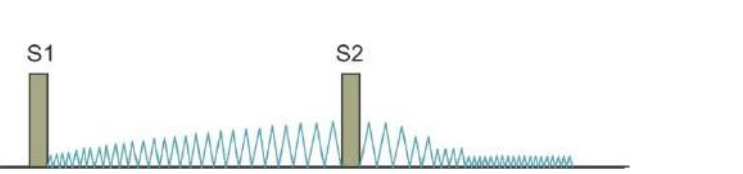
Murmurs

Systolic	
	<p>Crescendo-decrescendo ejection murmur, loudest at heart base, radiates to carotids AS</p>
	<p>Holosystolic, high-pitched “blowing” murmur</p> <p>MR: Loudest at <u>apex</u>, radiates toward axilla</p> <p>TR: loudest at <u>tricuspid area</u></p>
	<p>Late crescendo murmur with midsystolic click (MC) that occurs after carotid pulse</p> <p>Best heard over apex MVP</p>
	<p>Holosystolic, harsh-sounding murmur</p> <p>Loudest at tricuspid area VSD</p>

Benign flow murmur due to increase CO in peds - *Still murmur*

Early systolic in TR on deep inspiration *Caravello's*

Murmurs

Diastolic	
	Early diastolic, decrescendo, high-pitched “blowing” murmur AR
	Follows opening snap (OS) MS Delayed rumbling mid-to-late murmur (↓ interval between S2 and OS correlates with ↑ severity)
Continuous	
	Continuous machine like murmur, best heard at left infraclavicular area PDA

Early diastolic murmur in PAH

Craham Steel Murmur

Mid-diastolic, rumbling, low-pitched in AR

Austin Flint

Mid-diastolic, short, ARF

Coxey Comb Murmur

Antiarrhythmic drugs

IA: K⁻: Quinidine, Procainamide, Disopyramide

IB: K⁺: Lignocaine, Phenytoin

IC: K^{no}: Flecainide, Propafenone

II β Blocker

III: Amiodarone, Ibutilide, Dofetilide, Sotalol

IV CCB

Adenosine: Max dose

max initial
6 → 12 → 12
mg mg mg

max dose: 30mg
max initial: 6mg
central line: 3mg max

Dose with theophylline / caffeine: 12mg initial

↳ adenosine \ominus ⇒ Diabetes

↳ maculodonsa (RAL-DCT)

Anti-obesity drugs:

Phentermine symp \oplus

Bupropion NDRI

Zonisamide topiramate → Stopiramate ACG Stoner

Liraglutide / Semaglutide GLP 1 \oplus

Tirzepatide GLP/GIP

Orlistat, Cetilistat Lipase \ominus

Setmelanotide Melanocortin \ominus

Na⁺ \ominus → SHIP → anticholinergic - CI in glaucoma

Quinidine
Disopyramide

↳ Vertigo Keratopathy, Bull's eye maculopathy, Diarrhoea

↳ DOC: Digoxin toxicity

↳ in WPW syndr → causes Bronchospasm
↳ RF ablation CI in Asthma

IA & III → QT prolongation

↑ Na⁺ → Adenosine
aff Vc

LAP low: PNH, CML

Pancytopenia with HSM - Aplastic anemia (Dry Tap)
MDS

Pancytopenia with HSM + Myelofibrosis
Leukemia

Hypodiploidy/ t(9;22)/ t(4;11) Bad ☹️

CYCLIN D1+ / SOX 11+ Mantle → t(11;14)
CD5+, 23-

Idarucizumab: Dabigatran
II ⊖

Andexanet alfa:
Xa ⊖

Ciraparantag:
II & X ⊖

Tumor lysis: K↑, Ca↓, uric acid ↑
PO4 ↑

Hydration & Alkaline

Massive BT: Ca↓, Mg↓, K↑ > ↓
Metabolic Alkalosis > Acidosis

PRBC: 2-6°C, SAAM: 6 wks

FFP / Cryoppt: -30°C → 1yr

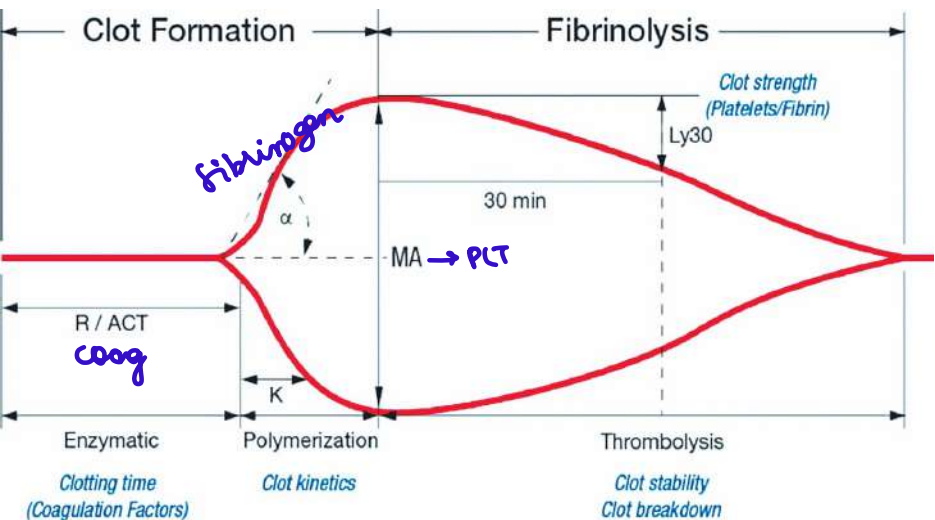
Platelet:
24-28°C

Factor 8-VWF, 13
Fibrinogen

Sd
PLT aggregates

Hair cell Leukemia → DOC: Cladribine
TRAP
BRAF
Dry Tap
Annexin A1

Annex V₂
Apoptosis



Leucocyte filter:
↓ CMV
↓ Fibrin

Blood screened → PROSPECTIVE prevention

Hep B/C
HIV
Syphilis
Malaria
X Dengue, X CMV

Acid phosphatase ⊕ : Tcell ALL ☹️

PAS +ve (dot & Blast) : ALL

MPO / Sudan Black B : AML

NSE → Monoclonal AML - M4 (AML)
M5

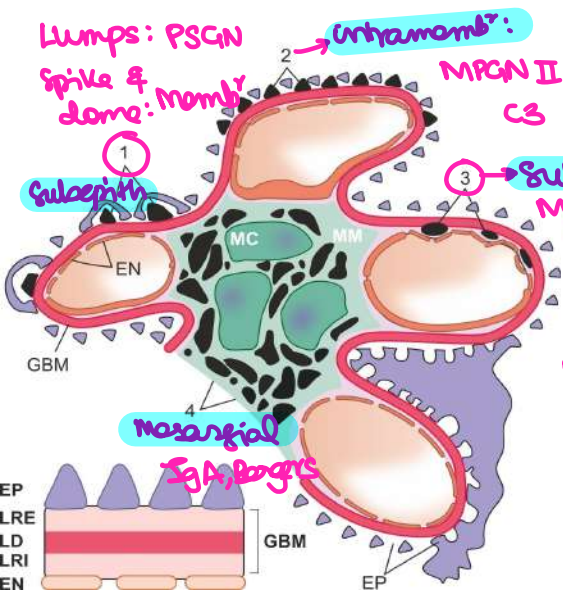
⊕ cytoblast - AML - M6

t(14;18) - Follicular (BCL-2)

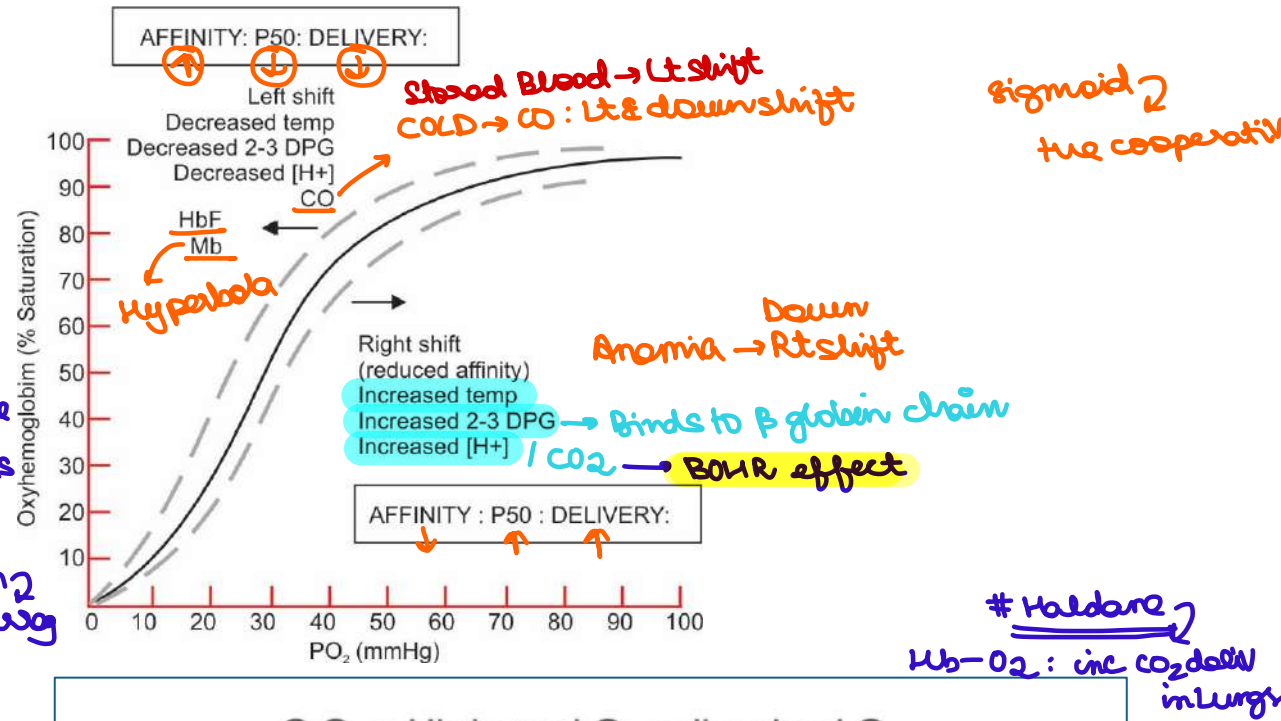
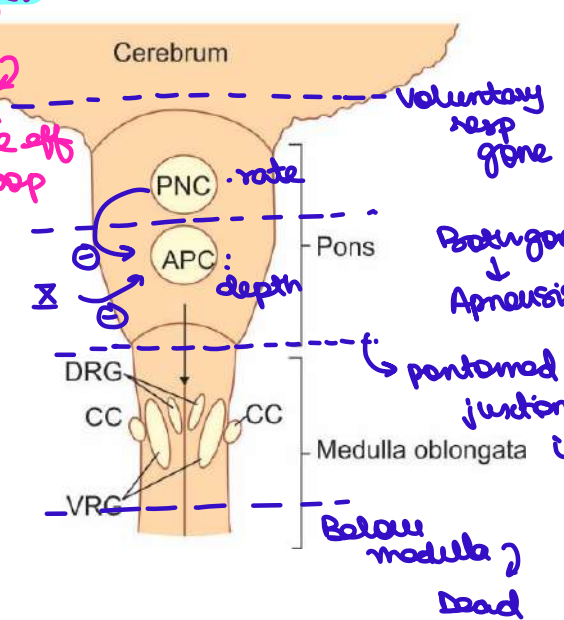
t(11;18) - Marginal zone (MALTOMA)

t(2;8)
8;14 } - Burkitt
8;22

2;8 → AML-M2
inv16 → AML-M4
M7 → Downis, Dry Tap



Surfactant: Compliance ↑
Surface tension ↓



$$C_aO_2 = \text{Hb-bound } O_2 + \text{dissolved } O_2$$

$$C_aO_2 = (O_2 \text{ carrying capacity} \times S_aO_2) + (P_aO_2 \times 0.0031)$$

1.34 x Hb x sat

RPGN
 Linear: anti GBM
 Granular: deposits
 Pauci-immune: ANCA
 ← WC → C ANCA
 ← MPA → P ANCA

- Causes of NAGMA**
- Renal tubular acidosis
 - Diarrhea
 - Carbonic anhydrase inhibitors
 - Ureteral diversion (e.g., ileal loop)

CURB-65 Scoring

CRB-65: cyanide →

Symptom	Points
Confusion	1
Urea: BUN > 19 mg/dL (> 7 mmol/L)	1
Respiratory rate ≥ 30 breaths /min	1
Systolic BP < 90 mm Hg or diastolic BP ≤ 60 mm Hg	1
Age ≥ 65 years	1

CO pos → main Hb → cyanide → anemic

(N) cytotoxic anoxia

OP: 0
 IP: 1-2
 ICU: 3-4

IL-4 inhibitor:
Dupilumab

IL-13 inhibitor:
Tralokinumab
Lebrikizumab

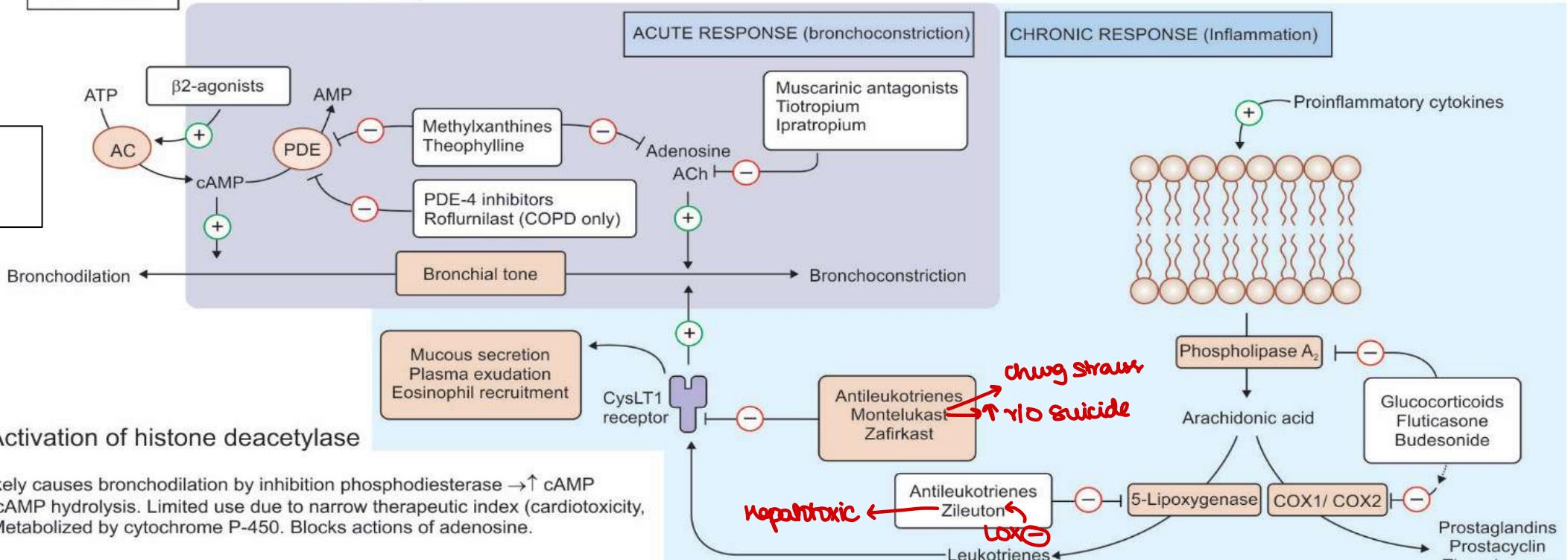
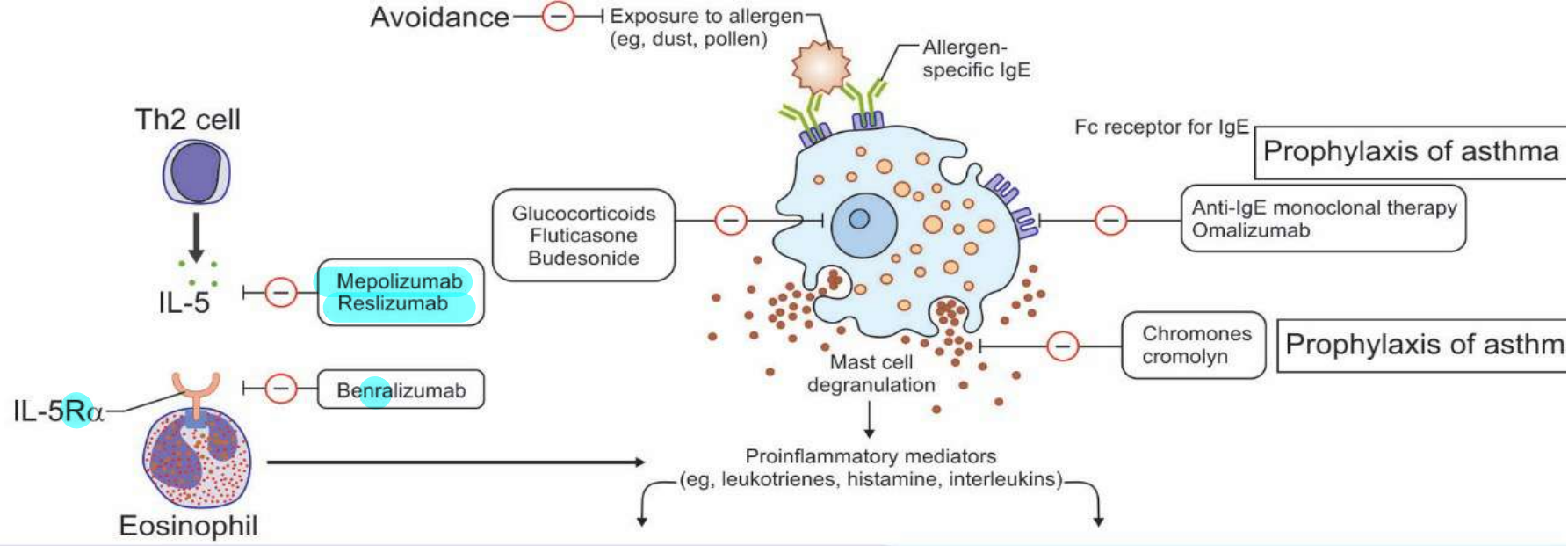
Salbutamol
Terbutaline
Salmeterol
Formoterol

GINA 2021: DOC-
Formoterol + ICS

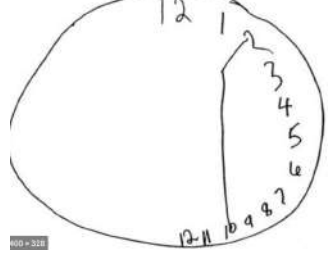
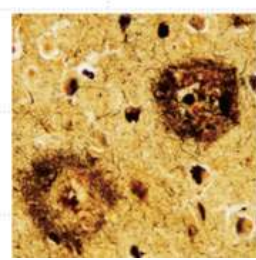
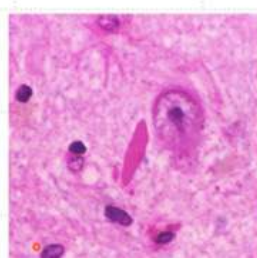
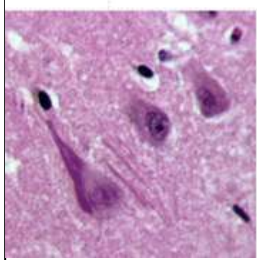
fast & long acting

+Activation of histone deacetylase

Theophylline—likely causes bronchodilation by inhibition phosphodiesterase → ↑ cAMP levels due to ↓ cAMP hydrolysis. Limited use due to narrow therapeutic index (cardiotoxicity, neurotoxicity); Metabolized by cytochrome P-450. Blocks actions of adenosine.



Apo E2 : 😊 **Alzheimers** →
 Apo E4 : 😞
 Mild: Donepezil **ADNE**
 Severe: Memantine **NMDA**
 Lecanemab, Aducanumab
 Transdermal patch: **Rivastigmine**
 Rotigotine patch: **Parkinsons**



NFT
 Flame cells
 Tau
 ↓
 Pick

Actin accum
 Hirano Bodies

Neuritic plaque
 ↓
 αB
 Bielschowsky stain

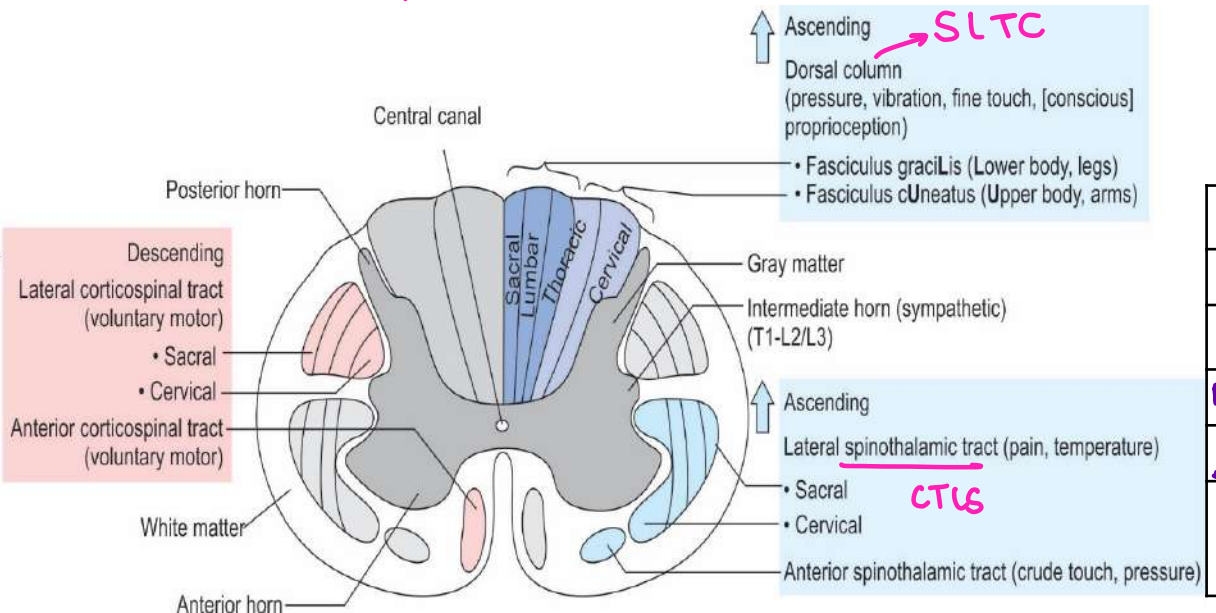
Non Dom parietal → Hemineglect

Perivascular: **Ependymoma**
 Homer Wright: **MB / Surgery**
 Flener-Wintersteiner: **Retinoblastoma (Tum)**

1. Adult spinal cord-Lower border of L1
2. Spinal cords in infants-Upper border of L3
3. A/D/Subarachnoid space-Lower border of S2
4. Filum terminale-Coccyx

Brown seq → il & dorsal cl & spinothalamic

Local anaesthetic: Ag and Ad >> Aa and Aβ >> B >> C
 Pressure: **A > B > C**
 Hypoxia: **B > A > C**



A	Alpha	Proprioception; somatic motor
	Beta	Touch, pressure (after exam - massage)
	Gamma	Efferent to muscle spindles
	<i>Myoepaxm</i> Delta	Fast Pain, temperature (cold)
B		Preganglionic autonomic (Telanus: paroxp)
C		Slow Pain, temperature (warm), Postganglionic sympathetic

CHHOTI COPY REVISION: PART 5

SURGERY / ANAT/ BIOCHEM

Dr. Shreya

ANATOMY

Muscles of mastication

Protrusion: LP + MP

Retraction: Temporalis

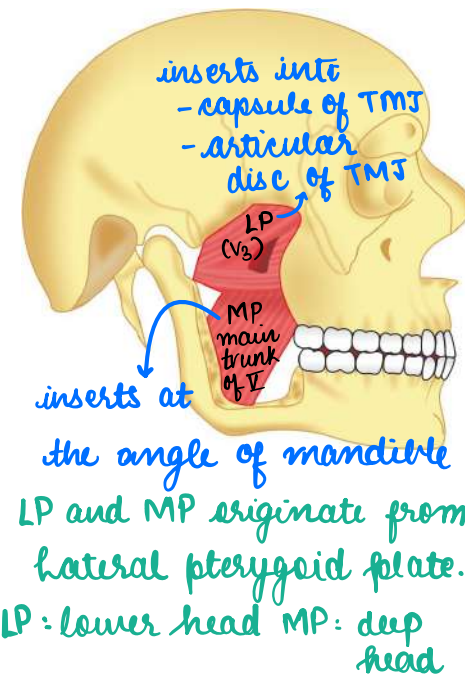
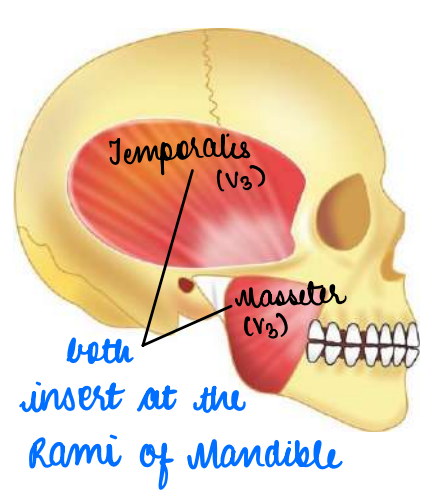
Elevation: Masseter, MP,
Temporalis

Depression: LP ~~~~~ continues as articular disc of TM Joint

Side to side: MP + LP → c/L side mandibular
movement.

↳ dysfunction: Lockjaw
yawning

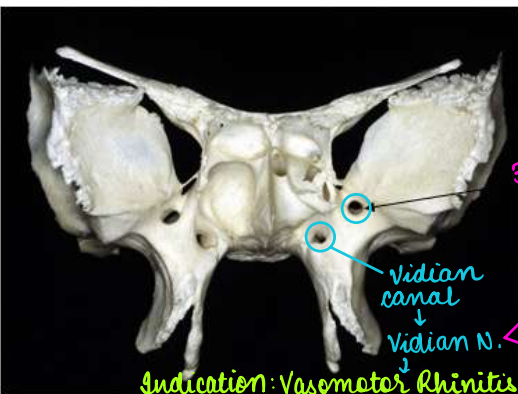
Cranial nerve nucleus (GVE)	Preganglionic parasympathetic	Ganglion	Postganglionic parasympathetic	Structure
Edinger-Westphal nucleus	CN III	Ciliary ganglion	Nasociliary nerve Short ciliary nerves	Ciliary muscles <i>Embryo: NEC</i> <i>Light reflex</i>
Superior salivatory nucleus	CN VII <i>GG - GSPN</i>	Pterygopalatine ganglion (GSPN) Submandibular ganglion <i>Chorda tympani (7^m)</i>	Maxillary nerve (V2) - Zygomatic branch Lingual nerve (V3)	Lacrimal gland Sublingual and submandibular glands
Inferior salivatory nucleus	CN IX	Otic ganglion	Auriculotemporal nerve	Parotid gland <i>Frey's syn.</i>
Dorsal motor nucleus	CN X	-	Vagal Nerve (Arnold's nerve)	Heart, lungs upper GI <i>↓ syncope</i>



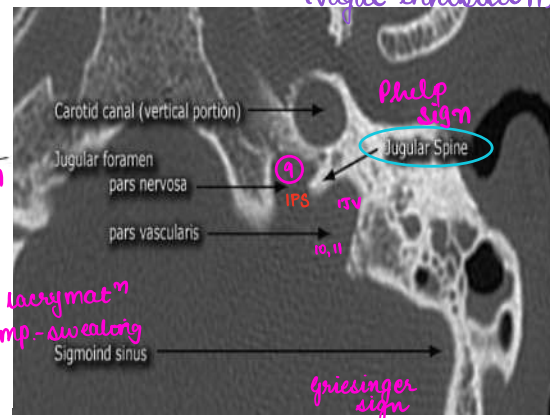
Buccinator by CN 7

Taste: NTS

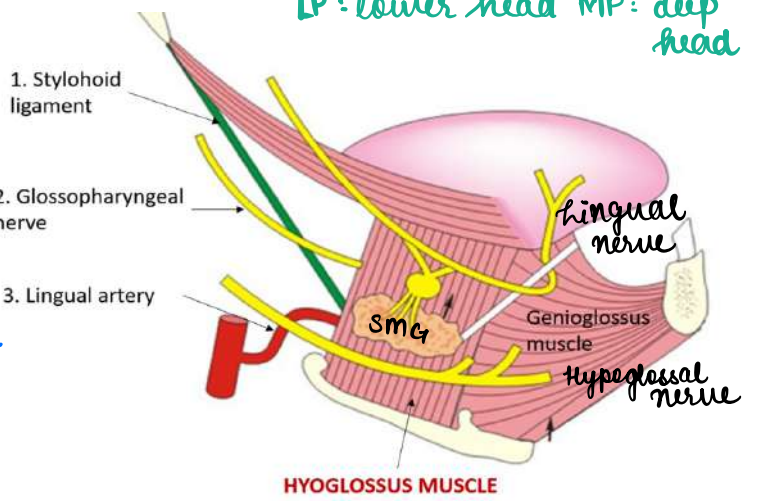
Immersion syn: vasovagal syncope (vagal inhibition)

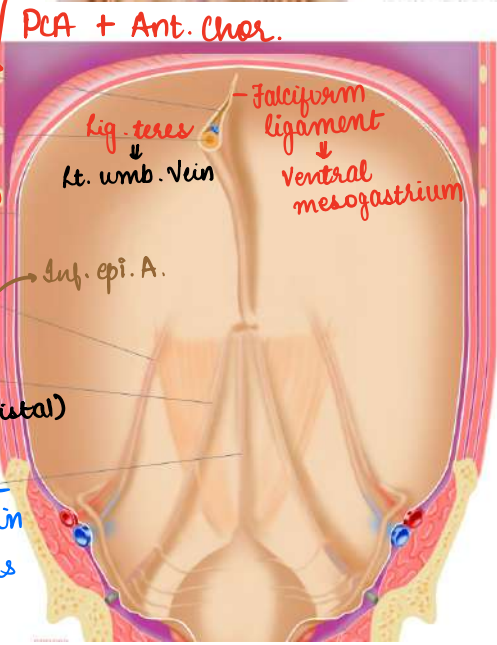
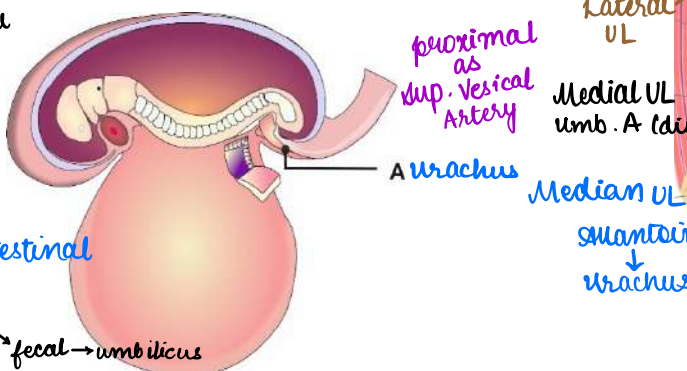
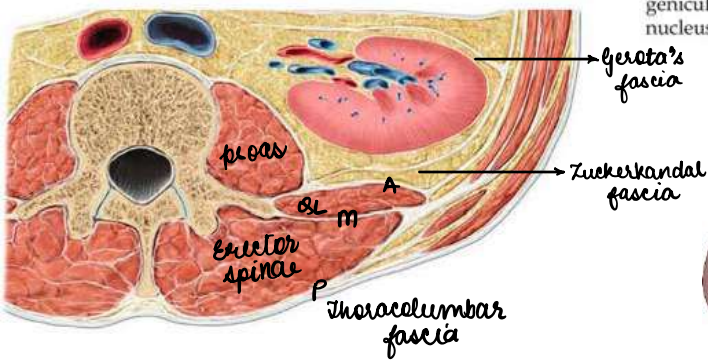
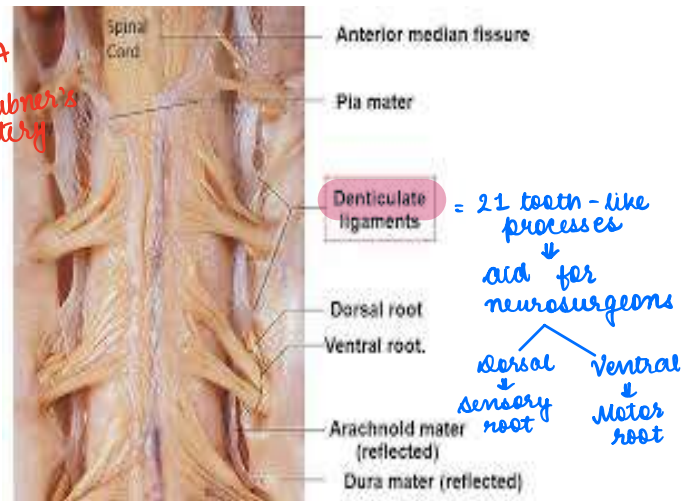
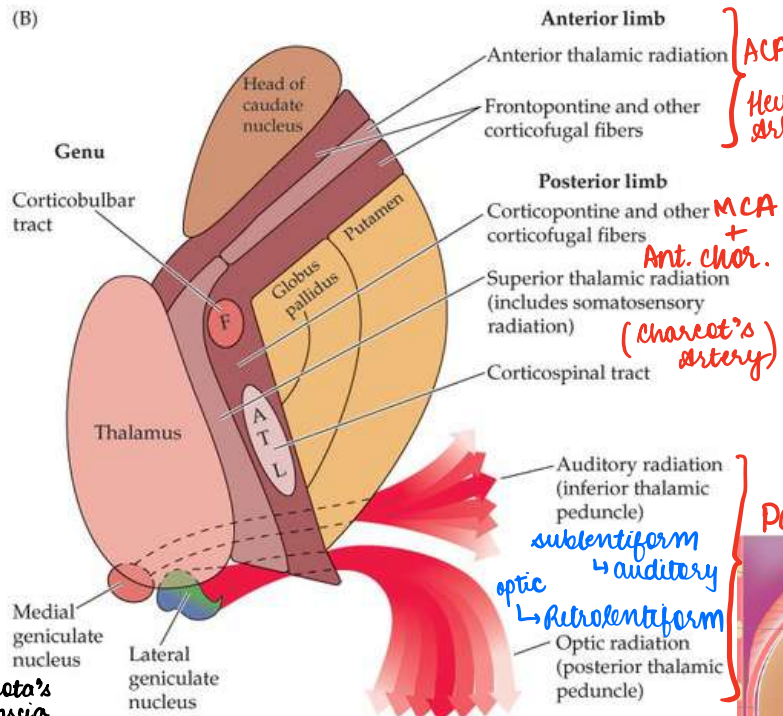
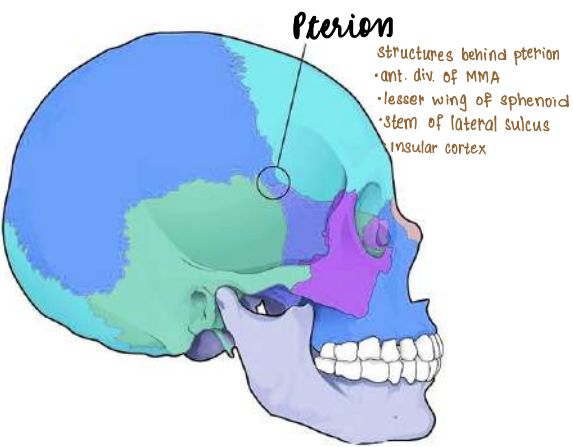


GSPN - PS laryngot^m
DPN - symp - sweating



structures deep to posterior border of Hyoglossus

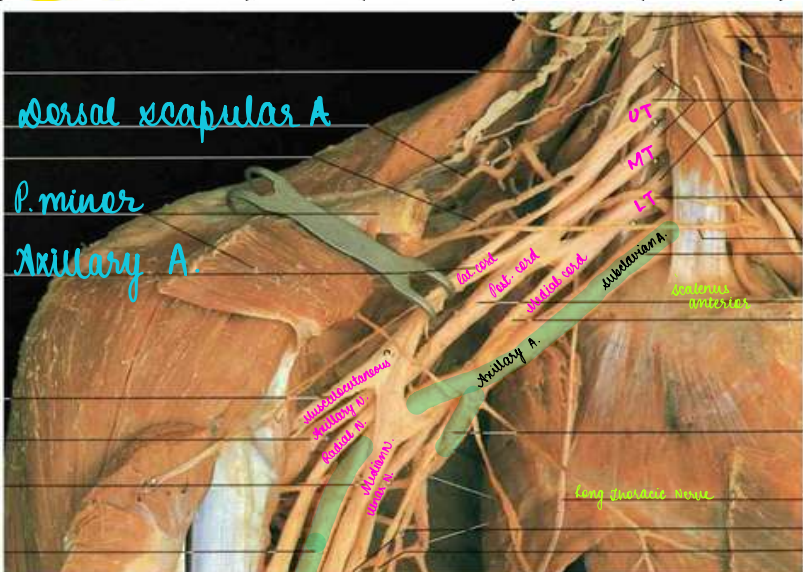
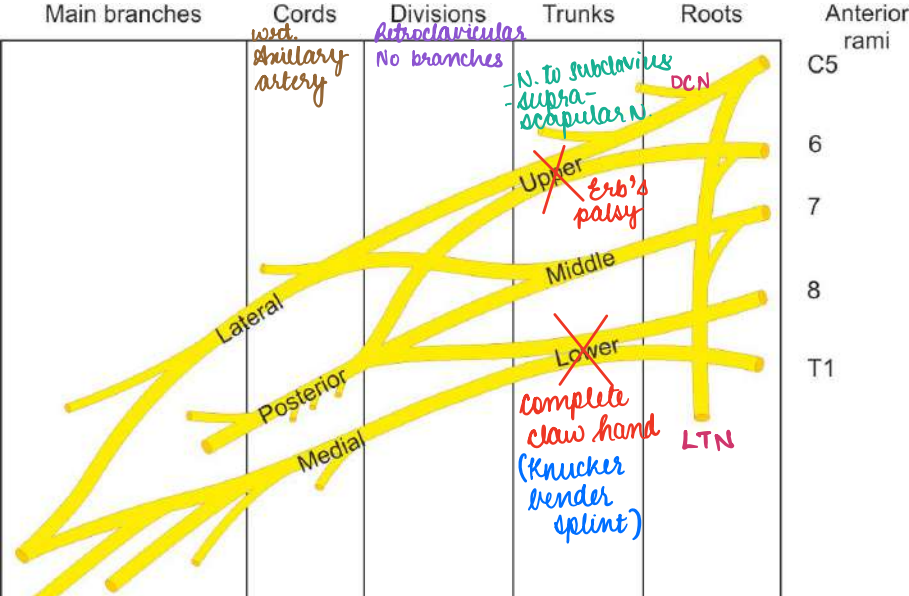




PCA + Ant. Chor.

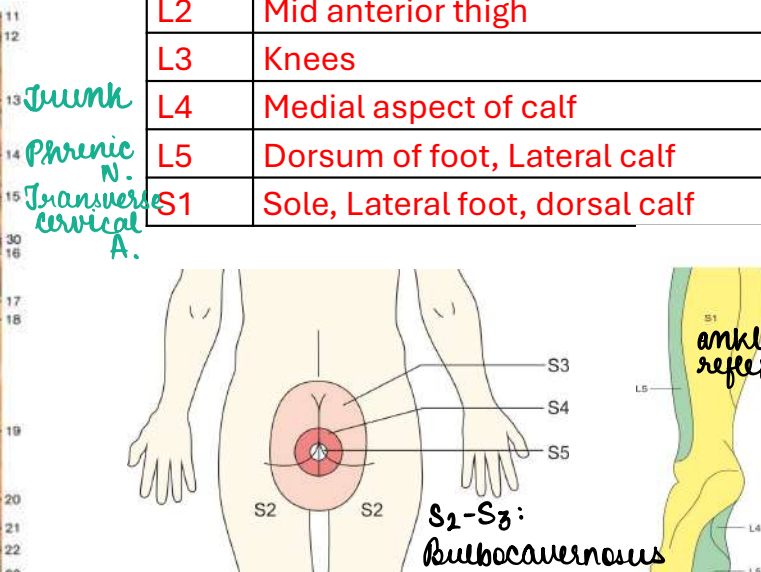
- PEG *Mesonephric Duct* : Para-oesophore, Epoo-phoron, Gartner duct
- PAT *Mullerian derivatives*: Prostatic utricle, Appendix, Testis
- Anterior belly digastric **V₃ (1st)** Posterior belly **CN 7 (2nd arch)**
- All tongue muscles are supplied by **12th** except **palatoglossus (CN X / ph. plexus)**
- All palatal muscles are supplied by **Ph. plexus** except **Tensor veli palatini (V₃)**
(SLN-X)
- All pharyngeal muscles are supplied by **Ph. plexus** except **Cricopharyngeus (RLN), Stylopharyngeus (CN 9)**
- All laryngeal muscles are supplied by **RLN** except **Cricothyroid (ELN)**
- Short head of biceps, Coracobrachialis **Origin: Coracoid process (P. minor inserts here)**
(ataxistic epiphysis)
- Reticulin fibres absent in: **Thymus**
- Ligamentum flavum rich in: **Elastin**
- Dense irregular collagen in: **Dermis**
- LIP **External oblique derivatives**
 - ↳ **Lacunar**
 - ↳ **Inguinal**
 - ↳ **Pelvic**
- Thyroid moves during deglutition: **Pretracheal fascia**
- Prevents upward extension: **Sternothyroid, Sternohyoid**
- Prevents downward extension into mediastinum: **Ligament of Berry**
- Between IO and TA: **Neurovascular bundle**



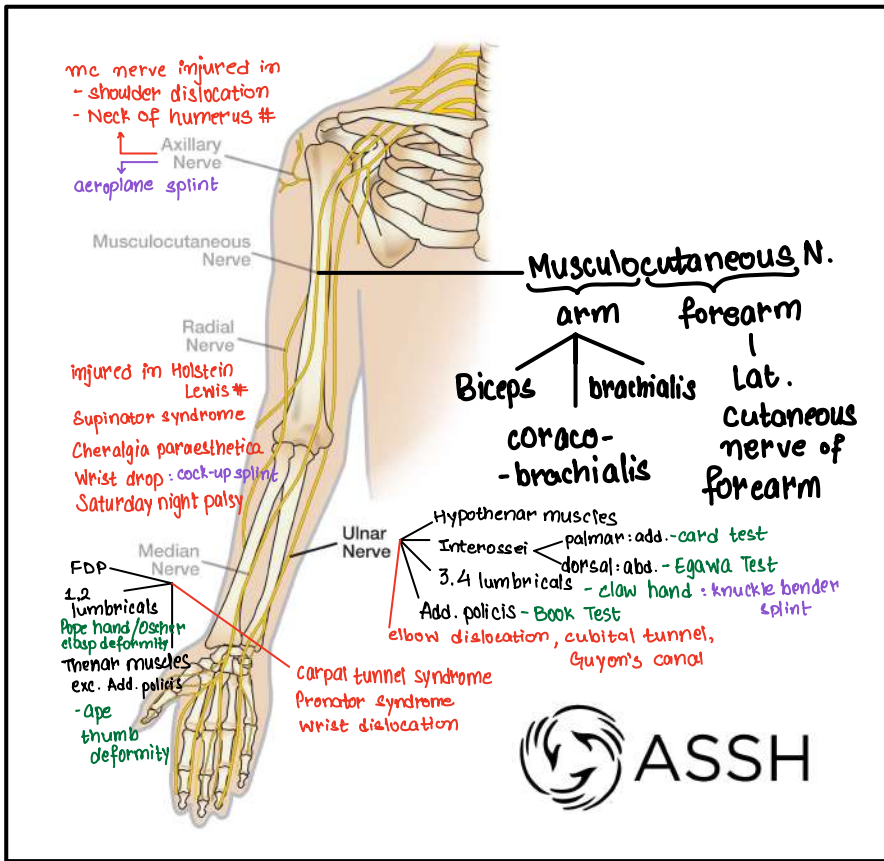


Nerve	Dermatome
C5	Lateral antecubital fossa
C6	Thumb
C7	Middle finger
C8	Little finger
T1	Medial antecubital fossa
T2	Apex of axilla
T4	Nipples
T6	Xiphoid process
T10	Umbilicus
T12	Inguinal ligament
L2	Mid anterior thigh
L3	Knees
L4	Medial aspect of calf
L5	Dorsum of foot, Lateral calf
S1	Sole, Lateral foot, dorsal calf

Changes After Birth: Closing of Shunts		
Shunt	Functional closure	Anatomical closure
Ductus arteriosus	2-3d (10-15hrs)	2 - 3 wks
Foramen ovale	Within mins	One year
Ductus venosus	Within mins	3 - 7 days



Anterior rami
C5
6
7
8
T1
11
12
13
14
15
16
17
18
19
20
21
22
23



Rotator cuff muscles (SITS)

- Supraspinatus (Abduction)
- Infraspinatus (External rotation)
- Teres minor (External rotation)
- Subscapularis (Internal rotation)

<p>Median nerve</p> <p>Ape thumb deformity</p> <p>Pope's hand</p> <p>Pen Test</p> <p>Pronator syndrome</p>	<p>Ulnar nerve</p> <p>Card Test</p> <p>Egawa Test</p> <p>Book Test</p> <p>Cubital Tunnel</p>
---	---



- Incus-stapes
- Hip
- Shoulder
- Talo-calcaneo-navicular

Ball and socket

- Malleus-incus
- 1st CMC
- Calcaneo-cuboid
- Sterno-clavicular

Saddle

Atlanto-occipital

Ellipsoid (Yes)

Atlanto-axial

Pivot (No)

TMJ
Knee

Condylar

Ankle
Elbow
IP

Hinge

- Intercarpal
- Intertarsal
- Acromio-clavicular
- Costo-transverse
- Costo-vertebral
- Sterno-costal except 1st

Plane joint

fibro-cartilage

Interosseus memb.

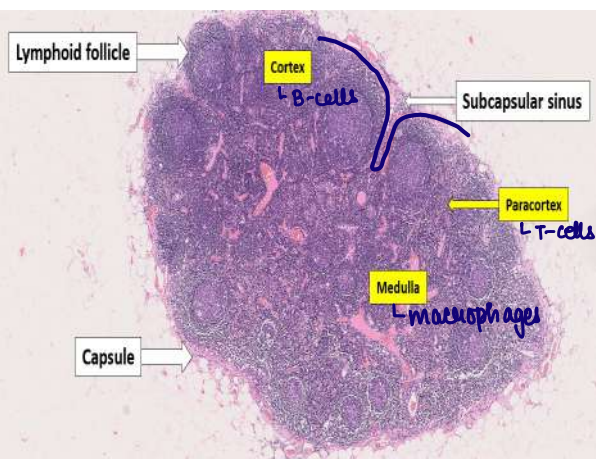


1st fibrous



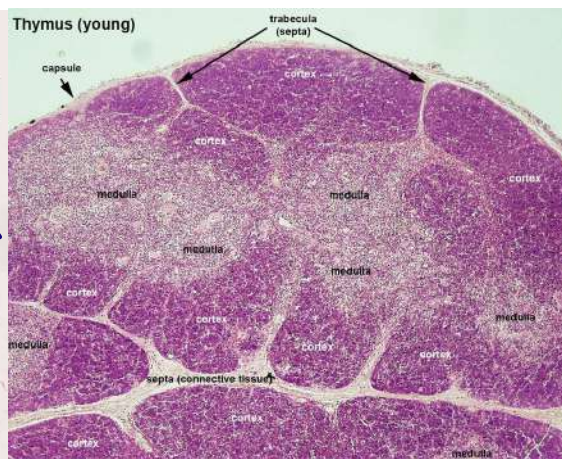
syndesmoses

	Conus medullaris syndrome	Cauda equina syndrome
Vertebral level	L1-L2 <i>(UMN + LMN)</i>	L2-sacrum <i>(LMN)</i>
Spinal level	Sacral cord segment and roots	Lumbosacral nerve roots
Presentation	Sudden and bilateral	Gradual and unilateral
Radicular pain	Less severe	More severe
Motor strength	Symmetrical, less marked hyperreflexic distal paresis of LL, fasciculation	More marked asymmetric areflexic paraplegia, atrophy more common
Reflexes	Ankle jerks affected	Both knee and ankle jerks affected
Sensory	Localized numbness to perianal area, symmetrical and bilateral	Localized numbness at saddle area, asymmetrical, unilateral
Sphincter dysfunction	Early urinary and fecal incontinence	Tend to present late
Impotence	Frequent	Less frequent



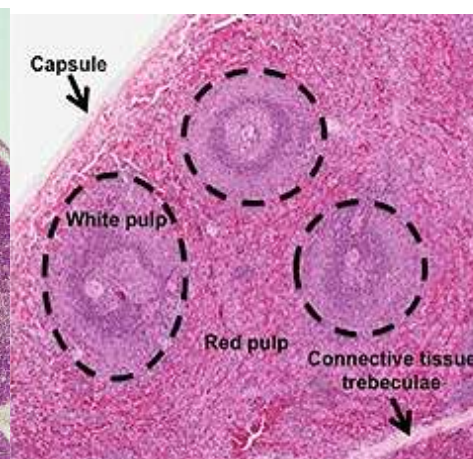
Lymph node

- subcap. sinus
- cortex - medulla
- follicles



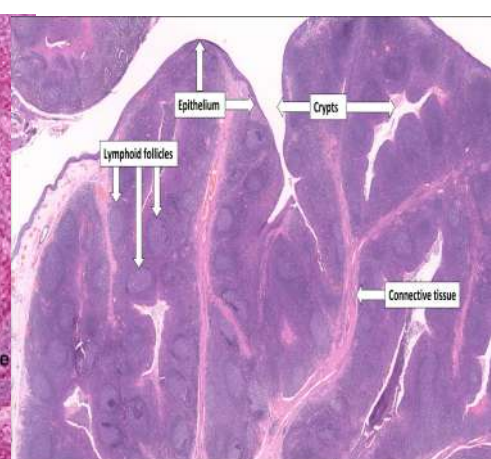
Thymus

- septations
- cortex - pale medulla
- NO follicles



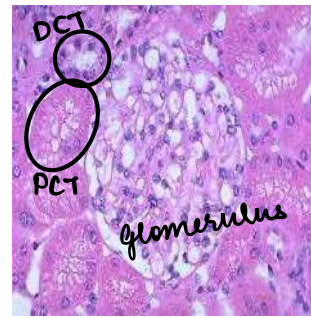
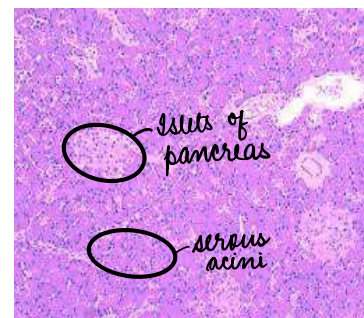
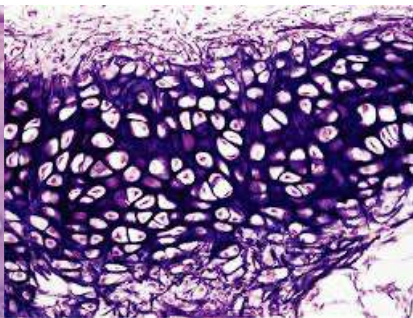
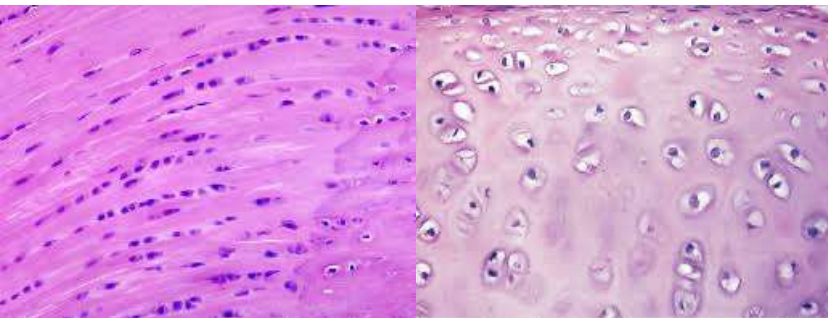
Spleen

- NO cortex/medulla
- Red/white pulp



Tonsil

- crypts
- NO cortex/medulla



Rose of chondrocytes Fibrocartilage (col I)

Hyaline cartilage (col II)

Elastic cartilage

Pancreatic Islet cells

Kidney

IVD, symphysis, Labrum, articular disc

Cricoid, thyroid, arytenoid, articular, trachea

Epiglottis, Cuneiform, Corniculate, ET, Pinna, EAC

No perichondrium: Fibrocartilage, Articular cartilage of Hyaline cartilage

BIOCHEMISTRY

• GLUT-1 / 3 *Brain, kidney, placenta (+ erythrocytes have GLUT-1): for glucose* ^{high affinity}

• GLUT-2 *Insulin dependent: liver, pancreatic cell, SI* → *glucokinase (↑ Km)*

• Insulin mediated GLUT 4: *Heart and skeletal muscle, adipose tissue*

• Basic: *Arginine > Lysine > Histidine*

• Ketogenic only: *Leucine, lysine*

• Branch chain: *VIL - Valine, Isoleucine, Leucine (Thiamine)*

• Aromatic / UV light maximum: *Tryptophan: derivatives ~ Niacin, melatonin, Serotonin*

• Universal methyl donor: *SAM*

• 21/22nd amino acids *Selenocysteine (UGA) / Prollysine (UAG) - Co-translational modification*

• Glycine + arginine + methionine: *Creatine (Creatinine is byproduct of creatine)*

• Glycine + cysteine + glutamate: *Glutathione*

• Glycine + Glutamine + Aspartate: *Purines*

• Glutamine + aspartate: *Pyrimidine (CPS-II)*

• Telomerase: TTAGGG. RNA dependent DNA polymerase *NOT Ribozyme ~ Reverse Transcriptase*

• TEMPLATE: $5' \text{ATGATCT} 3'$

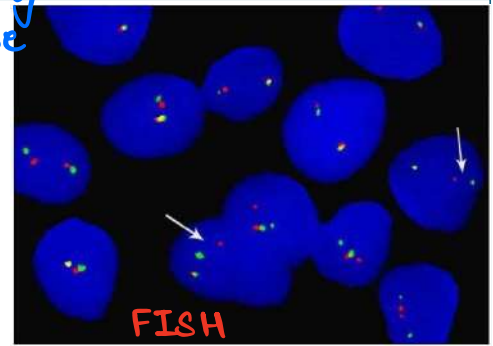
• CODING: $3' \text{TACTAGA} 5'$

• mRNA $5' \text{AGAUCAU} 3'$

• Pasteur effect: Inhibition of glycolysis by O₂ *(due to reduced AMP/ATP ratio)*

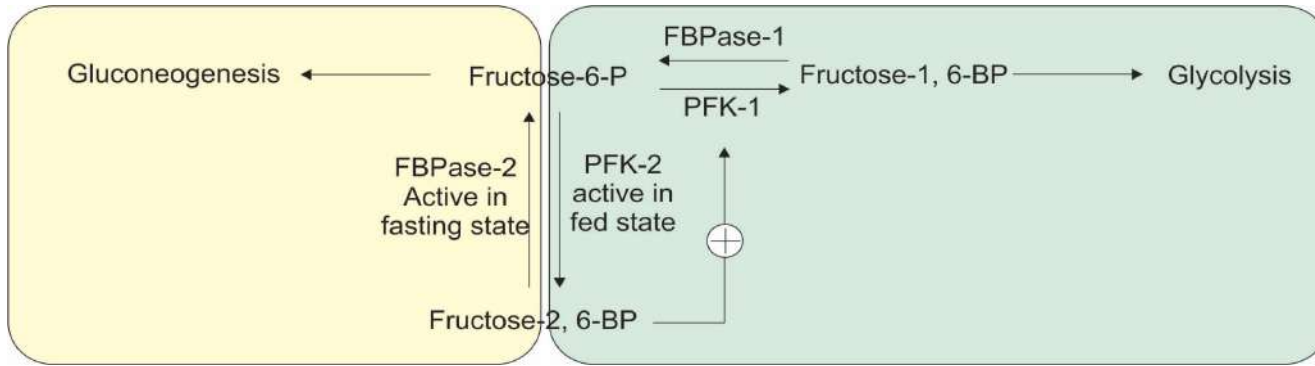
• Crabtree effect: Lactic acidosis if glucose concentration increased in presence of O₂ *eg: galactosemia, Fructose intolerance,*

• HC LA HSL: - Insulin / PG E1 / Niacin



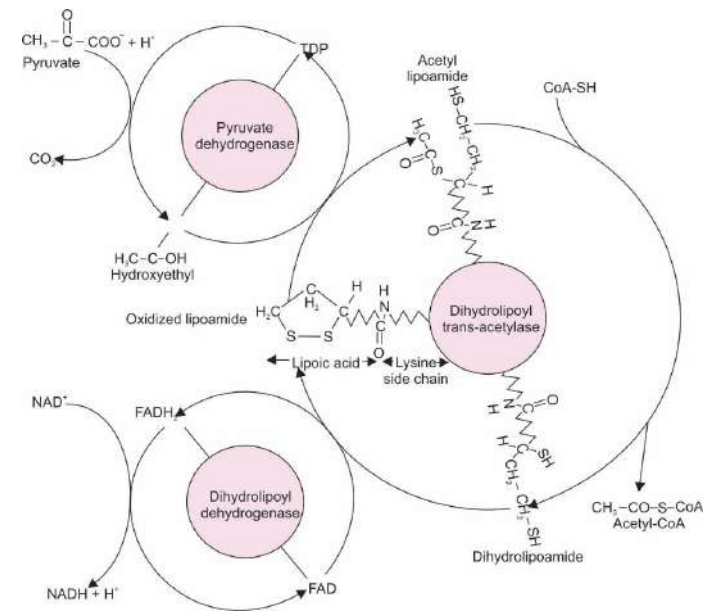
best for CML (BCR-ABL)
- *Microdeletion*
- *Translocation* - *amplification*

Von-Gierke's ds.



Positive allosteric regulators of PFK-1: Fructose-2,6-BP
 AMP
 Negative allosteric regulators of PFK-1: ATP
 Citrate
 Protons

Thiamine is a co-factor for:
 i) α -ketoacid DH
 ii) α -KG-DH
 iii) PDH
 iv) Transketolase (RBC) - assay



PDH Complex

3 enzymes

- Pyruvate dehydrogenase
- Dihydropyruvate transacetylase
- Dihydropyruvate dehydrogenase

5 co-factors

- Thiamine (B₁)
- FAD (B₂/Riboflavin)
- NAD (B₃/Niacin)
- CoA (B₅/Pantothenic acid)
- lipoic acid (inhibited by Arsenite)

• Deamination: C → U Methylation U → T *FA deficiency*

• Liver cant utilize ketone bodies: *lacks Thiophorase*

• Sodium benzoate, sodium phenylacetate, sodium phenylbutyrate *Nitrogen scavenger*

• 3H syndrome *Hyperammonemia, ↑homocitrulline, ↑ornithinemia*

• NADH CoQ reductase (I) : *Rotenone, Metformin, Phenobarbitone*

• Succinate CoQ Reductase (II) : *Malonate (Iron)*

• Cyt C reductase (III) : *Antimycin A*

• Cyt C oxidase (Cu) (IV) : *-Azides, cyanide, CO, H₂S*

• ATP synthase (V) : *Oligomycin* ATP transporter : *Attractyloside*

• Most abundant: *Chondroitin sulphate*

• GAG with no protein linkage, no sulphate: *Hyaluronic acid*

• Cell migration during morphogenesis, wound repair: *Hyaluronic acid*

• GAG with no uronic acid, Corneal transparency: *Keratan sulphate*

• Sclera, Atherogenic (LDL binding): *Dermatan sulfate*

• LPL on endothelial surface, Plasma membrane receptor, GBM charge selectiveness: *Heparan sulfate*

• Carnitine shuttle (*Methionine, lysine*) *FA*

• Citrate shuttle *Acetyl CoA*

• Malate shuttle *OAA*

• Arginine not lipotropic (choline lecithin methionine)

• Avoided in fish odour syndrome : *Choline*

Deamination reactions:

Cytosine → uracil

Adenine → hypoxanthine

Guanine → xanthine

5-methylcytosine → thymine

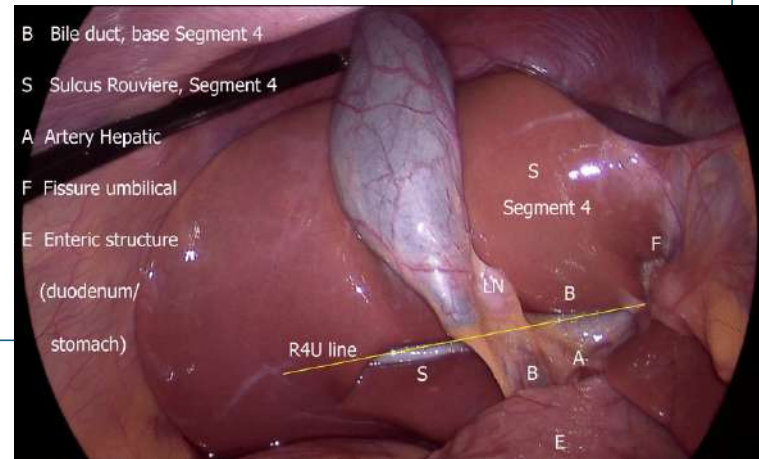
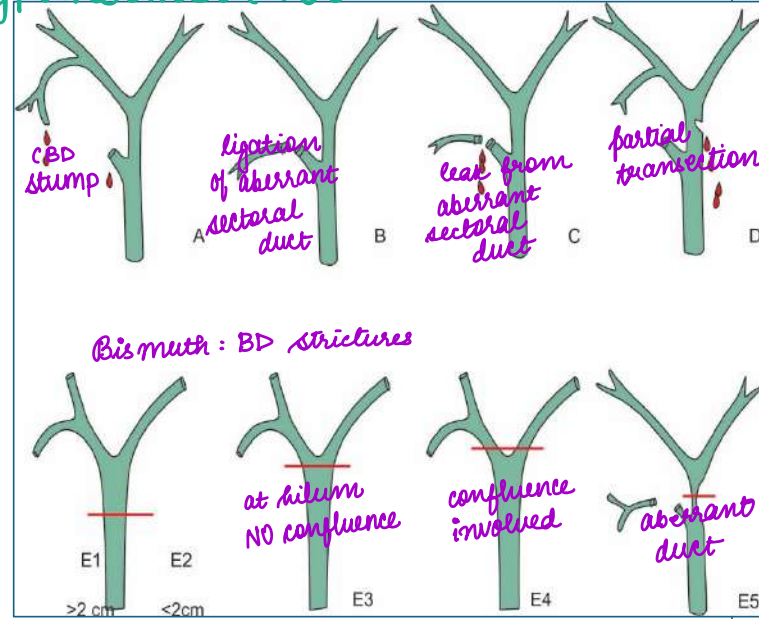
SURGERY

- Dohlman *Zenker's diverticulum*
- Heller *Achalasia cardia*
- Foker *Type A TEF*
- Kimura duodeno-duodenostomy *Duodenal atresia*
- Ladd *Malrotation of gut in neonates*
- Bishop Koop *Meconium ileus cystic fibrosis (X-ray)*
 - ↳ No air fluid levels
 - ↳ soap bubble appearance (Neuhauser sign)
- Bascom / Karydakos / Limberg *Pilonidal sinus*
 - ↳ Rx: gastrograffin enema (2 attempts)
- Bianchi / STEP *short Bowel syndrome (Teduglutide)*
- TAD *Perineal approach of Rectal prolapse*
- Strong procedure : *SMA syn. / last syn. / Wilkie syndrome*
- Mattox: *left medial rotation (aorta)*
- Kocher / Cattle-Brasch *right medial rotation (IVC)*
- Hadfield procedure *Duct ectasia*
- Sistrunk procedure *Thyroglossal cyst*
- Kasai procedure *EHBA*
- Puestow / Begar / Frey *Chronic pancreatitis* → longitudinal PJ

Damage Control Surgery (DCS)	
I	1 st exploration: Abbreviated laprotomy control haemage and limit contamination
II	ICU care: Treat coagulopathy and stabilise pt.
III	Re-exploration: Correct the anatomy
IV	Definitive: Abdominal closure

- Damage control surgery *Met. acidosis (pH < 7.2), coagulopathy, hypothermia (< 35°C)*
- Refeeding syndrome $\downarrow K^+$, $\downarrow Mg^{2+}$, $\downarrow PO_4^{3-}$
- Brodie tredelenburg / Morrissey/ Schwartz *SFT*
- Pratt/ Perthes *DVT*
- Fegan: *Perforator incompetence*
- Stewart-Way: *Lap Bill duct*
- CBD + Vascular: *Hannover*
- FNAC thyroid adequate: *6 clusters, 10 cells each*
↳ before anaes.
- Sign in-time out-sign out *before pt. leaves*
↳ before incision
- MESS: *(ELISA)*
- Beahr's triangle *RLN injury*
- TPM *luminal A: best prognosis*
 - Subular*
 - Papillary*
 - Mucinous*
- HAL: *seminoma markers: hCG / AFP / LDH*

hypothermia (< 35°C)





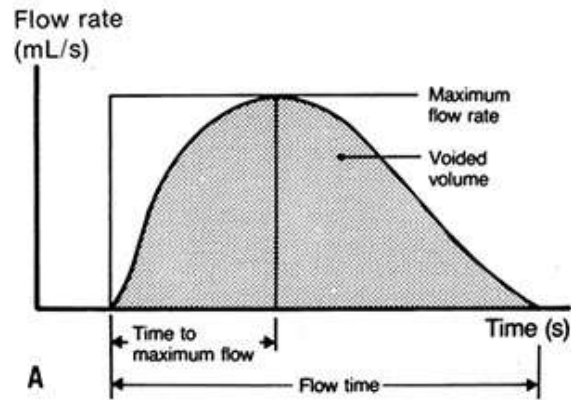
Retrocaval ureter

min: 200 ml urine voided

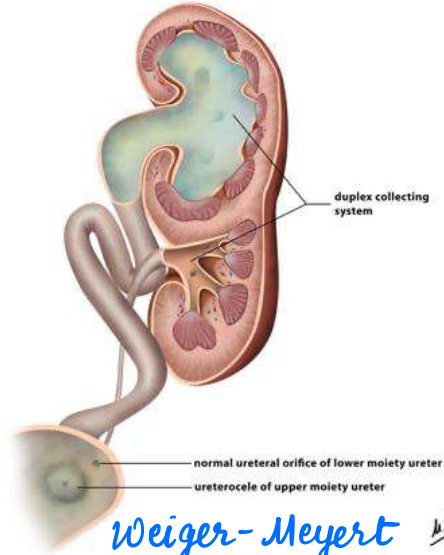


Uroflowmetry

- ①: > 15 ml/s flow rate
- ②: < 60 cm/s pressure



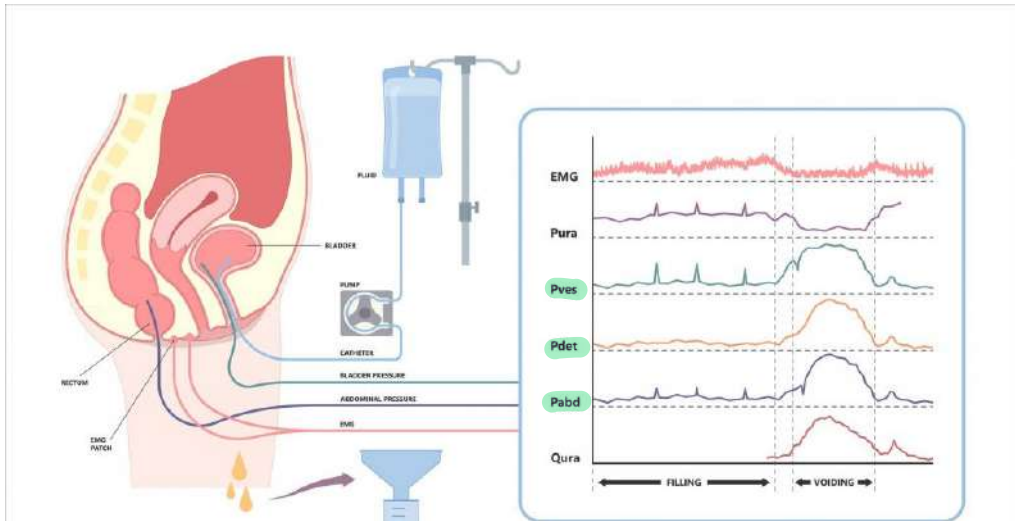
obstructive urinary ds.



Weiger-Meyert rule:

- Upper moiety is inferior and medial position prone to obstruction and dysplasia.
- Lower moiety is superior and lateral position. prone to VUR.

Urodynamic study for neurogenic pressure
 $pDet = pVes - pAbd$



-Gross purulence or existing infection?
 -Perforated viscera > 4 hours old?
 -Traumatic wound open > 4 hours?
 -Penetrating injury > 4 hours old?

Class IV-Dirty /Infected
 e.g. surgical management of abscess, repair of perforated bowel
 20% SSI

-Acute, non-purulent inflammation?
 -Unplanned entrance into GI/GU/ respiratory tracts?
 -Major break in sterile technique?

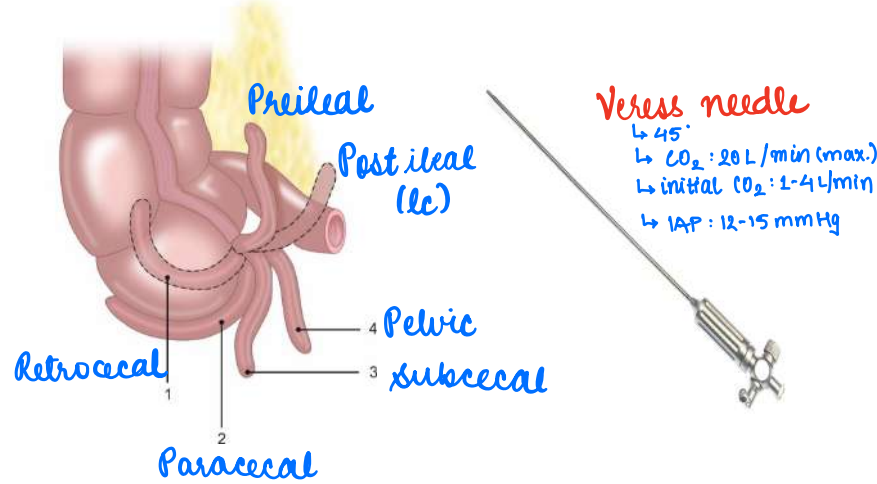
Class III- Contaminated
 e.g. non-sterile debris in field, cholecystectomy with bile spillage or acute inflammation
 10-20%

Controlled/intentional entry into the GI, GU, or respiratory tracts?

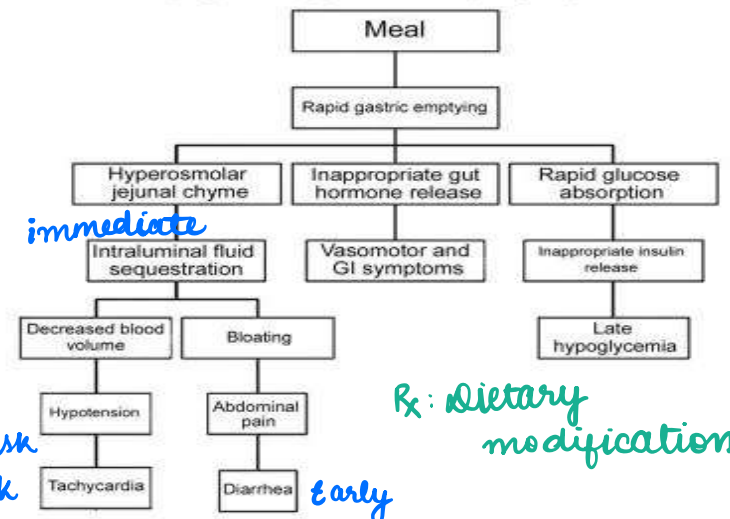
Class II- Clean-Contaminated
 e.g. hysterectomy, lobectomy, laryngectomy, small bowel resection, TURP, LSCS
 2-10%

Class I- Clean
 e.g. mastectomy, hernia repair, thyroidectomy, TKR, THR, CABG
 <2%

Van Nuys: Age, grade, margins, size

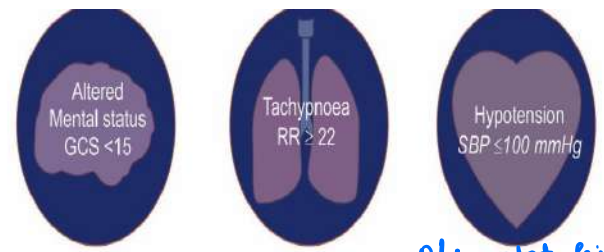


Pathophysiology of Dumping Syndrome



Rx: Dietary modification

SIRS -2 or more +:
 Core Temperature <36°C or > 38°C
 HR >90bpm
 RR >20/min or P_{co2} <32 mmHg
 WBC count >12,000 /μL, <4000/μL, 10% bands



qSOFA < 2/3 : Not high risk
 RTG 2/3 : High risk

TRIAGE:

Immediate: immediately life-threatening injuries

Delayed: urgent injuries requiring treatment within 6 hours

Minimal: walking wounded


Dead

- Airway Obstruction
- Tracheobronchial Tree Injury

- Tension Pneumothorax
- Open Pneumothorax
- Massive Hemothorax

- Cardiac Tamponade
- Traumatic Circulatory Arrest

*Life
Threatening
Injuries*



Peau d'orange
T4b

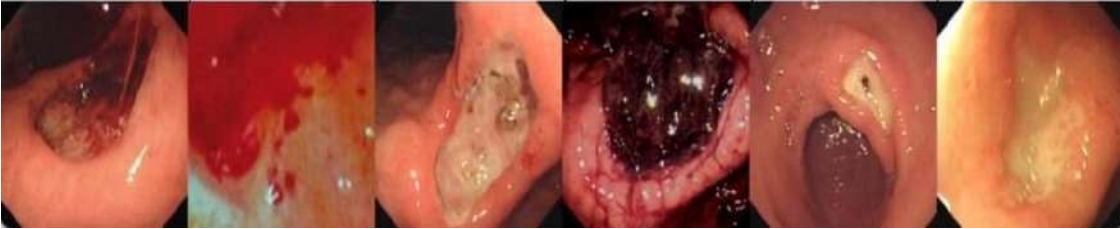
MYOPECTINEAL ORIFICE:

Conjoint tendon
Iliopsoas muscle
Lacunar ligament

Model For End Stage Liver Disease (MELD)
Creatinine (mg/dL)
Bilirubin (mg/dL)
INR
 Revised: Na^+

NAZER index: *Wilson's prognosis*
Bilirubin
PT/INR
AST

Ia	Ib	IIa	IIb	IIc	III
Spurting bleed	Oozing bleed	Non-bleeding visible vessel	Adherent clot	Flat spot in ulcer crater	Clean base ulcer



Pediatric End-Stage Liver Disease (PELD)
 -**Total bilirubin**
 -**Albumin**
 -**Age (< 1 Y)**
 -**Growth failure**
 -**INR**

Hernia	Characteristics	
Medial	Subxiphoid	M1
	Epigastric	M2
	Umbilical	M3
	Infraumbilical	M4
	Suprapubic	M5
Lateral	Subcostal	L1
	Femoral hernia	L2
	Iliac	L3
	Lumbar	L4

Criterion
A Additional Treatment
S Serous discharge
E Erythema
P Purulent exudates
S Separation of deep tissues
I Isolation of bacteria
S Stay in hospital prolonged over 14 days

The MUST tool

(i) BMI (kg/M²)

0 = >20.0

1 = 18.5-2.0

2 = <18.5

(ii) Weight loss in 3-6 months

0 = <5%

1 = 5-10%

2 = >10%

(iii) Acute disease effect:

little nutrition

intake for >5 days

Maastricht	Presentation of Death	DCD Situation
I	Dead on arrival	Uncontrolled
II	Unsuccessful resuscitation	Uncontrolled
III	Anticipated cardiac arrest	Controlled
IV	Cardiac arrest in brain dead donor	Controlled
V	Unexpected cardiac arrest in a hospital inpatient	Uncontrolled

CHHOTI COPY REVISION: PART 6

OPHTHAL / PEDS / RADIO/ ENT

Dr. Shreya

PEDIATRICS

- Ponderal index $\frac{EFW}{(L)^3} \text{ g/cm}^3 > 2 = \text{normal (seen in symmetrical IUGR)}$. Asymmetrical < 2 - UPI (better prognosis: head sparing)
- PLAN B *some dehydration*. Irritable, thirsty child (drinks eagerly) ORS $>$ IV 75 ml/kg over 4 hours (late deceleration)
- PLAN C *severe dehydration*. Lethargic, drinks poorly. IV 100 ml/kg $\left\{ \begin{array}{l} 30 \text{ ml/kg} < \begin{array}{l} < 1 \text{ yr: } 1 \text{ hour} \\ > 1 \text{ yr: } 1/2 \text{ hour} \end{array} \\ 70 \text{ ml/kg} < \begin{array}{l} < 1 \text{ yr: } 5 \text{ hours} \\ > 1 \text{ yr: } 2 1/2 \text{ hours} \end{array} \end{array} \right.$
- Fluid of choice RV (If SAM: RL + 5% dextrose / 1/2 NS + 5% dextrose)

• CRASH and burn Kawasaki disease $\left\{ \begin{array}{l} \text{B/L, non-purulent conjunctivitis, Rash (palms \& soles), adenopathy } > 1.5 \text{ cm,} \\ \text{R: IV + Aspirin} \quad \left[\text{strawberry tongue, hand swelling, fever } > 5 \text{ days. mc comp: myocarditis} \right] \end{array} \right.$

• Nusinersen / Onasemnogene: Zolgensma / Risdiplam: Spinal Muscular Atrophy / Floppy Baby Syn. (LMN: flaccid paralysis, DTR absent, fasciculations, R/o Botulinum toxicity) \leftarrow

• Cyanotic Congenital heart disease \rightarrow Oligemia Tricuspid atresia, Ebstein's anomaly, TOF \rightarrow Plethora Truncus arteriosus, TGA + VSD, TAPVC

• Blalock Taussing shunt @SCA - PA (Yertex graft)

• Acute epiglottitis Thumb sign. mcc worldwide $\left\{ \begin{array}{l} S. pyogenes \text{ (mcc)} \\ S. pneumoniae \end{array} \right.$ mcc India: HiB R: Airway + IV ceftriaxone

• Croup Prodrome: stridor, Barking cough. mcc: Parainfluenza. R: $\left\{ \begin{array}{l} \text{mild: Dexa } 0.6 \text{ mg/kg} \\ \text{mod. - severe: Nebulised racemic epinephrine} \end{array} \right.$ \leftarrow (steeple sign) (biphasic)

• Neonatal screening: by heel prick on day 3-5 of life. Test for TSH, CAH, TMS, PKU: Guthrie Test

• Congenital hypothyroidism next step: RAIU scan + USG

• CAH: Ambiguous genitalia with shock (Female pseudohermaphrodite)

• CHPS metabolic derangement Hypokalemic, hypochloremic metabolic alkalosis with paradoxical aciduria

CAH ~ shock + ambiguous genitalia
(female pseudhermaphrodite)

deficiency MC Testosterone

(xx) 21-OH	↓ (↓BP)	↑
(xy) 11-OH	↑ (↑BP)	↑
(xx) 17-OH	↑ (↑BP)	↓

Screening test: 17-OH-progesterone

Rx: 0.9% NaCl bolus
#1b

IV Hydrocortisone +
oral Fludrocortisone

Pulmonary Prethosa

TAPVC

- large pedicle,
- 2nd HS wide and fixed
- I: supracardiac (mc)
- II: cardiac
- III: infracardiac (worst prognosis)
- CXR: snowman/figure of 8 sign (supracardiac)

TGA

- small pedicle
- CXR: egg on string app.
- CT: SMA instead of SAM arrangement
- Rx: Alprostadi Rashkind's atrial septostomy
- arterial swil

Truncus arteriosus

- large pedicle
- CXR: sitting duck

Cyanotic Heart Disease

Pulmonary oligemia

TOT

- pulm. stenosis
- RVH
- Overriding aorta
- VSD

CXR: Boot/Coer-em-Sabot heart

Rx: cyanotic ↓

• knee-chest position/squatting

- O₂
- Morphine
- β-blockers

Sx: BT shunt (R.SCA → PA)

Waterston shunt (Asc. A → R.PA)

Pott's shunt (Des. A → L.PA)

Ebstein anomaly

- WPW
- RBBB
- Himalayan P waves

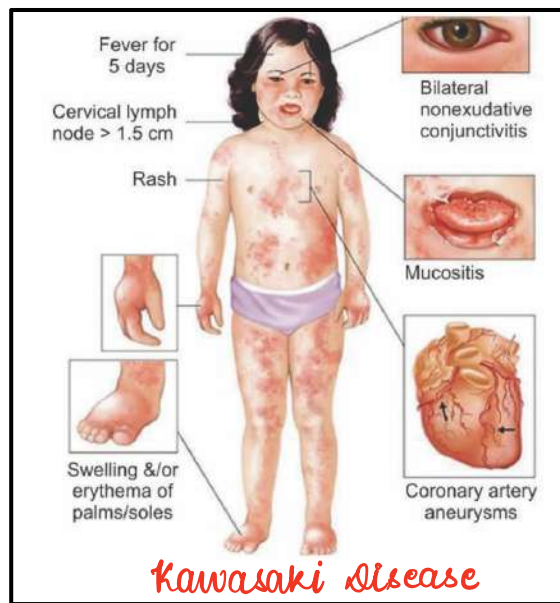
d/t Li⁺ intake ↓

atrialisation of RV

CXR: Box-shaped heart

Tricuspid atresia

- LAD
- defect in RV



	agenesis	dysgenesis	ectopic
hypothyroidism screening	⊖	RAIU ⊖ ↓ follow it with	⊖
	⊖	USG ⊕	⊕
			RAIU ⊕ no need for USG

- Preterm HIE: **Periventricular leukomalacia (spastic diplegia)** ~ early handedness in cerebral palsy
- Term HIE: **Parasagittal infarct: spastic quadriplegia**
- Preterm HIE: **Status marmoratus (mc): choreo-athetoid (Kernicterus type)**
- Preterm IVH IOC: **DWI** . [USG to rule out IVH in preterm (germinal matrix)]
- Meconium plug syndrome: **Cystic fibrosis (x-ray)**
 - ↳ No air fluid levels
 - ↳ soap bubble appearance (Neuhauser sign)
 - Rx: gastrografin enema (2 attempts)
- Apnea of prematurity: 2-7d
- **Turners: SNHL** / celiac / IBD/ DDH/ scoliosis/ CVS/ Renal/ Hashimoto
 - ① IQ
 - ↳ bicuspid > COA
 - ↳ horseshoe kidney
 - Down's syndrome: CHL (d/t SOM)**
 - Noonan: ↓IB with Turner's phenotype**
- Pulmonary stenosis- JAG1 (chr 20) **Marfan syndrome**
- Supravalvular AS (Chr 7) **William syndrome (Elfin babies, hypercalcemia)** [DiGeorge: CATCH 22]
- SRNS **4 (-6) weeks**
 - ↓
 - Biopsy (R/o FSGS)**
 - DOC: Calcineurin Inhibitor (Tacrolimus)**

steroid dependent NS: DOC: **MMF**
Cyclophosphamide (age > 8 years)
Levamisole (mild)

Sepsis Screen (≥ 2)

- Leukopenia (TLC < 5000)
- Neutropenia (ANC < 1800)
- Immature neutrophil to total neutrophil (I/T) ratio > 0.2
- Micro-ESR $> 15\text{mm}$ 1st hour
- CRP + ve

Severity	Stage 1 (Mild)	Stage 2 (Moderate)	Stage 3 (Severe)
Level of consciousness	Hyperalert	Lethargic or Obtunded	Stupor or coma
Activity	Normal	Decreased	Absent
Neuromuscular Control			
Muscle Tone	Normal	Mild hypotonia	Flaccid
Posture	Mild distal flexion	Strong distal flexion	Intermittent decerebration
Stretch Reflexes	Overactive	Overactive	Decreased or absent
Complex or primitive reflexes			
Suck	Weak	Weak or absent	Absent
Moro (Startle)	Strong	Weak	Absent
Tonic neck	Slight	Strong	Absent
Autonomic Function			
Pupils	Mydriasis	Miosis	Variable
Heart Rate	Tachycardia	Bradycardia	Variable
Seizures	None	Common	Uncommon

Composition	ReSoMal (mmol/L)	Standard ORS (mmol/L)	Reduced osmolarity ORS
Glucose	125	111	75
Sodium	45	90	75
Potassium	40	20	20
Chloride	70	80	65
Citrate	7	10	10
Magnesium	3	---	---
Zinc	0.3	---	---
Copper	0.045	---	---
Osmolarity (mOsm/L)	300	311	245

HSP Criteria


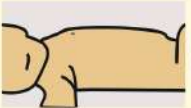



Criterion	Description
Mandatory criterion	Purpura or petechiae with lower limb predominance (+)
	1. Diffuse abdominal pain with acute onset. <i>Intussusception</i>
	2. Histopathology showing leukocytoclastic vasculitis or proliferative glomerulonephritis with predominant immunoglobulin A deposits.
	3. Arthritis or arthralgia of acute onset.
	4. Renal involvement in the form of proteinuria or haematuria.

child : HSP
 adult : erythrocytopenia (Hepe)

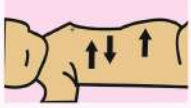




Minimum 1 out of 4 criteria

Silverman-Anderson (for Preterms)






Grade 0

UPPER CHEST MOVEMENT	LOWER CHEST RETRACTIONS	XIPHOID RETRACTIONS	NARES DILATATION	EXPIRATORY GRUNT
				
Synchronized	None	None	None	None

Grade 1

				
Lag on inspiration	Just visible	Just visible	Just visible	Heard with stethoscope

Grade 2

				
See-Saw	Easily seen	Easily seen	Easily seen	Heard by ear

Inspiratory

Expiratory

Downe's score

Score	0	1	2
Respirate Rate	<60	60-80	>80
Cyanosis	None	No cyanosis with oxygen	Cyanosis with oxygen
Retractions	None	Mild	Moderate to severe
Grunting	None	Audible with stethoscope	Audible without stethoscope
Air Entry	Good	Decreased	Barely Audible

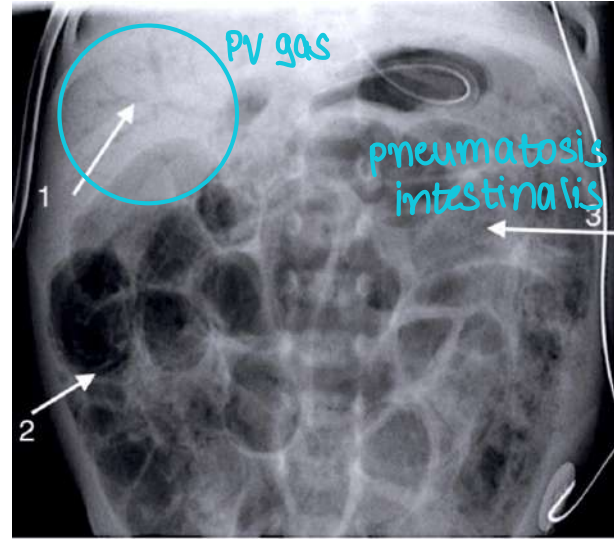
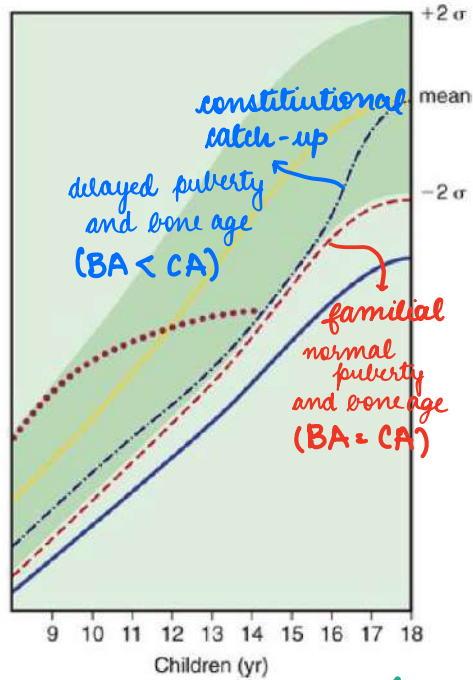
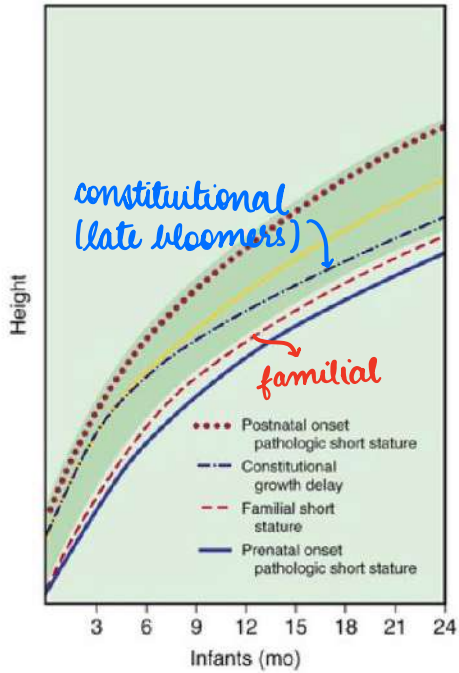
Reduced osmolarity ORS (SGLT-1)

NaCl 2.6 gm

KCl 1.5 gm

Na⁺ citrate 2.9 gm

glucose 13.5 gm









NEC
R/F: Preterm, formula, PDA

Modified Bell's Staging

NPO
+ Antibiotics

- IA: (BAT) Bradycardia, apnea, temp. instability - 3 days
- IB: Grossly bloody stool - 3 days
- IIA: Absent bowel sounds, pneumatosis intestinalis 7-10 days
- IIB: Met. acidosis, thrombocytopenia, PV gas - 14 days
- IIIA: (BAD) Bradycardia, apnea, acidosis, DIC - 14 days
- IIIB: Pneumoperitoneum R: surgery + fluids

Apgar score	Score 2	Score 1	Score 0
Appearance	 Pink	 Extremities blue	 Pale or blue
Pulse	>100 bpm	<100 bpm	No pulse
Grimace	Cries and pulls away	Grimaces or weak cry	No response to stimulation
Activity	 Active movement	 Arms, legs flexed	 No movement
Respiration	Strong cry	Slow, irregular	No breathing



Phototherapy

- Structural Isomerization (Bilirubin → lumirubin)
- Distance: 30-45 cm
- Wavelength: 450 nm
- LED lamp
- Irradiance: 30 uW/cm²/nm

CF: Chromosome: 7 CTR
 -MC mutation: $\Delta F508$ (Phenylalanine)
 -MC class of mutation: class 2 (Trafficking)
 -Trikafta: Elexacaftor + Tezacaftor + Ivacaftor - potentiator corrector

APGAR < 3 pH < 7.0 Hypotonia : Severe Birth asphyxia

Clinical category	Essential features
Severe Pneumonia	Central cyanosis, not able to breast feed or drink, convulsions, lethargy, unconsciousness, severe respiratory distress (head nodding)
Pneumonia	Fast breathing < 2 months ≥ 60 2-12 months ≥ 50 12-59 months ≥ 40 With or without chest indrawing, with oxygen saturation > 92%
No Pneumonia	No fast breathing and no indications of severe pneumonia

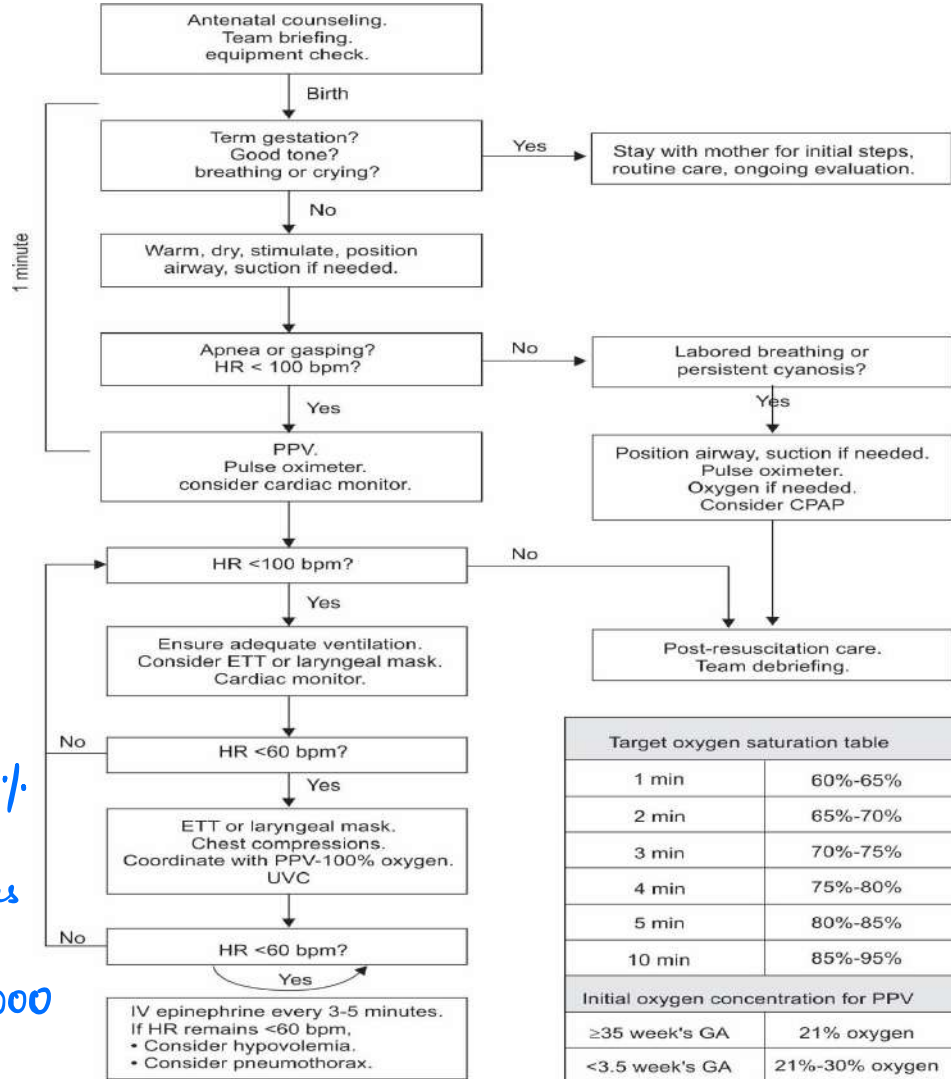
Pulse: auscultation
f/b attaching cardiac monitor.

Vascular access at UVC
BMV start in: 1 min

• Saturat^m term: 21%
• Preterm <35 wks: 21-30%

• RR: 40-60 bpm } Neonates
CC: 3:1

IV Epinephrine: 1:10,000
(0.02 mg/kg)



(IV → IO → IT)

Target oxygen saturation table	
1 min	60%-65%
2 min	65%-70%
3 min	70%-75%
4 min	75%-80%
5 min	80%-85%
10 min	85%-95%
Initial oxygen concentration for PPV	
≥35 week's GA	21% oxygen
<3.5 week's GA	21%-30% oxygen

Saturation monitoring done at: RVL (pre-ductal)

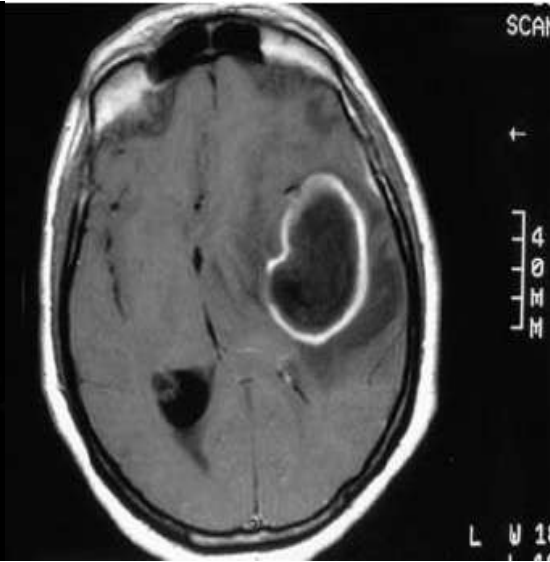
RADIOLOGY



DWI

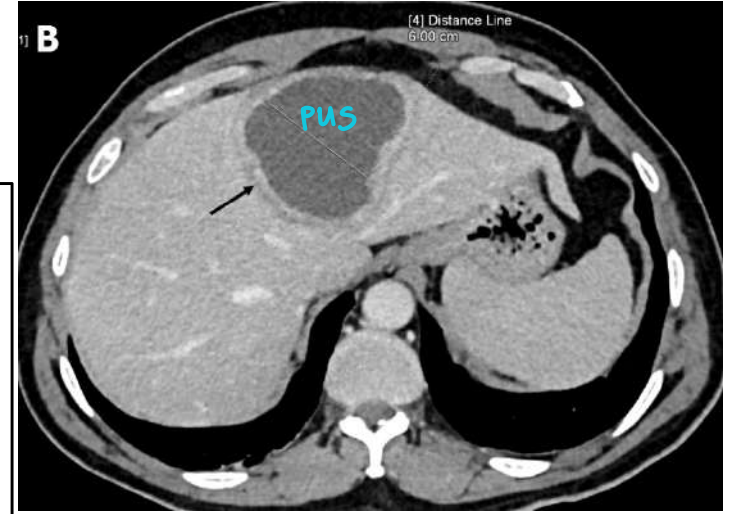
Diffusion Restriction

- Abscess
- Ischemic stroke (cytotoxic edema)
- Tumor hypercellular
- Epidermoid cyst (keratin filled)

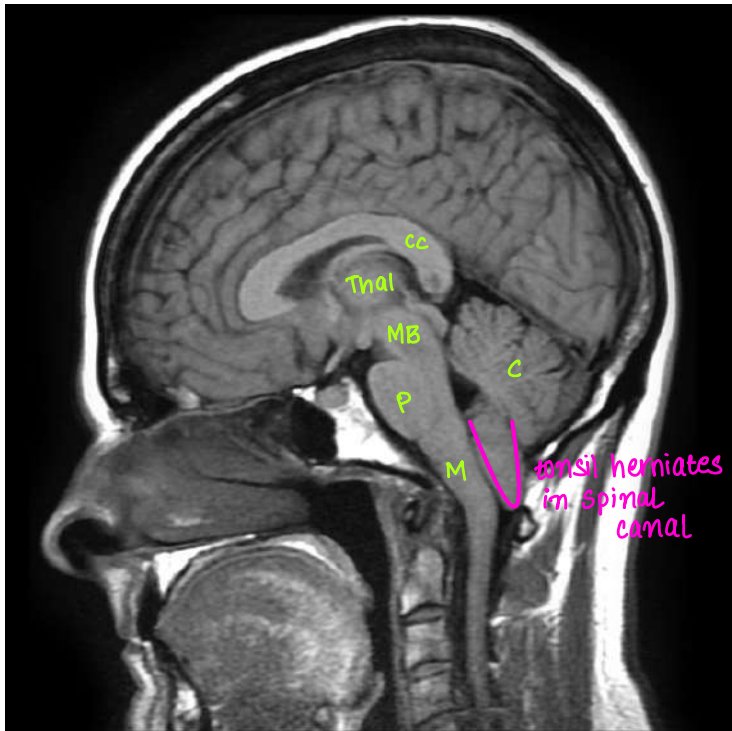


Cerebral Abscess

- Ring enhancing lesions
-
- Neurocysticercosis
 - Tuberculoma
 - Toxoplasmosis
 - Brain abscess
 - predisposed by
 - sinusitis
 - CSOM
 - TOF
 - Metastasis

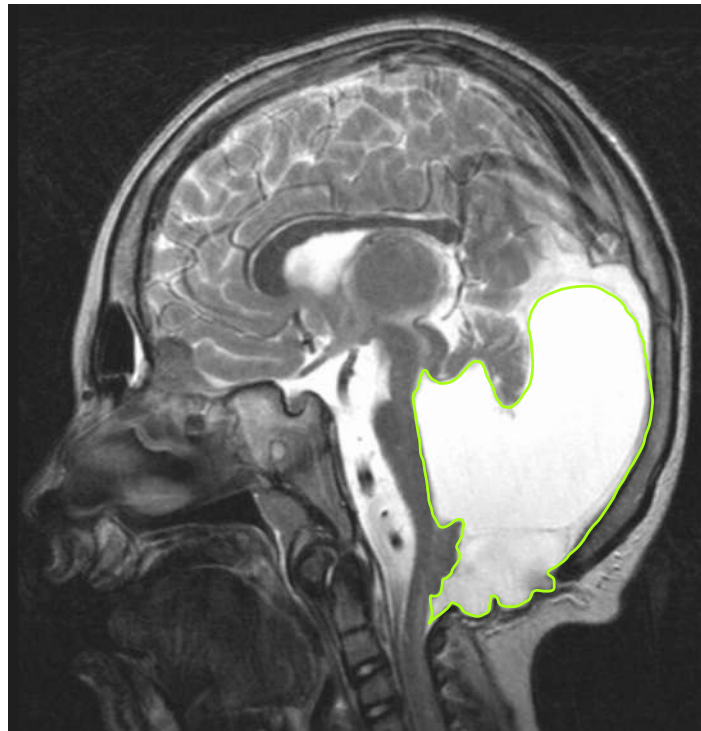


Liver abscess



Chiari malformation

- Banana/Lemon sign
($C_2 > C_1$)
- tonsillar herniation



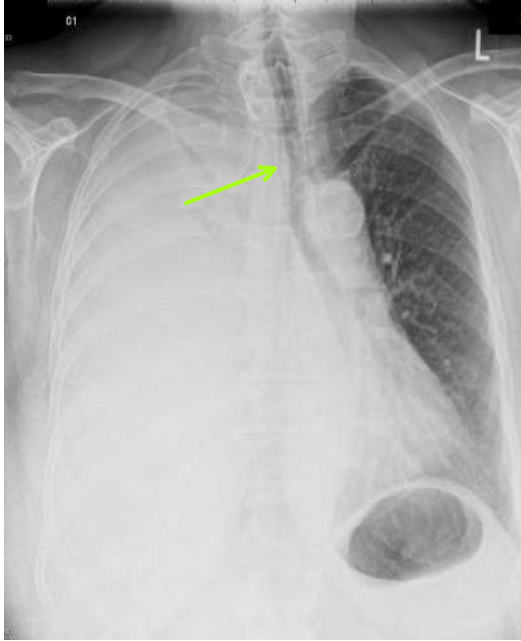
Dandy-Walker malformation

- Posterior fossa cyst
- v/s Vein of Galen malformation
- Large tortuous vein
- Neonate + High o/p CF + Bruit

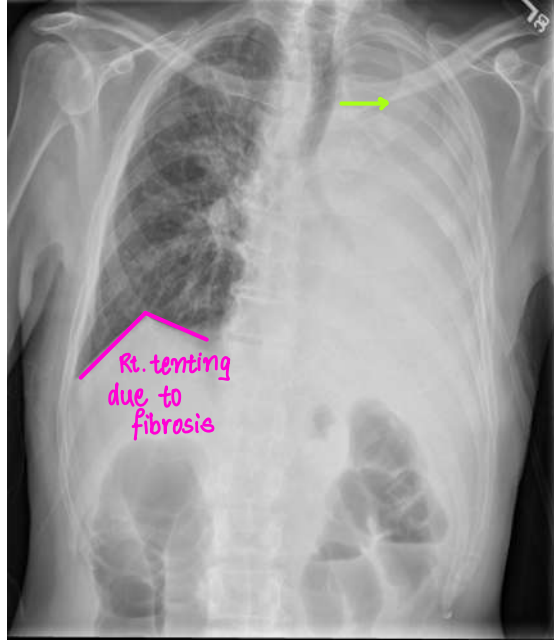


- Posterior fossa enlargement
- Cerebellar vermis agenesis

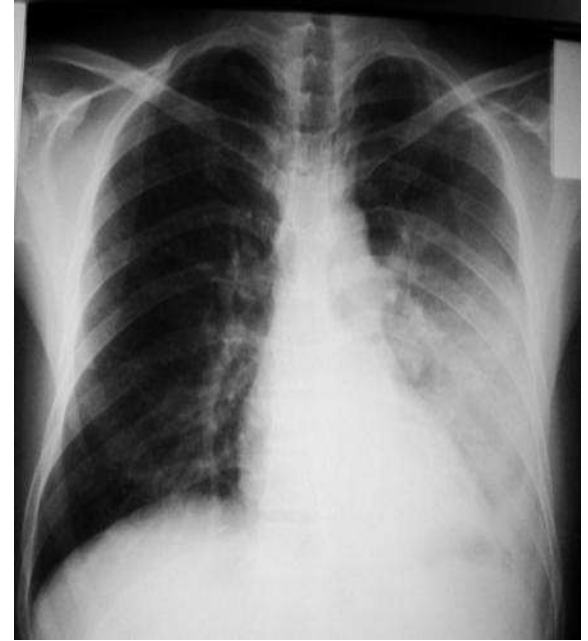
MEDIASTINUM



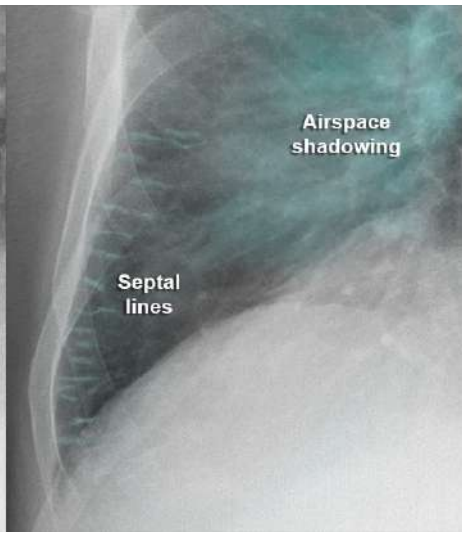
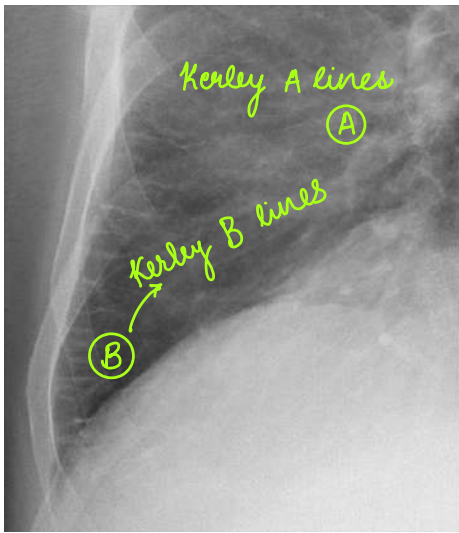
Massive pleural effusion/
Hemothorax
• C/L shift of mediastinum



Collapse
• I/L shift of mediastinum



Consolidation
• No shift in mediastinum



Kerley B lines

- s/o LV failure which increases LA pressure which, in turn causes Pulmonary vein dilatation
- at Interlobular septal edema d/t PV dilatation

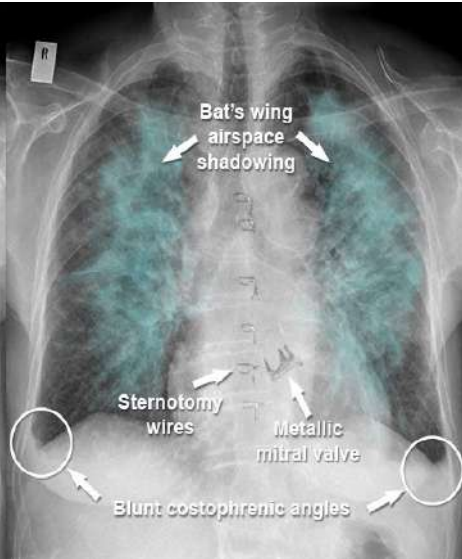
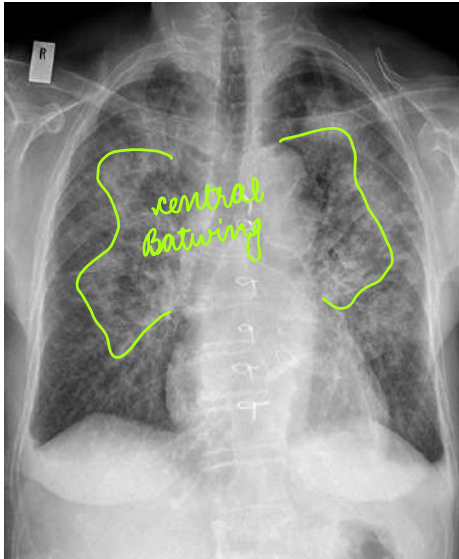
LVF

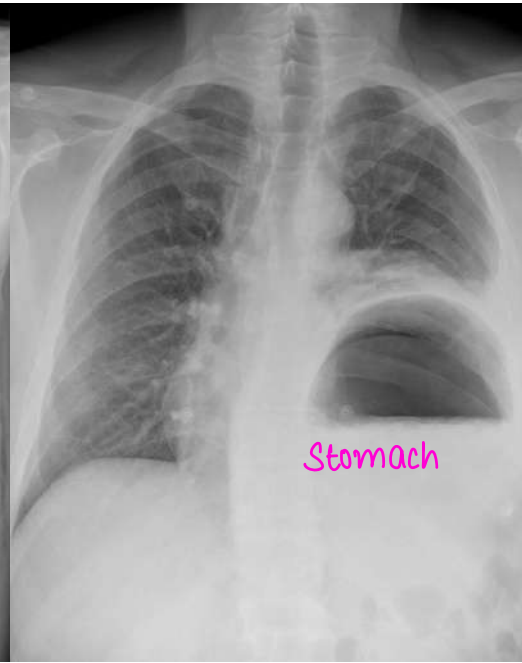
13-18 mmHg	Cephalisation of Pulmonary veins
18-25 mmHg	Kerley B lines
> 25 mmHg	Batwing app. Pulm. edema



ARDS

- Non-cardiogenic Pulmonary edema





Pulmonary abscess

- Air- fluid level

Hydropneumothorax

Diaphragmatic Injury

- C/I : ICD

Hiatal Hernia

(Rolling type)

- C/I : ICD

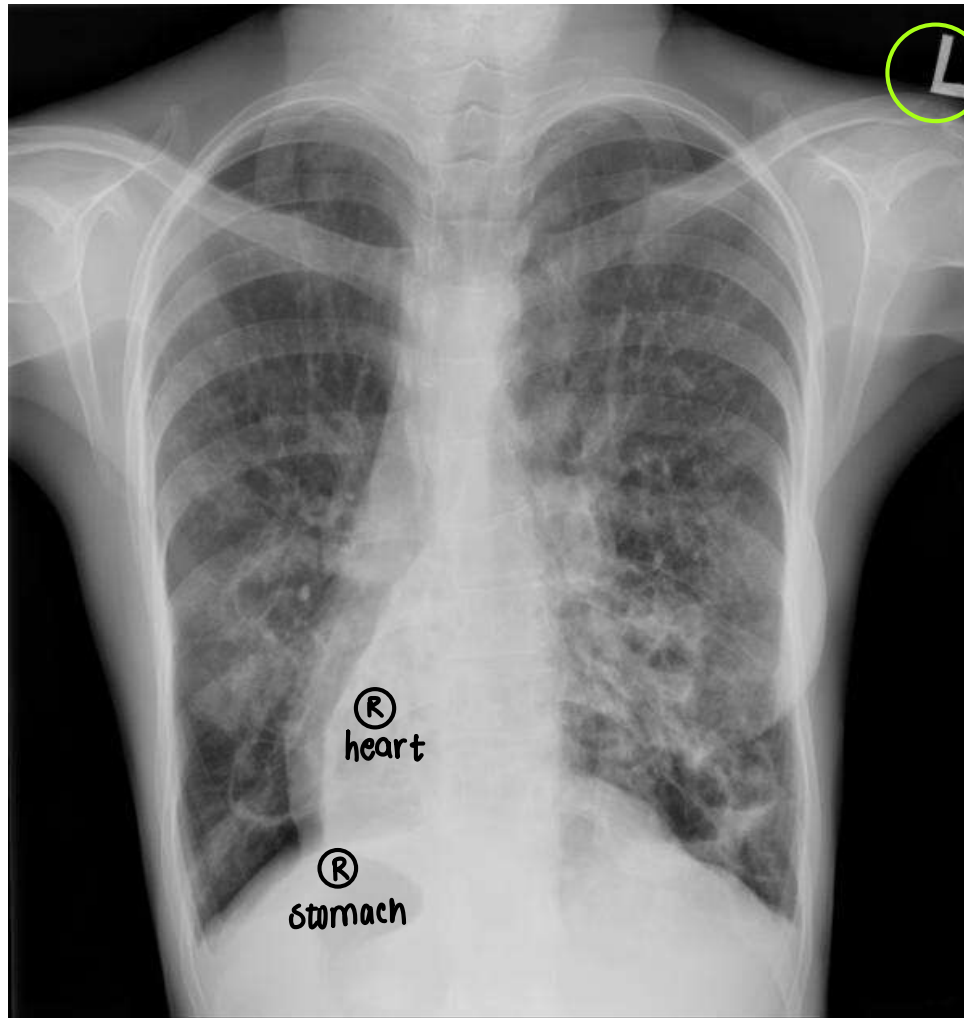


Monad sign

- mobile fungal ball
in a pre-existing
Pulmonary cavity

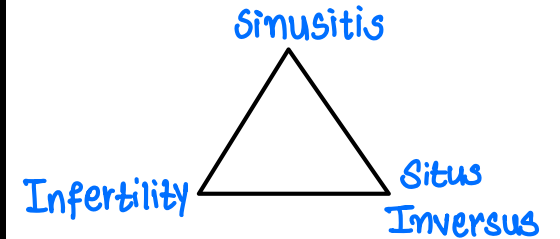
Aspergilloma

In sliding hernia,
only GEJ comes up.



Kartagener syndrome

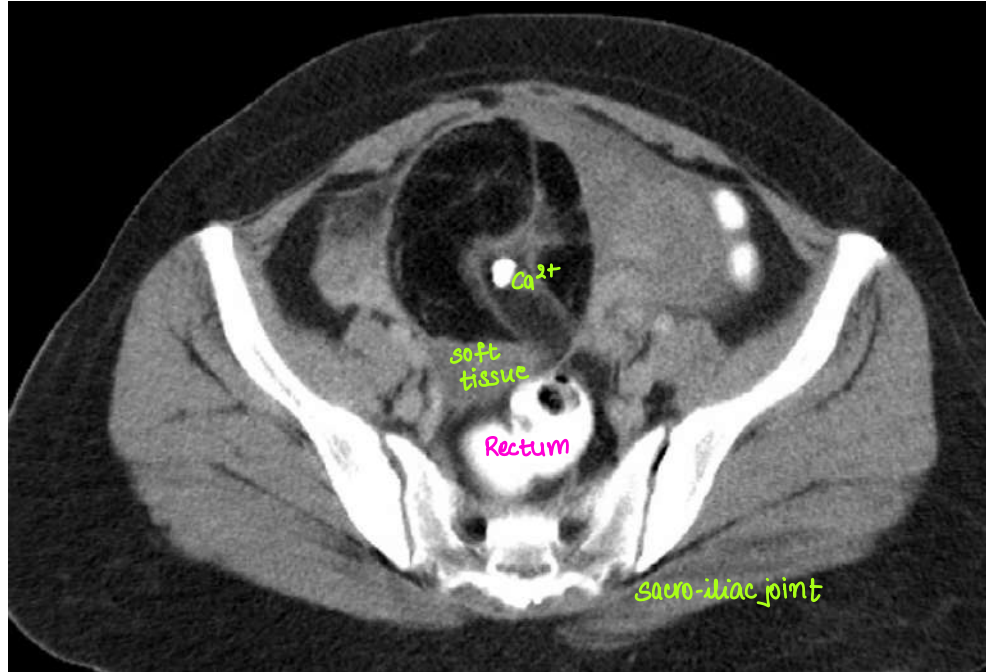
- Dynein arm defect
- Dextrocardia



- Bronchiectasis

Dermoid cyst/ Teratoma

- Benign
- Young females



RUQ pain intermittent



Cholelithiasis/GB stones

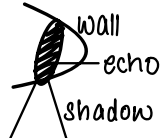
· hyperechoic stone \bar{e} past.

acoustic shadow

· no jaundice

WES (Wall echo shadow)

sign:



-stone in contracted GB

· loc: USG
(Stones are not radiopaque)

Incidental



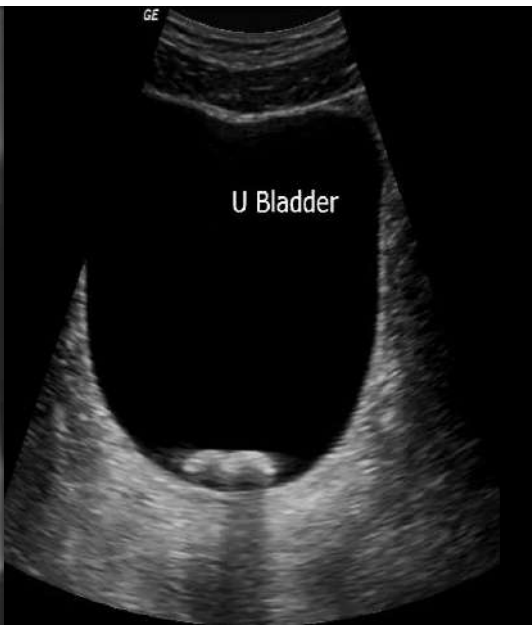
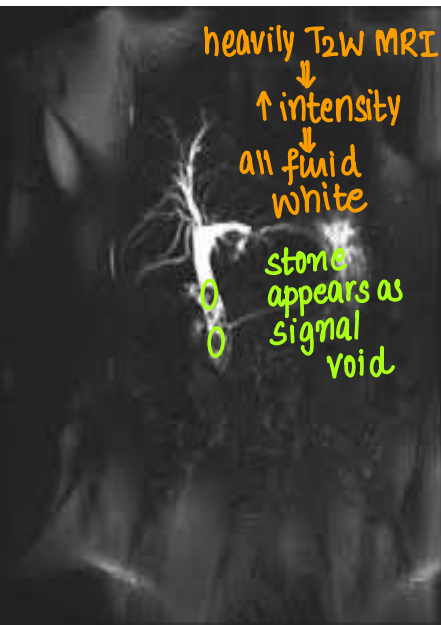
Comet tail

· Adenomyomatosis

↓
cholesterol crystals

Rokitansky-Aschoff

sinuses



MRCP (T₂W)

- non-invasive
- no contrast
- no radiation

CBD stone:
 radiolucent

UB stone with Post. Acoustic shadow

- stones are hyperechoic
- stone absorbs waves passing through it and refract, so it looks white
- However, no sound waves pass through area behind it, so hyperechoic

Bladder stone (in center)

- Jack-stone app.
- Lamellated

Bladder wall calcification
 - fetal skull appearance

Calcified fibroid

- Elderly
- Soft tissue mass
- Asymmetrical
- Variegated appearance

Swelling +



GCT/Osteoclastoma

30-40 years

Epiphyseal tumor

Soap bubble appearance

(giant cell + mononuclear cell)

Rx: External curettage
+ grafting



ABC

child

Metaphyseal tumor

Soap bubble appearance

Rx: External curettage
+ grafting



Chondroblastoma

(Codman's tumor)

< 20 years

Epiphyseal tumor

HPE: Chicken wire calcification

Rx: External curettage
+ grafting

5yr old low SES, low bone density



Rickets

- cupping, fraying
- Healed rickets: White line Irregular
- Rosary: Non-tender, blunt

5yr old short stature, normal bone density



Scurvy

- Smooth outline (white line)
- Wimberger sign
- White line of Frenkel
- Rosary: Tender, pointed



Achondroplasia

- Rhizomelic/Proximal shortening
- Chevron's sign

Flat bone

- └ Pelvis
- └ Scapula

Metastasis ⊕

△: Chondrosarcoma

- Popcorn
 Calcification
- Ring and arc
 matrix



D/D: Popcorn Calcificatⁿ:

- └ Fibroadenoma breast
- └ Lung hamartoma
- └ Chondrosarcoma

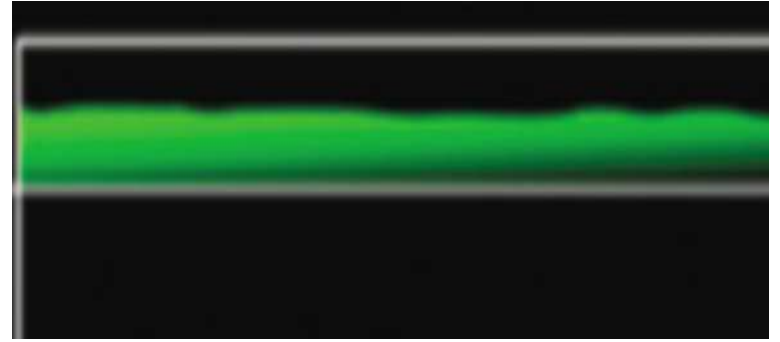
DOPPLER WAVEFORMS



Triphasic
in extremity arteries and
arterioles



Biphasic
in visceral arteries



- Monophasic**
- Blood returns in one direction in veins
 - pulsation variation with HR and respiration
 - No change in systole and diastole
 - Stenosed arteries
- (No flow in complete occlusion)

CONTRAST MEDIA

Contrast media	Modality	Route	Pre-requisite	Complication
IODINATED CONTRAST	X-Ray CT	IV	RFT	CIN (Contrast Induced Nephropathy) <ul style="list-style-type: none"> ↳ ↑ S. creat by 0.5 mg in 48 hours ↳ Prevention: hydration
GADOLINIUM	MRI	IV	RFT	NSF (Nephrogenic systemic fibrosis)
SONOVUE	USG	IV	Safe in renal failure	R/o sulfa allergy → because pulmonary excretion
BARIUM	X-Ray	Oral/ Enema	CXR-PA	R/o perforation, obstruction, post-op, TEF Iodinated can be given

MAXIMUM PERMISSIBLE DOSE

	Occupational Exposure	Public Exposure
Overall	<ul style="list-style-type: none">• 20 mSv/ year averaged over 5-year consecutive• 30 mSv in any single year	1 mSv/y
Pregnant female	2 mSv/y	1 mSv/y



TLD badge

- personal dosimeter
- to check the amount of exposure to radiation
- LiF/CaSO_4
- worn below lead apron at chest level
- checked 3 monthly

Lead apron

- Thickness of apron used
 - mc: 0.5 mm
 - min: 0.25 mm

OPHTHALMOLOGY

Keratoconus

- Munson's sign
- Rizzuti's sign
- IOC: Corneal topography
- Rx: INTACS
Keratoplasty

(>11.5mm at birth)

Haab striae **Congenital buphthalmos** Horizontal breaks in Descemet's membrane Blepharospasm, lacrimation, Photo-Phobia

Vogt striae **Keratoconus**: Vertical lines in Descemet's membrane (Posterior stroma)

KF ring **Wilson's disease**: Copper deposition in Descemet's membrane

Fleischer ring **Keratoconus**: Iron deposition in Epithelium

MICROANEURYSM: **Diabetic Retinopathy**: Inner nuclear layer

Hemorrhages-Dot and bot / HARD EXUDATES: Outer Plexiform layer

Flame shaped/ COTTON WOOL/ Soft exudates: Nerve fibre layer

Richardson Koepe: **Direct gonioscope**

Pachymeter: **thickness** Keratometry: **curvature**

Marcus Gunn pupil: **ON / RAPD** (Rule out Multiple sclerosis)

Adie tonic pupil: **Post-ganglionic Parasympathetic** (0.125% Pilocarpine - constricts)

Argyll Robertson pupils: **3° Syphilis** (ARP +)

Hutchinson's pupil: **Uncal herniation** : 1/L 3rd CN

Wernicke's pupil: **Optic tract localization**

Outer BRB **RPE : CSR** Inner BRB: **Capillary : CME**

(Coxsackie B : Bornholm / Devil's grip)

Coxsackie A24/ Entero70 **Hemorrhagic conjunctivitis**

(HFMD : Coxsackie A16, RMSF, 2° Syphilis)

Phacomorphic **Shallow AC** Phacolytic **Deep AC**

Preseptal cellulitis **Eyelid swelling**

Orbital cellulitis **Proptosis +**

Orbital apex / Tolosa Hunt **OC + SDF : I/L 3, 4, 6, V1 + CN 2**

Cavernous sinus thrombosis **B/L CN 6**

Photocoagulation

Double freq Nd-Yag (532nm)
Argon laser

**PRP - PDR (neovascularisⁿ)
(subhyaloid h'age)**

Laser Trabeculoplasty (POAG)

Photoablation

Argon fluoride Excimer
(193nm)

LASIK

Photodisruption

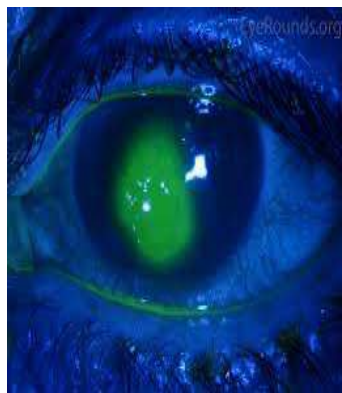
Nd-Yag (1064nm)

PCO

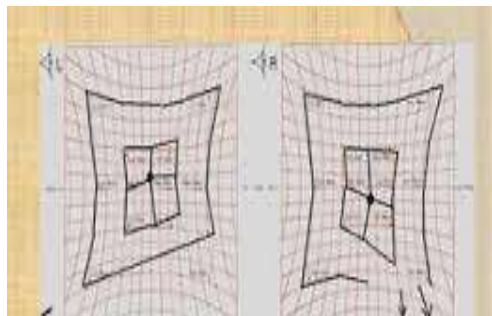
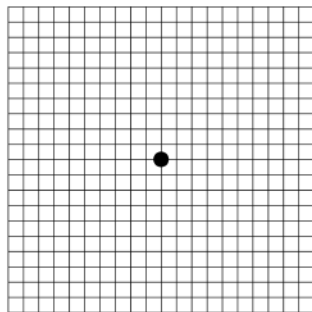
**PeriPheral Iridotomy
- ACG**

Nd Glass (1053nm)

**SMILE
FLACS**



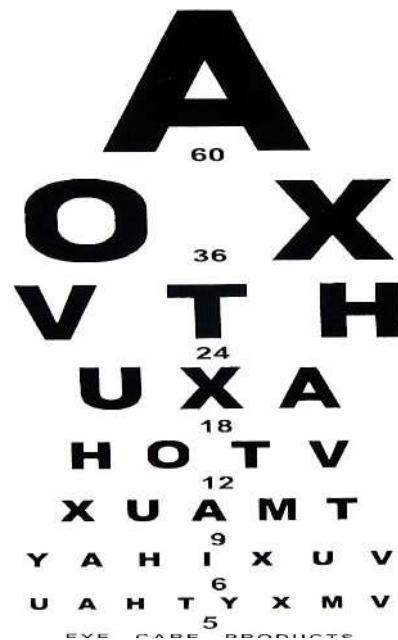
Fluorescein dye → Lissamine → Rose Bengal dye
 Cobalt blue filter Green dye



Amsler's grid
 ↓
 Macular d/o

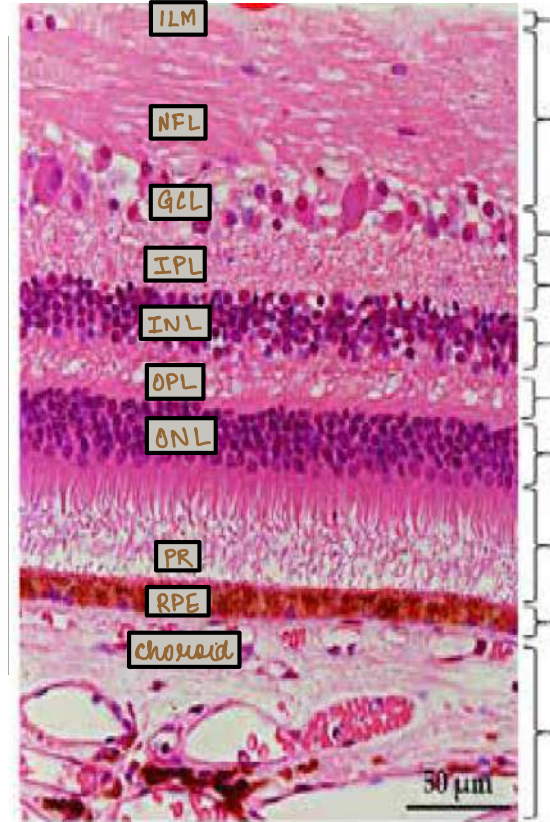
Hess Chart
 ↓
 Diplopia

(Amsler's sign in FHI)



Angle subtended by topmost letter when viewed from 6m:

$$\frac{1}{VA} \times 5$$



Rhodopsin gene: 3922.1

ENT

Lat. rhinotomy / Med. maxillectomy

Total maxillectomy

- Murre incision: **Inverted papilloma**
- Trotter triad: ~ NP CA - Trigeminal neuralgia, palatal palsy, CHL (d/t serous OM / glue ear)
- Gradenigo syndrome: **Apical petrositis** - retroorbital pain, diplopia, chronic ear discharge

Weber Ferguson: CA Maxillary sinus

Gluck-Sorenson: Total laryngectomy

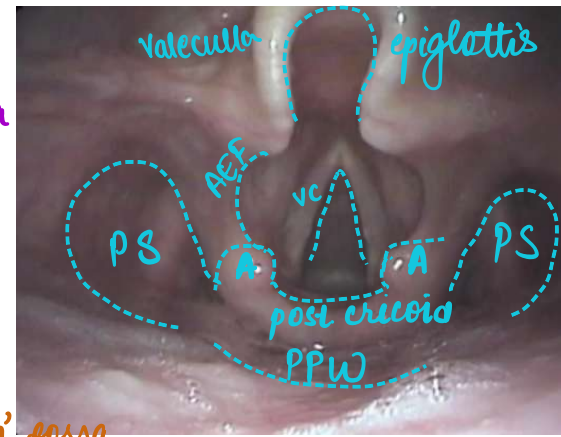
- Grisel: **Atlanto-axial dislocation**
- Griesenger: **Lateral sinus thrombosis**
- Guerin sign **greater palatine artery hematoma (LeFort 1)**

Nasopharyngeal cyst = Innomwaldt cyst

- SMT: **Sinus Tympani** is medial to Pyramid and lateral to facial recess
- Weber test: **lateralised**
 - same: CHL
 - c/L: SNHL
- ECOG SP/AP >30% **Meniere's disease** - U/L TVS

mc site for residual / recurrent cholesteatoma

EECOLIMA Auditory Pathway
1 2 3 4 5 6 7



LVESPA Structures not visible on Indirect laryngoscopy
laryngeal part of epiglottis, vestibule, epiglottis, subglottic area, post. cricoid area, apex of piriform fossa

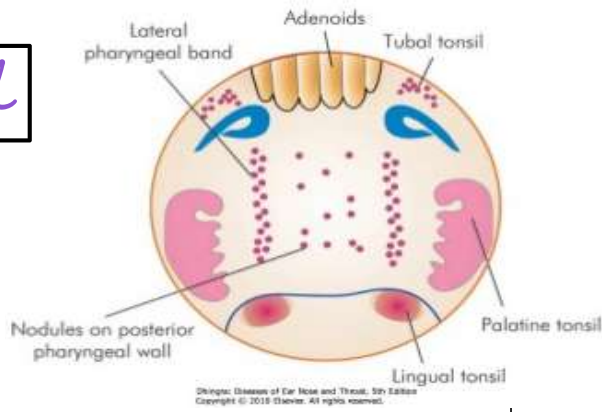
- All muscles supplied by **RLN** except **cricothyroid** (ext. branch of SLN)
- Safety muscle larynx **Posterior cricoarytenoid** - abduction
- Tracheostomy: mc b/w 2nd-3rd ring. mc comp.: pressure necrosis

partial block: suction
complete: remove tube

- UMN facial N: *c/L . Sparing of frontalis, emotional movements, tone of fascial muscles*
- Crocodile tears: *Gustatory lacrimation ~ GSPN*
- Frey syndrome: *Gustatory sweating ~ ATN*
- Promontory, high frequency sounds: *Basal turn*
- Stria vascularis (Scala media): *2³/₄*
- Lushka tonsil- *Adenoid*
- Gerlach tonsil - *Tubal*

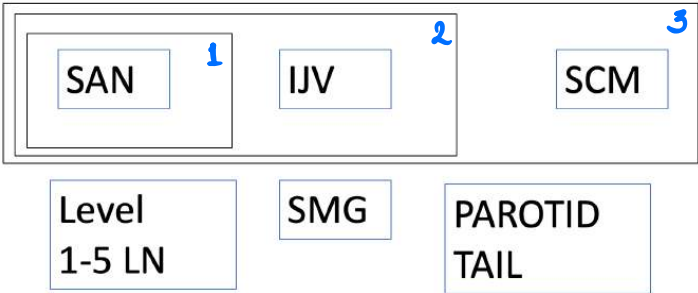
low freq: apical

*Endolymph : ↑K⁺
Perilymph : ↑Na⁺
(from cochlear aqueduct)*



Shingles: Diseases of Ear, Nose and Throat, 5th Edition Copyright © 2010 Elsevier. All rights reserved.

Thyroplasty
 1- *Medialisation*
 2- *Lateralisation - RLN palsy*
 3- *Shortening/ relaxation- pulvophonā (Guttmann)*
 4- *Lengthening/ tightening- androphonia*

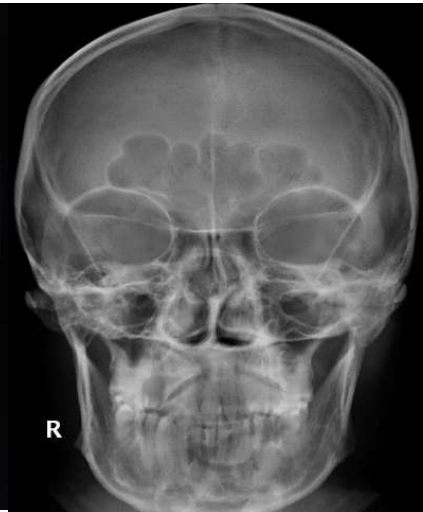


sublingual is always saved

*Modified RND:
 Type 1 : SAN preserved
 Type 2 : SAN + IJV preserved
 Type 3 : Functional RND
 SAN + IJV + SCM preserved*



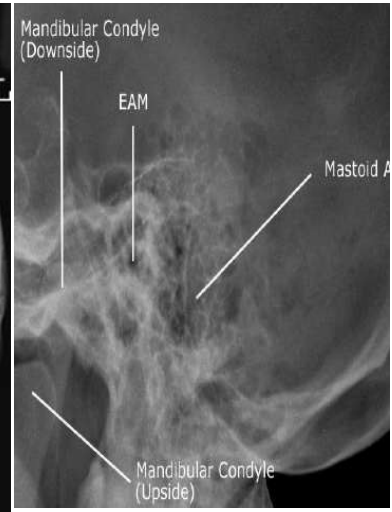
Pierre's view



Caldwell view



Towne's view



Schuller's/Law's view

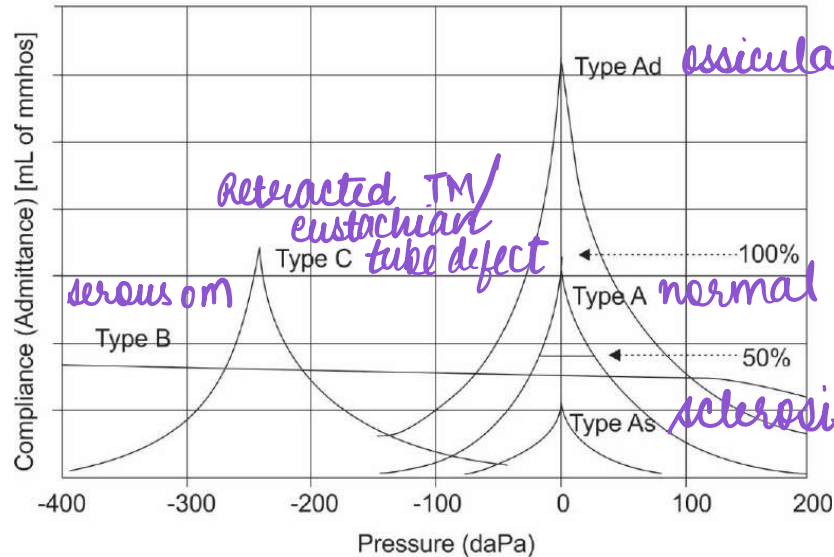


Stenver's view

JNA

Stage	Description
IA	Limited to nose or nasopharynx
IB	Same as IA with extension into >1 paranasal sinus
IIA	Minimal extension through the sphenopalatine foramen into & including a minimal part of the medial part of the pterygopalatine fossa SPF
IIB	Full occupation of the pterygopalatine Fossa, displacing the poosterior wall of the maxilla forward: lateral or anterior displacement of the branches of the maxillary artery: superior extension may occur, eroding orbital bones PPF
IIC	Extension through the pterygomaxillary fissure into the cheek & infratemporal fossa or the pterygoid plates ITF
IIA	Erosion of the Skull base with Minimal intracranial extension
IIB	Erosion of the Skull abase with extensive intracranial extension with or without cavernous sinus involvement

Tympanogram



ossicular discontinuity

normal

sclerosis

	NORMAL	COCHLEAR LESION	RETROCOCHLEAR LESION
Pure tone audiogram	Normal	Sensorineural hearing loss	Sensorineural hearing loss
Speech discrimination score	90-100%	Below 90%	Very poor
Roll over phenomenon	Absent	Absent	Present
Recruitment	Absent	Present	Absent
SISI score	0-15%	Over 70%	0-20%
Threshold tone decay test	0-15% dB	Less than 25dB	Above 25dB
Stapedial reflex	Present	Present	Absent
Stapedial reflex decay	Normal	Normal	Abnormal
BERA	Normal interval between wave I & V	Normal interval between wave I & V	Wave V delayed or absent

Grade of impairment	dBHL corresponding audiometry ISO value (average of 500, 1000 and 2000 Hz)	Description	Performance
0	≤25	No impairment	No (or very slight) hearing problem, able to hear whisper at 1 m
1	26–40	Slight impairment	Able to hear and repeat words spoken in normal voice at 1 m
2	41–60	Moderate impairment	Able to hear and repeat words using raised voice at 1 m
3	61–80	Severe impairment	Able to hear some words when shouted into the better ear
4	≥81	Profound impairment including deafness	Unable to hear and understand even shouted voice

Tolerable sound level: 90 dB
 TM rupture: 150 dB