INICET MINI GT2

Medsynapse by Dr. Nikita

Biochemistry

In the liver, glycogen phosphorylase is inhibited by

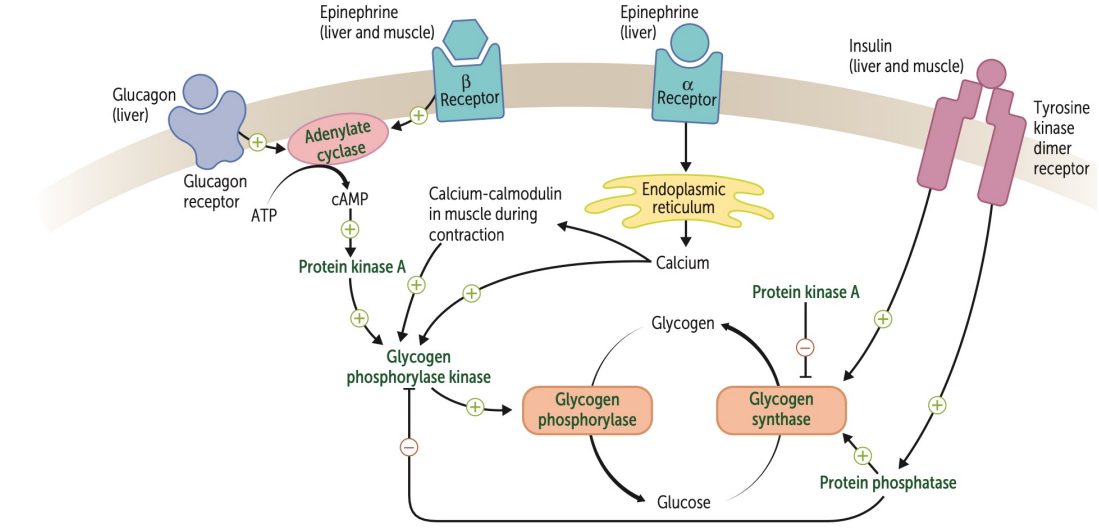
(a) ↑ levels of Glucose-6-phosphate

(b) ↑ levels of AMP

(c) ↑ levels of calcium

(d) Phosphorylation by phosphorylase kinase

Glycogen regulation by insulin and glucagon/epinephrine



Glycogenesis	Glycogen synthase	Glucose-6-phosphate ⊕, insulin ⊕, cortisol ⊕ Epinephrine ⊖, glucagon ⊖
Glycogenolysis	Glycogen phosphorylase	Epinephrine ⊕, glucagon ⊕, AMP ⊕ Glucose-6-phosphate ⊖, insulin ⊖, ATP ⊖

Medsynapse by Dr. Nikita

The only DNA polymerase with 5'→3' exonuclease activity in prokaryotes is:

(a) DNA pol |

(b) DNA pol II

(c) DNA pol III

(d) DNA pol IV

DNA polymerase III G	Prokaryotes only. Elongates leading strand by adding deoxynucleotides to the 3′ end. Elongates lagging strand until it reaches primer of preceding fragment.	DNA polymerase III has 5′ → 3′ synthesis and proofreads with 3′ → 5′ exonuclease. Drugs blocking DNA replication often have a modified 3′ OH, thereby preventing addition of the next nucleotide ("chain termination").
DNA polymerase I H	Prokaryotes only. Degrades RNA primer; replaces it with DNA.	Same functions as DNA polymerase III, also excises RNA primer with 5′ → 3′ exonuclease.

Substrate level phosphorylation occurs in which of the following steps of the TCA cycle?

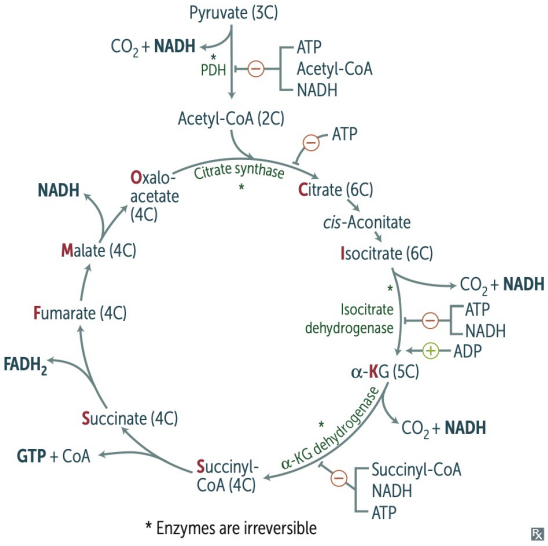
(a) Isocitrate to alpha keto glutarate

(b) Alpha keto glutarate to succinyl CoA

(c) Succinyl CoA to Succinate

(d) Succinate to fumarate

Medsynapse by Dr. Nikita



Also called Krebs cycle. Pyruvate → acetyl-CoA produces 1 NADH, 1 CO_2.

The TCA cycle produces 3 NADH, 1 $FADH_2$, 2 CO_2, 1 GTP per acetyl-CoA = 10 ATP/ acetyl-CoA (2× everything per glucose). TCA cycle reactions occur in the mitochondria.

α-ketoglutarate dehydrogenase complex requires the same cofactors as the pyruvate dehydrogenase complex (vitamins B_1, B_2, B_3, B_5, lipoic acid).

Citrate is Krebs' starting substrate for making oxaloacetate.

Medsynapse by Dr. Nikita

Anatomy

Which of the following statements is true with reference to the Couinaud's liver segments?

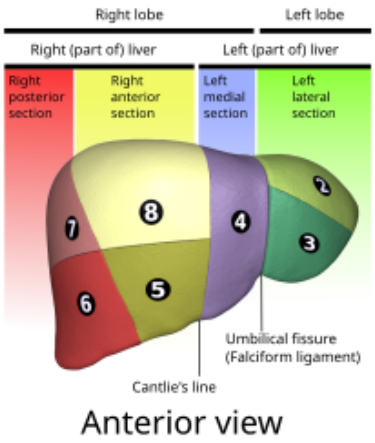
(a) It is classified based on the distribution of hepatic arteries in the parenchyma

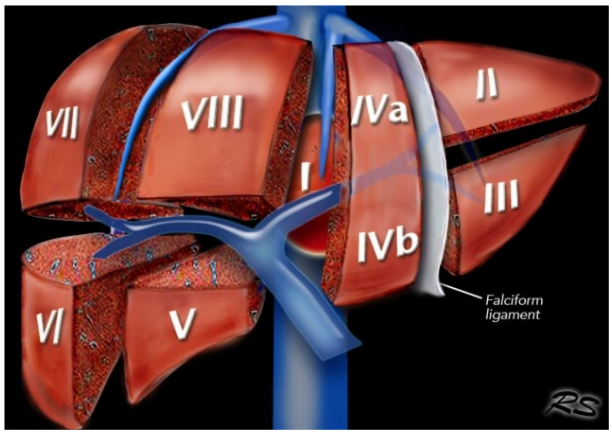
(b) The left lobe of the liver includes segments I, II, and III

(c) Segment IV corresponds to the caudate lobe of the liver

(d) The right lobe of the liver includes segments V, VI, VII, and VIII

Medsynapse by Dr. Nikita





Medsynapse by Dr. Nikita

The cingulum of the brain is classified under

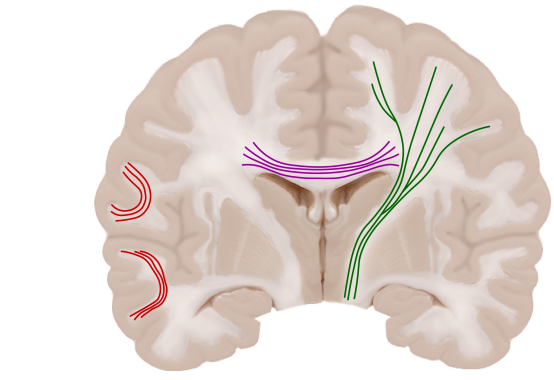
(a) Projection fibers

(b) Long association fibers

(c) Short association fibers

(d) Commissural fibers

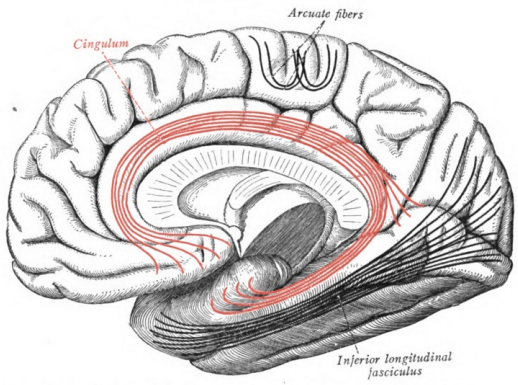
Medsynapse by Dr. Nikita



Association tract - arcuate fibers

Projection tract

Commisural tract



Medsynapse by Dr. Nikita

Fiber Tract	Interconnecting	With
Commissural Fibers		
Corpus callosum	Ipsilateral hemisphere	Contralateral hemisphere
Anterior commissure	Ipsilateral olfactory nuclei and cortex Orbitofrontal, temporal, and occipital cortex	Contralateral olfactory nuclei and cortex Contralateral cortices and possibly the amygdalae
Hippocampal commissure	Ipsilateral hippocampal formation	Contralateral hippocampal formation
Projection Fibers		
Corticospinal tract	Primary motor cortex (BA 4) Premotor cortex (BA 6) Somatosensory cortices (BA 3, 2, 1) Parietal lobe (BA 5)	Spinal cord
Optic radiations	Lateral geniculate nucleus	Primary visual cortex (BA 17) and secondary visual areas
Auditory radiations	Medial geniculate nucleus	Primary auditory cortex (BA 41 and 42) and secondary auditory areas
Fornix	Hippocampal formation	Septal region and mammillary body Thalamus?
Short Association Fibers		
U fibers	One gyrus	Adjacent gyrus
Long Association Fibers		
Cingulum bundle	Frontal and parietal lobes	Parahippocampal gyrus and adjacent temporal lobe
Superior longitudinal fasciculus	Frontal lobe (e.g., Broca's area)	Occipital lobe (visual cortex) Parietal and temporal lobes (Wernicke's area)
Uncinate fasciculus	Orbital cortices	Entorhinal cortex and hippocampal formation
Extreme capsule	Prefrontal cortex	Temporal cortex
Arcuate fasciculus	Frontal lobe	Temporal and parietal lobes
Superior fronto-occipital fasciculus	Prefrontal cortex	Limbic and paralimbic areas
Inferior fronto-occipital fasciculus	Frontobasal cortex	Temporal and occipital cortices
Inferior longitudinal fasciculus	Temporal lobe and amygdala	Parietal and occipital cortices

BA, Brodmann's area.
Data derived in part from references 1 to 8.

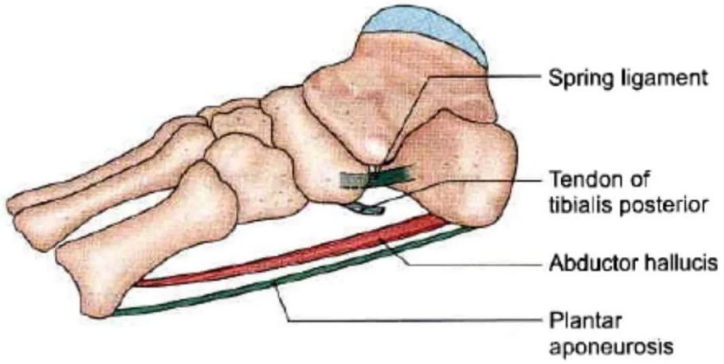
The tie beams of the medial longitudinal arch of the foot include all of the following except:

(a) Plantar aponeurosis (medial part)

(b) Abductor hallucis

(c) Flexor hallucis longus

(d) Medial part of flexor digitorum brevis

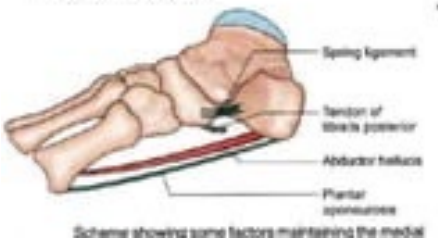


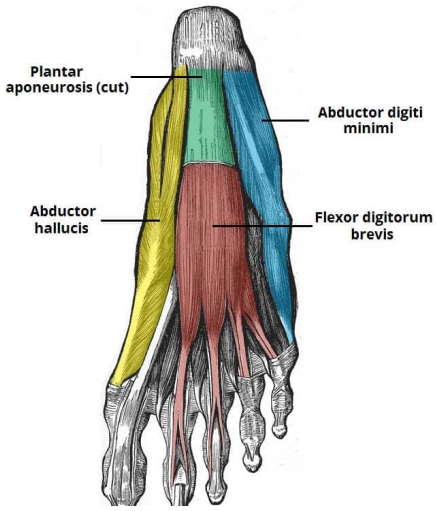
Scheme showing some factors maintaining the medial longitudinal arch of the foot

Medsynapse by Dr. Nikita

Medial longitudinal arch -

- Tie beam
  - Keep the anterior & posterior Ends of arch close together
  - Help from flattening the arch
- Structures acting
  - Plantar aponeurosis
  - Abductor hallucis





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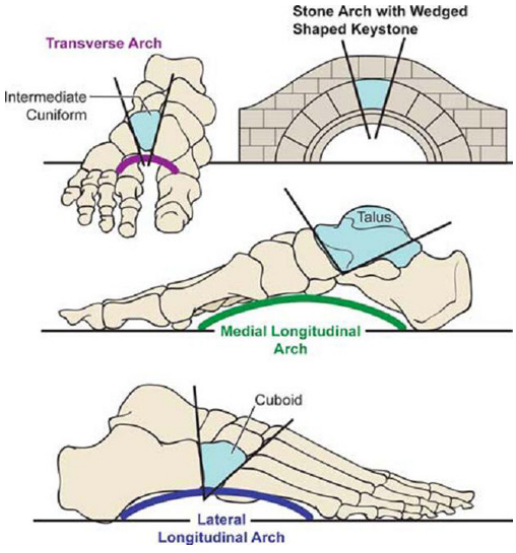
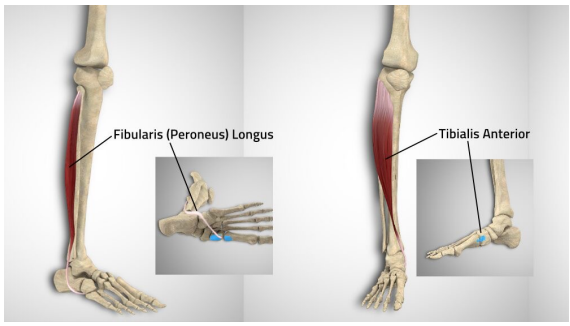
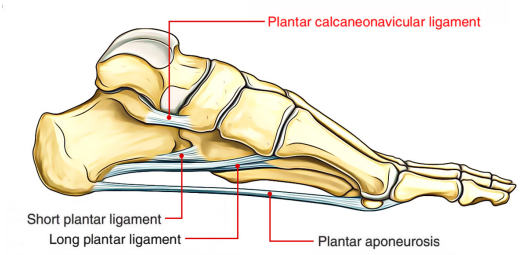
Features	Medial Longitudinal arch	Lateral longitudinal arch
Anterior pillar	Talus, navicular, 3 cuneiform and 1st, 2nd and 3rd metatarsal	Cuboid and 4th, 5th metatarsals
Posterior pillar	Medial half of calcaneum	Lateral half of calcaneum
Main joint involved	Talo calcaneonavicular joint (TCN)	Calcaneocuboid joint
Summit	Superior articular surface of Talus	Superior articular surface of calcaneum at the leveled Subtalar joint
Extremities (piers)	Tuberosity of calcaneum posteriorly and Heads of 1st, 2nd, 3rd metatarsal anteriorly	Plantar surface of calcaneum posteriorly and Heads of 4th, 5th metatarsals anteriorly
Ligament/intersegmental ties	Plantar calcaneonavicular ligament (**spring ligament**)	Long and short plantar ligaments
Tie beams	Plantar aponeurosis (medial part) Abductor hallucis Medial part of flexor digitorum brevis	Plantar aponeurosis (lateral part) Abductor digiti minimi
Slings	Tibialis posterior Flexor hallucis longus Flexor digitorum longus Sling formed by tibialis anterior and peroneus longus	Peroneus longus Peroneus brevis

Medsynapse by Dr. Nikita







Medsynapse by Dr. Nikita

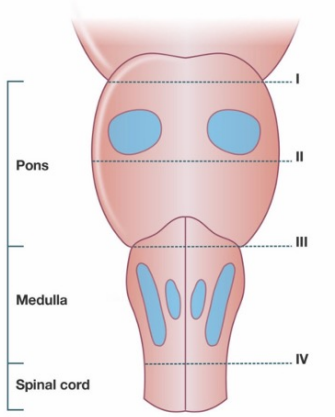
Transection at Level II marked in the below image with intact vagi results in

(a) Hyperventilation

(b) Deep and slow breathing

(c) Apneustic breathing

(d) Rapid and shallow breathing



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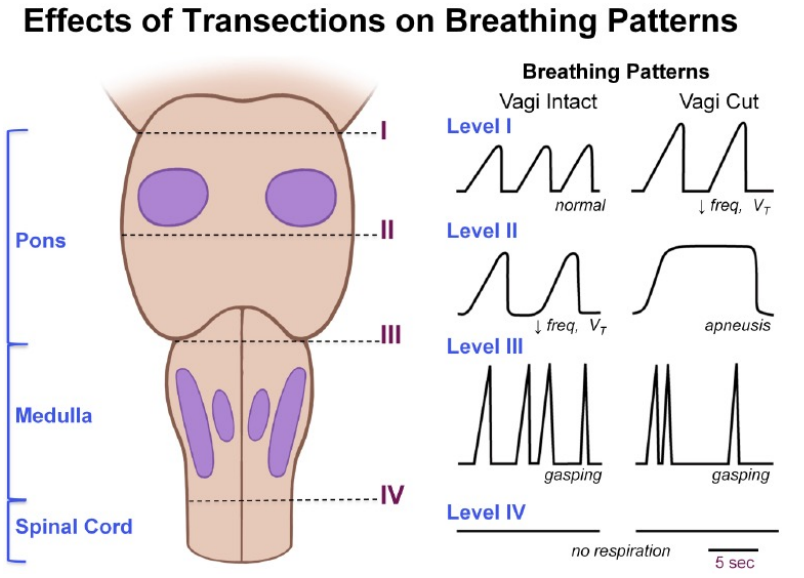


Medsynapse by Dr. Nikita

When an ion on one side of a membrane cannot diffuse through the membrane, the distribution of other ions to which the membrane is permeable is affected in a predictable way. This is given by

(a) Gibbs Donnan equation

(b) Nernst equation

(c) Goldmann equation

(d) Henderson equation

The Gibbs–Donnan effect describes the behavior of charged particles near a semipermeable membrane. The Nernst equation describes the electrochemical equilibrium in terms of the reversal potential.

Dicrotic notch is caused by _____

(a) Closing of mitral valva

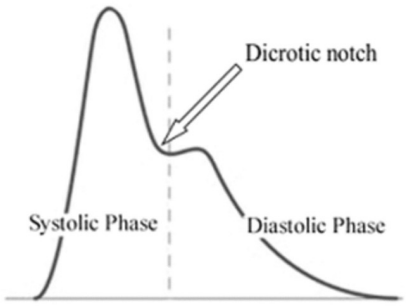
(b) Closing of aortic valva

(c) Opening of mitral valva

(d) Opening of aortic valva

Medsynapse by Dr. Nikita

The dicrotic notch is a prominent and distinctive feature of the pressure waveform in the central arteries. It is universally used to demarcate the end of systole and the beginning of diastole in these arteries.



Medsynapse by Dr. Nikita

Which of the following metabolic reaction is not carried by non-microsomal enzymes?

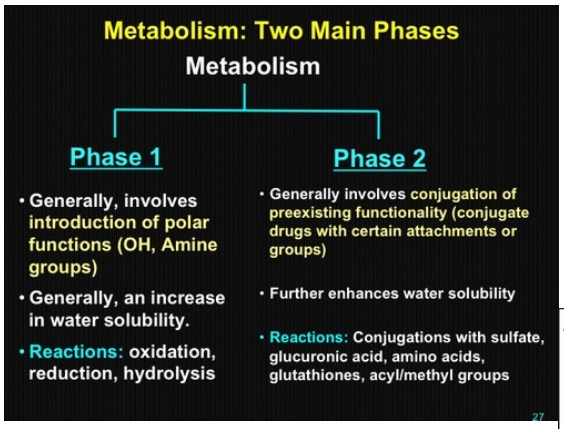
(a) Glycine conjugation

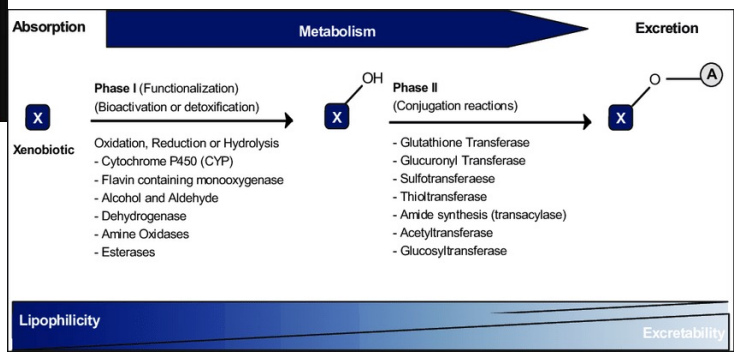
(b) Glucuronide conjugation

(c) Sulfate conjugation

(d) Acetylation

Medsynapse by Dr. Nikita





Medsynapse by Dr. Nikita

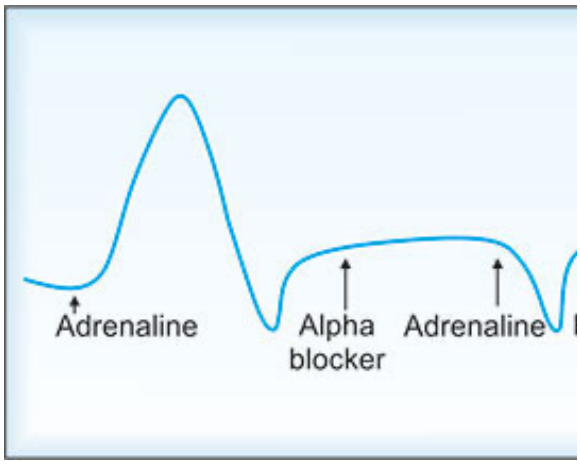
The most appropriate description of vasomoter reversal of Dale is

(a) Stimulation of alpha1 followed by stimulation of beta 2

(b) Block of alpha1 followed by stimulation of beta 2

(c) Stimulation of alpha1 followed by block of beta 2

(d) Stimulation of beta1 followed by block of beta 2



Medsynapse by Dr. Nikita

Which of the following is wrongly associated?

(a) Theophylline: non-selective PDE inhibitor

(b) Sildenafil: selective PDE-5 inhibitor

(c) Inamrinone: selective PDE-2 inhibitor

(d) Roflumilast: selective PDE-4 inhibtor

Medsynapse by Dr. Nikita

Non-selective PDE inhibitors

- Theophylline
- Caffeine
- Theobromine
- Pentoxifylline

Selective PDE inhibitors

- PDE-1 = Vinpocetine
- PDE-2 = Anagralide, Oxindole, EHNA
- PDE-3 = Inamrinone, Cilastazol, Milrinone
- PDE-4 = Drotaverine, Roflumilast, Cilomilast, Ibudilast, Piclamilast, Luteolin
- PDE-5 = Sildenafil, Tadalafil, Vardenafil, Lodenafil, Avanafil, Udenafil, Dipyridamole
- PDE-6 = Zaprenast, Dipyridamole
- PDE-7 = Quinazoline
- PDE -10 = Papaverine

Medsynapse by Dr. Nikita

Which of the following has no anti-factor IIa activity?

(a) Unfractionated heparin

(b) Enoxaparin

(c) Fondaparinux

(d) Dalteparin

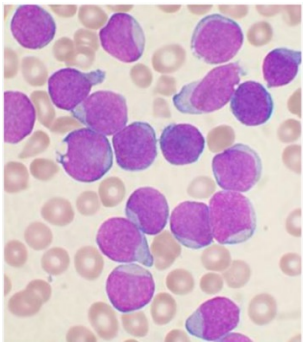
Medsynapse by Dr. Nikita

Parenteral anticoagulants used in acute care medicine

	Unfractionated Heparin (UFH)	Low molecular weight heparin	Fondaparinux	Argatroban	Bivalirudin
Source	Biological	Biological	Synthetic	Synthetic	Synthetic
Molecular weight	~15,000 Heterogeneous mixture	~5,000 Heterogeneous mixture	1,727	508	2,180
Biological targets	Factor Xa & IIa (thrombin) Some anti-platelet effect	Factor Xa >> Factor IIa (~4:1 to 2:1 ratio)	Factor Xa	Direct thrombin inhibitor (reversible)	Direct thrombin inhibitor (reversible)
Half-life	~1 hour (may increase at higher doses)	~3-6 hours with normal renal function	17-21 hours with normal renal function	45 minutes (~180 min hepatic dysfunx)	25 minutes
Metabolism/ excretion	Reticuloendothelial voodoo	~10-40% Renal	Renal	Hepatic metabolism	~80% serum proteases ~20% excreted by kidneys
Use in renal failure	Fine for renal failure	Contraindicated if GFR <30	Contraindicated if GFR <30	Fine for renal failure (no dose adjustment)	OK, but need dose reduction & careful titration
Monitoring	Anti-Xa level (optimally) PTT (less optimal)	Anti-Xa level 4 hrs post dose	Anti-Xa level 4 hrs post dose	PTT level	PTT level
Antidote?	Protamine Highly effective	Protamine; Partially effective	No antidote Long half-life	No antidote (short half-life)	No antidote (very short half-life)
Risk of HIT	Highest risk (absolute risk usually low; depends on dose & clinical context).	Considerably lower than unfractionated heparin.	No risk	No risk	No risk
Typical role in ICU	Workhorse anticoagulant (especially in patients with renal insufficiency or need for procedures).	Good for patients with adequate renal function, no anticipated procedures & adequate dermal blood perfusion.	Low dose (2.5 mg QD) excellent for prophylaxis and/or acute coronary syndrome. Long half-life makes therapeutic anticoagulation awkward.	- Treatment of HIT. - Treatment of heparin resistance.	- Treatment of HIT. - Anticoagulation for ECMO, cardiothoracic surgery.

Medsynapse by Dr. Nikita

4-year-old male child presents with fever and fatigue of 2 months duration. On examination, he has generalized lymphadenopathy, splenomegaly, hepatomegaly, and testicular enlargement. Lab investigations show LDH-644mg/dl, TLC - 41900/ mm3, Hb -9.7g/dl and Plt-104000/uL. Marrow is hypercellular and aspirate is as shown below. The cells are myeloperoxidase negative and often contain periodic acid-Schiff-positive cytoplasmic material. All the following are favourable prognostic markers for the condition except:



(a) Low white cell count

(b) Hyperdiploidy

(c) Age less than 2 years

(d) Presence of a t(12-21)

Prognostic factors in ALL

Prognostic factors	Good	Bad
Age	2-9 years	<1 year or >10 years
Sex	Female	Male
Race	White	Black
CNS leukemia	Absent	Overt
Hepatosplenomegaly, Lymphadenopathy	Absent	Massive
Mediastinal mass	Absent	Present
Testicular involvement	Absent	Present
WBC count	<10,000/mm^3	>2,00,000/mm^3
FAB Type	L1	L2,L3
Cytogenetics	Hyperdiploidy	Hypodiploidy
Immunophenotype	B-cell, early pre-B	T cell
Translocation	T(12,21),Notch 1,HOX 11	t(9,22),t(4,11)

Identify the incorrect match.

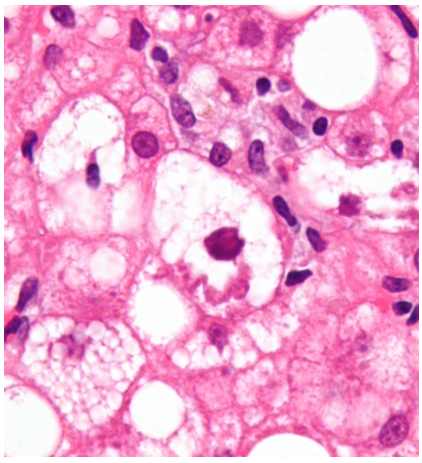
(a) Mallory-Denk bodies-Alcoholic liver disease

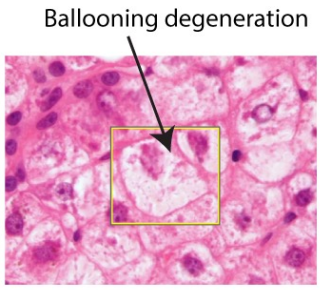
(b) Councilman bodies-Chronic hepatitis

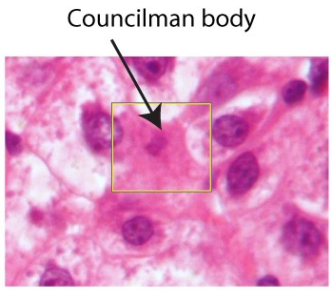
(c) Ground glass hepatocytes-Hepatitis B

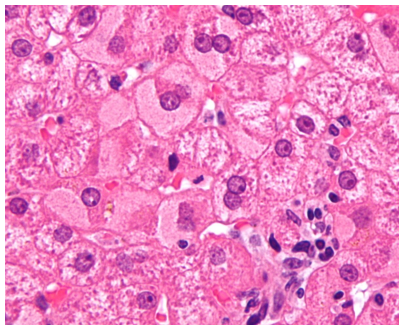
(d) Onion skin fibrosis-Primary sclerosing cholangitis

Medsynapse by Dr. Nikita









Medsynapse by Dr. Nikita

All are examples of type II hypersensitivity except:

(a) Autoimmune haemolytic anaemia

(b) Goodpasture syndrome

(c) Pernicious anaemia

(d) Poststreptococcal glomerulonephritis

Microbiology

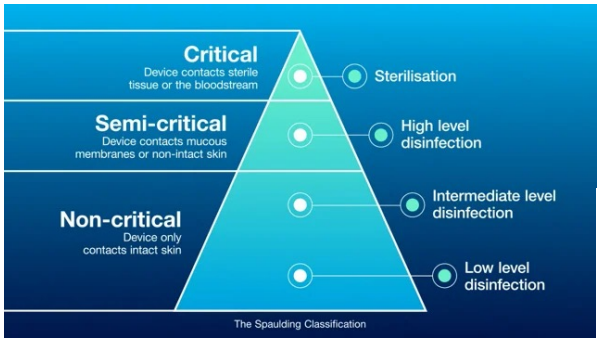
Which is false about spaulding classification?

(a) Noncritical items also included in classification

(b) Semicritical items- contact with mucus membrane

(c) Semicritical items- needs low disinfectant

(d) Cardiac catheter, e.g. of critical items



The Spaulding Classification

Patient Contact	Examples	Device Classification	Minimum Inactivation Level
Intact skin		Non-Critical	Cleaning and/or Low/Intermediate Level Disinfection
Mucous membranes or non-intact skin		Semi-Critical	High Level Disinfection
Sterile areas of the body, including blood contact		Critical	Sterilization

A 4-year-old boy developed bloody diarrhea and abdominal cramps. The bacteria isolated from the stool specimen did not ferment lactose or mannitol. Which of the following organisms is implicated here?

(a) Shigella dysenteriae

(b) Shigella flexneri

(c) Shigella boydii

(d) Shigella sonnei

Medsynapse by Dr. Nikita

Table A. Classification of Shigella subgroups

Subgroup	Species	Number of Serotypes	Fermentation of D-mannitol
A	dysenteriae	15	-
B	flexneri	8[a]	+
C	boydii	19[b]	+
D	sonnei	1	+

[a] Group B serotypes 1–5 are subdivided into 11 subserotypes

[b] Although the numbering scheme for Group C serotypes extends to serotype 20, there are only 19 serotypes because *S. boydii* 13 is now reclassified as *Escherichia albertii*, and has been removed from the scheme

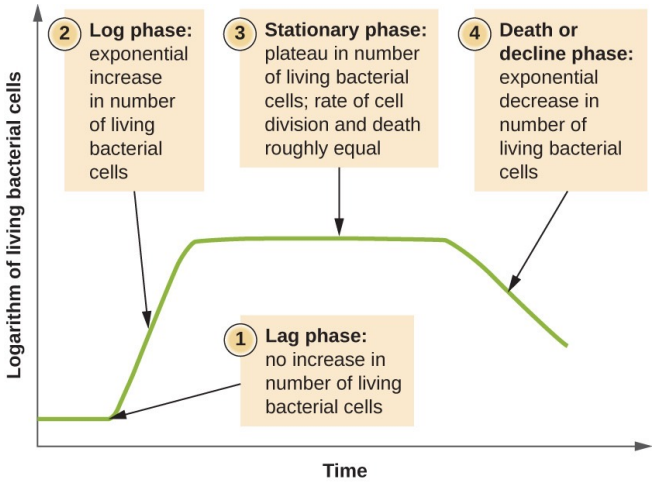
Cells attain maximum size in which phase of bacterial growth

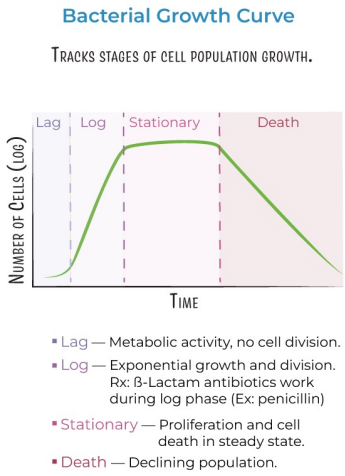
(a) Lag phase

(b) Log phase

(c) Stationary phase

(d) Decline phase





Medsynapse by Dr. Nikita

Relapse is seen in ?

(a) Plasmodium vivax and falciparum

(b) Plasmodium ovale and falciparum

(c) Plasmodium vivax and ovale

(d) Plasmodium vivax and malariae

Medsynapse by Dr. Nikita

Which of the following indices are used to determine the sex of an individual?

1. Intermembral index

2. Sternal index

3. Corporobasal sacral index

4. Ischiopubic index

5. Cephalic index

(a) 2, 3 and 4
(b) 1, 2, 3 and 4
(c) 3, 4 and 5
(d) 1, 2 and 5

- Cephalic index = $\frac{\text{maximum breadth of the skull}}{\text{maximum length of the skull}} \times 100$
- Brachial index = $\frac{\text{Length of the Radius}}{\text{Length of the Humerus}} \times 100$
- Crural index = $\frac{\text{Length of Tibia}}{\text{Length of Femur}} \times 100$
- Humero-femoral index = $\frac{\text{Length of Humeus}}{\text{Length of Femur}} \times 100$
- Inter-membral index = $\frac{\text{Length of Humerus+Length of Radius}}{\text{Length of Femur+Length of Tibia}} \times 100$

- Medullary index = $\frac{\text{Diameter of medulla}}{\text{Diameter of whole bone}} \times 100$
- Sciatic notch index = $\frac{\text{Width of notch}}{\text{Depth of notch}} \times 100$
- Washburn Ischiopubic index = $\frac{\text{Pubic length}}{\text{Ischial length}} \times 100$
- Corporobasal sacral index = $\frac{\text{Breadth of 1st sacral vertebra}}{\text{Breadth of base of sacrum}} \times 100$
- Sternal index = $\frac{\text{Manubrial length}}{\text{Body length}} \times 100$

Which of the following organs is tested in Breslau's second life test?

(a) Lungs

(b) Stomach

(c) Liver

(d) Heart

Medsynapse by Dr. Nikita

HYDROSTATIC TEST

- It is breslau's first life test,to determine whether the lung has respired or not,by immersing the lung or pieces of lung and check the flotation
- Each lung separated and placed in water
- INFERENCE: Floats - Respiration occurred

  Sinks - No respiration
- Fallacies- Lungs Sinks: Pneumonia,Atelectasis

  Lungs float: Putrefaction

STOMACH BOWEL TEST (BRESLAU'S SECOND LIFE TEST)

- Test is done to determine whether the child was born alive or not.

Principle

- Some air is swallowed during respiration in a live born child and detecting the presence of this air in these viscera constitutes the basis for this test.

Procedure

- Remove stomach and duodenum separately by cutting in
- ligatures.
- Place them both in water. See whether they float or sink.
- f they float, make a small cut while under water to see air-
- bubbles coming up.

PSM

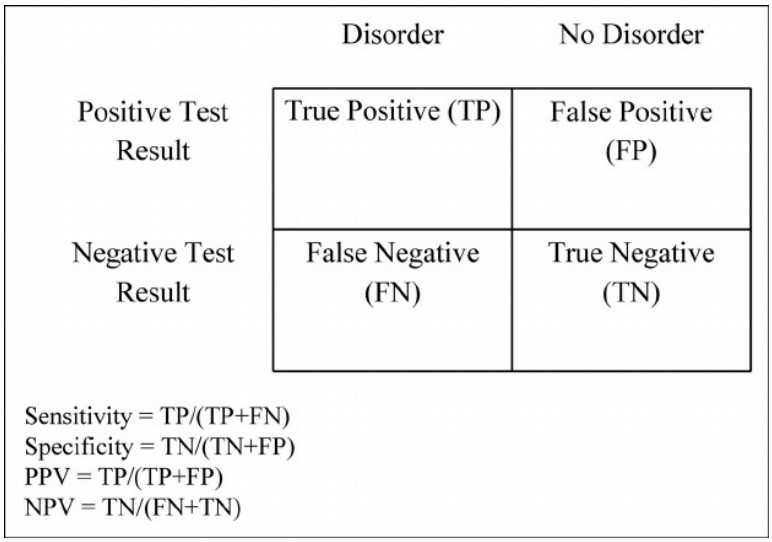
A drug company is developing a new pregnancy test kit for use on an outpatient basis. The company used the pregnancy test on 100 women who are known to be pregnant out of which 99 showed positive. Out of 100 non-pregnant women on whom this test was tried, 90 showed negative result. What is the sensitivity of this test?

(a) 90%

(b) 99%

(c) Average of 90 and 99

(d) Can't be calculated from data



	Disorder	No Disorder
Positive Test Result	True Positive (TP)	False Positive (FP)
Negative Test Result	False Negative (FN)	True Negative (TN)

Sensitivity = TP/(TP+FN)
Specificity = TN/(TN+FP)
PPV = TP/(TP+FP)
NPV = TN/(FN+TN)

In Maslow's hierarchy of needs, which of the following is at the top of the pyramid?

(a) Esteem recognition

(b) Physiological needs

(c) Belonging and affection

(d) Self-actualization

Blood pressure data of 200 persons were collected. The first quartile BP of data was 94 mmHg and the third quartile was 110 mmHg. How many patients lie between the 3rd and 4th quarters?

(a) 25

(b) 50

(c) 100

(d) 200

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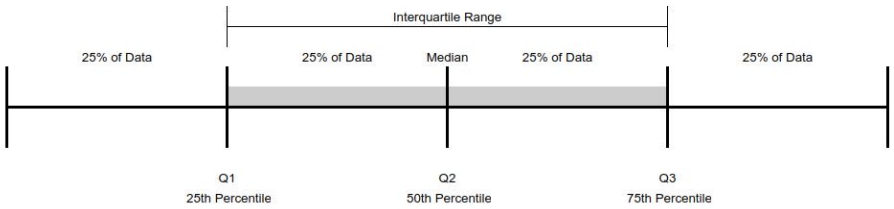
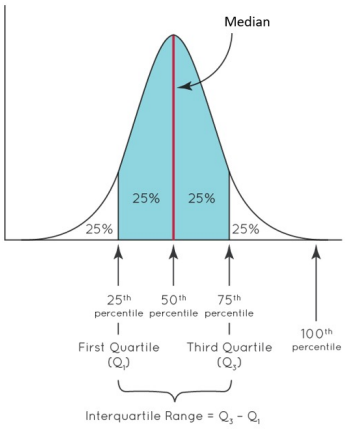




A randomized trial comparing the efficacy of two drugs showed a difference between the two with a p value of <0.005. In reality, both drugs do not differ at all. This is an example of:

(a) Alpha error

(b) Beta error

(c) 1 - a

(d) 1 - ß

Type I and Type II Error

Null hypothesis is ...	True	False
Rejected	**Type I error** False positive Probability = α	**Correct decision** True positive Probability = 1 - β
Not rejected	**Correct decision** True negative Probability = 1 - α	**Type II error** False negative Probability = β

Medsynapse by Dr. Nikita

ENT

Improvement in nasal patency on drawing the cheeks laterally is done in which of the following

(a) Epley's manoeuvre

(b) Heimlich manoeuvre

(c) Cottle's test

(d) Trotter's method

Medsynapse by Dr. Nikita

Ophthalmology

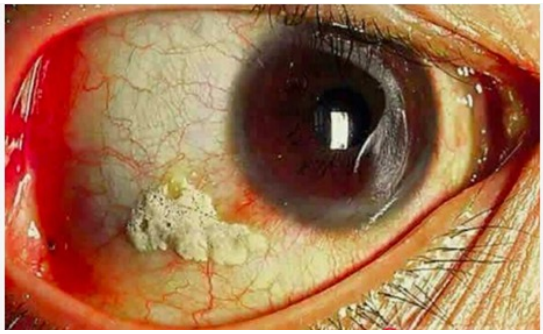
The grading of the following image corresponds to?

(a) X1

(b) X2

(c) X3

(d) XS



XN	Night blindness
X1A	Conjunctival xerosis
X1B	Bitot's spot
X2	Corneal xerosis
X3A	Corneal ulceration/keratomalacia (< $^1/_3$ corneal surface)
X3B	Corneal ulceration/keratomalacia (≥ $^1/_3$ corneal surface)
XS	Corneal scar
XF	Xerophthalmic fundus

Prevalence criteria for determining the Xerophthalmia problem

Criteria	Prevalence in population at risk (6 months to 6 years)
Nightblindness	more than 1 per cent
Bitot's spots	more than 0.5 per cent
Corneal xerosis/corneal ulceration/keratomalacia	more than 0.01 per cent
Corneal ulcer	more than 0.05 per cent
Serum retinol (less than 10 mcg/dl)	more than 5 per cent

Medicine

A patient gives chronic history of diarrhea and blood in stool presents with multiple fistulae in the perineum and multiple strictures in small intestine. The diagnosis is

(a) Crohn's disease

(b) Radiation enteritis

(c) Ulcerative colitis

(d) Ischemic bowel disease

Which of the following is not a feature of Gerstmann syndrome?

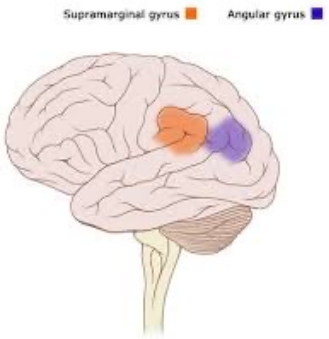
(a) Finger agnosia

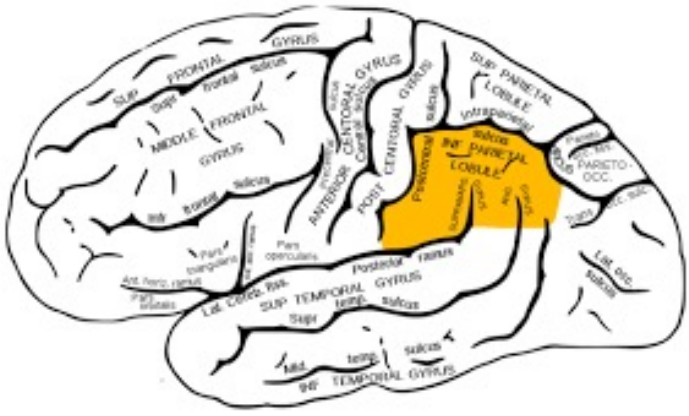
(b) Alexia

(c) Acalculia

(d) Anomia

Medsynapse by Dr. Nikita





Medsynapse by Dr. Nikita

Which of the following is unlikely to be seen in a patient with aortic stenosis?

(a) Ejection systolic murmur

(b) Rapidly rising pulse with sudden collapse

(c) Paradoxical splitting of S2

(d) Lateral displacement of the apical impulse

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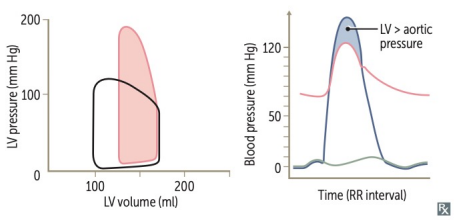
Aortic stenosis



↑ LV pressure
↑ ESV
No change in EDV (if mild)
↓ SV

Ventricular hypertrophy → ↓ ventricular compliance → ↑ EDP for given EDV

Medsynapse by Dr. Nikita

Which of the following is a feature of Prerenal azotemia?

(a) Fractional excretion of sodium >2%

(b) BUN/PCR ratio 10-15 : 1

(c) Urine osmolality <300 mOsm/L

(d) UCr/PCr >40

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Distinguishing Prerenal azotemia and ATN

Parameter	Prerenal AKI	Acute Tubular Necrosis
Urinary sediment	Normal/Hyaline casts	Epithelial cell casts
Urine specific gravity	>1.020	<1.020
Urine sodium (mmol/L)	<20	>40
FE_{Na}	<1%	>2%
FE_{urea}	<35%	>50%
Urine osmolality (mOsmol/kg H_2O)	>500	<350
Urine-Plasma creatinine ratio	>40	<10
Plasma BUN-creatinine ratio	>20	<15

Medsynapse by Dr. Nikita

A 20-year-old female patient presents with bilateral conductive deafness, bloody nasal discharge, and hemoptysis. Chest radiography shows multiple and bilateral cavities. Serum creatinine is 3 mg/dL. What is the most likely diagnosis?

(a) Tuberculosis

(b) Eosinophilic granulomatosis with polyangiitis

(c) Granulomatosis with polyangiitis

(d) Polyarteritis nodosa

Surgery

Which of the following is most likely in a woman with bilateral and multicentric breast lumps?

(a) Ductal carcinoma in situ (DCIS)

(b) Lobular carcinoma in situ (LCIS)

(c) Mucinous carcinoma

(d) Papillary carcinoma

AFP is used as a tumor marker in which of the following cancers?

1. Yolk sac tumor

2. Hepatoblastoma

3. Cholangiocarcinoma

4. Fibrolamellar HCC

5. HCC

(a) 2 and 3
(b) 3, 4 and 5
(c) 1 and 3
(d) 1, 2 and 5

Medsynapse by Dr. Nikita

Identify the instrument:

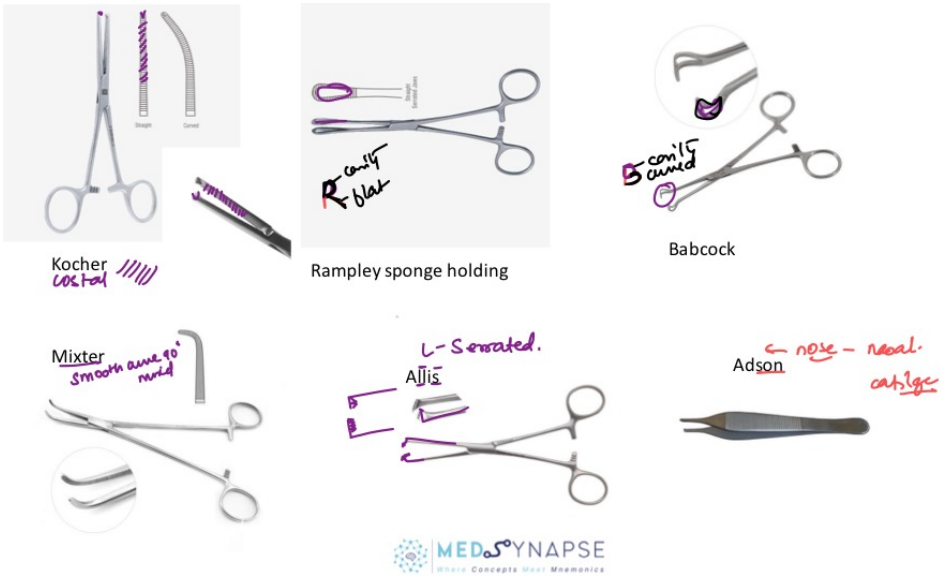
(a) Allis tissue forceps

(b) Babcock's forceps

(c) Lane's tissue holding forceps

(d) Kocher's hemostatic forceps

Medsynapse by Dr. Nikita



An elderly woman was brought to the hospital with a history of severe loin pain for the past 7 hours. Ultrasound of the kidney reveals a 2.5 cm renal stone. What is the treatment of choice for this patient?

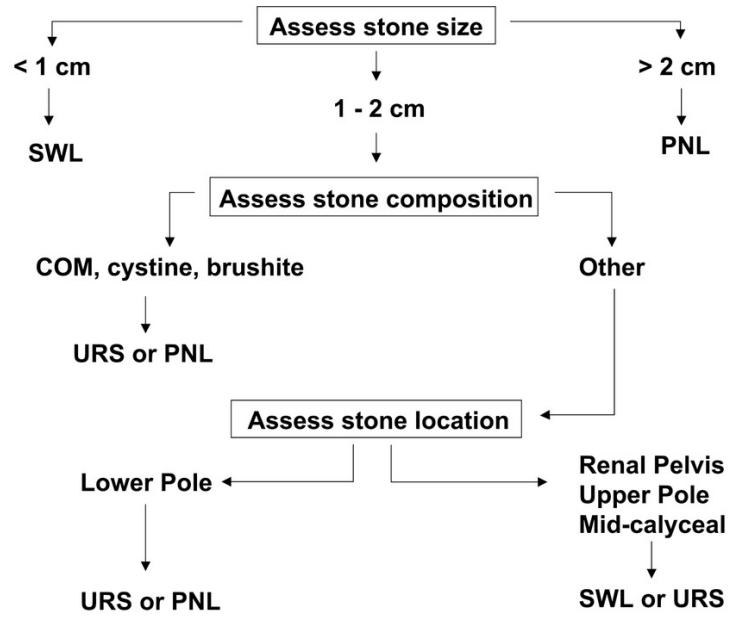
(a) Extracorporeal shock-wave lithotripsy

(b) Percutaneous nephrolithotomy

(c) Ureteroscopic removal

(d) Open surgery

Medsynapse by Dr. Nikita



A 21-year-old male patient presented to the hospital after a road traffic accident with a fracture of the pelvis. There was urinary retention and blood at the urethral meatus. On digital rectal examination, he had a high-riding prostate. What is the most probable diagnosis?

(a) Rupture of the membranous urethra

(b) Rupture of the bulbar urethra

(c) Rupture of bladder

(d) Rupture of prostatic

Children display pseudoparalysis of Parrot in which infectious disease?

(a) Neurocysticercosis

(b) Congenital syphilis

(c) Congenital toxoplasmosis

(d) Congenital rubella

A child is below 3rd percentile for height. His growth velocity is normal, and chronological age is more than skeletal age. The most likely diagnosis is

(a) Familial short stature

(b) Primordial dwarfism

(c) Constitutional delay in growth

(d) Hypopituitarism

Medsynapse by Dr. Nikita

Features	Familial short stature	Constitutional delay in growth
Sex	Both equally affected	More common in boys
Length at birth	Normal	Normal (starts falling < 5th centile in 1st 3 years of life)
Family history	Short stature	Delayed puberty
Parents stature	Short (one or both)	Average
Height velocity	Normal	Normal
Puberty	Normal	Delayed
Bone age (BA) and chronological age (CA)	BA = CA > height age	CA > BA = height age
Final height	Short, but normal for target height	Normal

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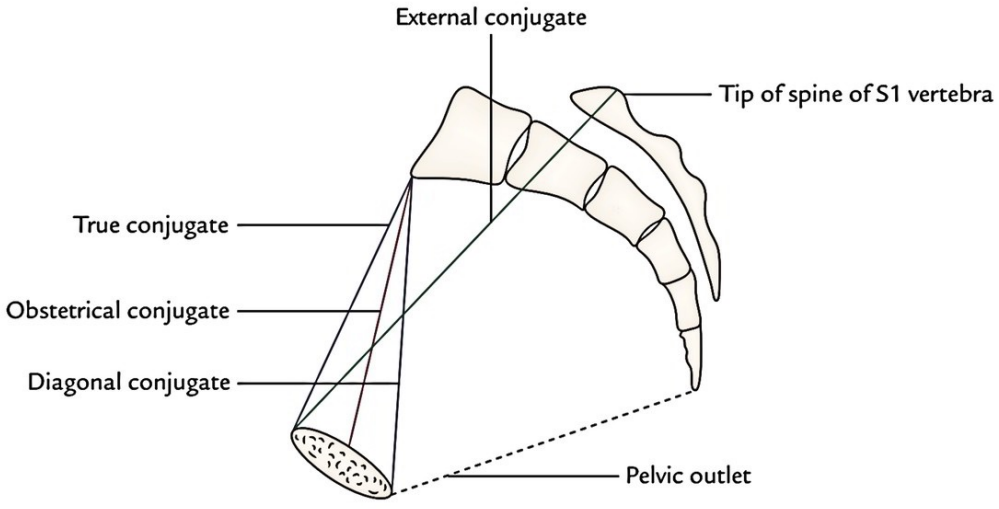
Obstetric conjugate is

(a) 8.5 cm

(b) 10 cm

(c) 12 cm

(d) 14 cm



Medsynapse by Dr. Nikita

Twinning after eighth day of fertilization results in formation of:

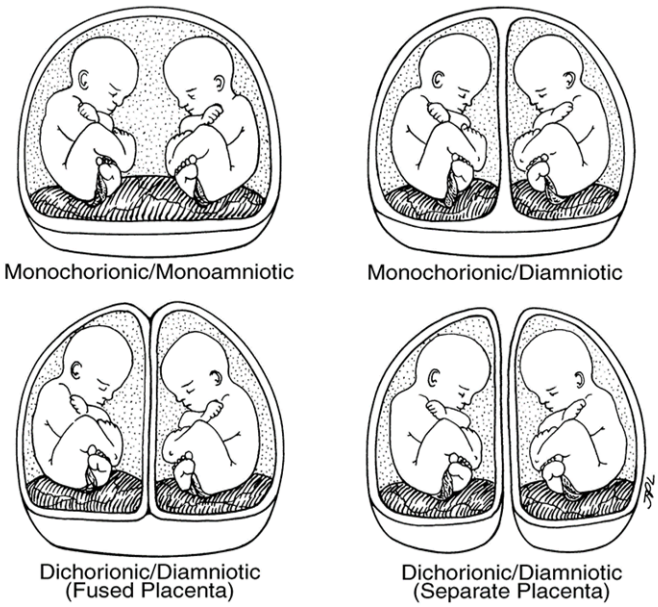
(a) Monozygotic monoamniotic monochorionic twins

(b) Dizygotic diamniotic dichorionic twins

(c) Dizygotic diamniotic monochorionic twins

(d) Monozygotic twins

Medsynapse by Dr. Nikita



Medsynapse by Dr. Nikita

A 24-year-old primigravida delivered a full-term male baby by assisted forceps delivery. What is not an advantage of this mode of delivery?

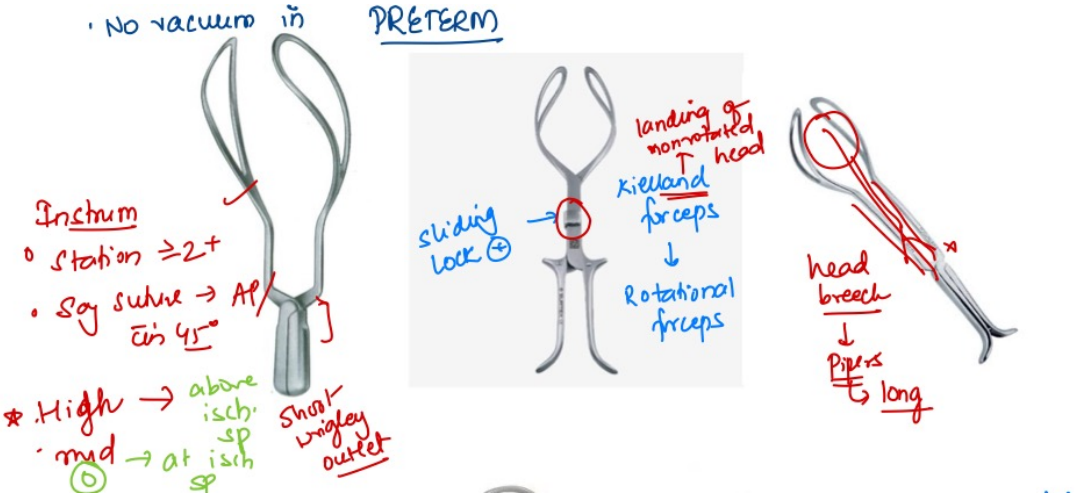
(a) No maternal effort is needed

(b) Quick in case of fetal distress

(c) Can be used in preterm

(d) Promotes autorotation

Medsynapse by Dr. Nikita



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All the following statements are true regarding missed abortion except:

(a) Cervical os is closed

(b) Dead foetus is seen on USG

(c) Size of uterus corresponds to period of amenorrhoea

(d) Bleeding is absent

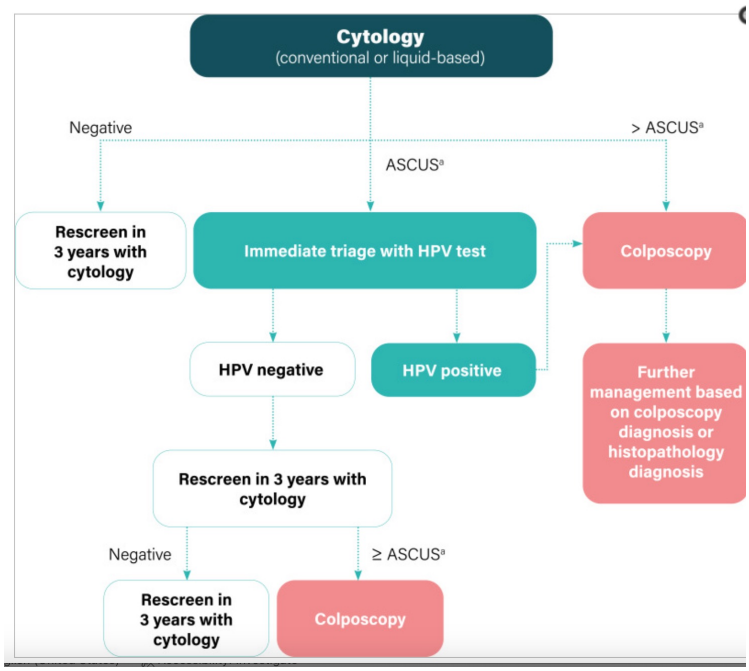
The next step in a 28-year-old woman with Atypical squamous cells of unknown significance (ASC-US) on Pap smear is

(a) Routine Pap smear every 3 years

(b) Repeat Pap smear in 12 months

(c) HPV DNA testing

(d) Colposcopy



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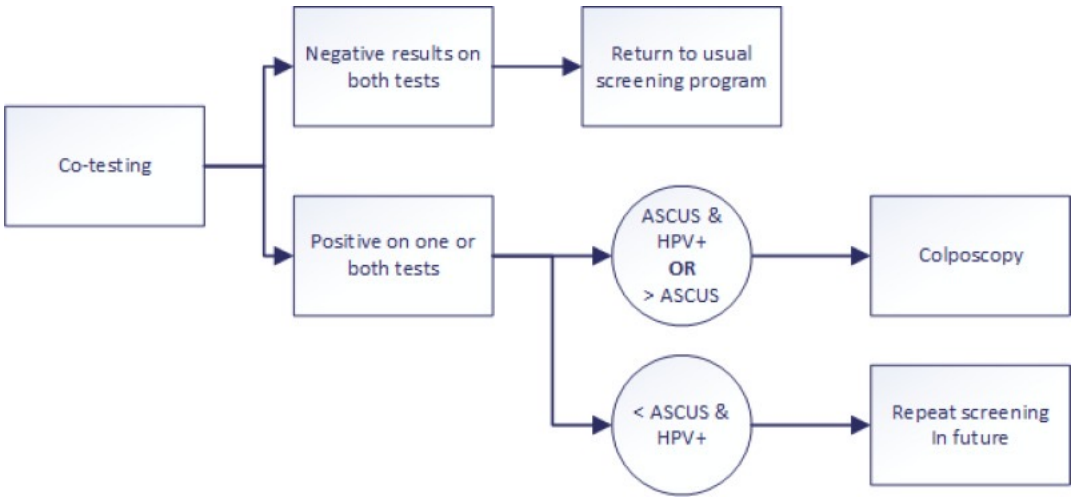

Medsynapse by Dr. Nikita

Table 1. Overview of Cervical Cancer Screening Guidelines [1,12-14]

Guideline	Testing Ages	Testing Guidelines
ACOG	Begin: 21 years End: 65 years	• 21–29 years: Pap test every 3 years • 30–65 years: Cotest every 5 years OR Pap test every 3 years
WPSI	Begin: 21 years End: 65 years	• 21–29 years: Pap test every 3 years • 30–65 years: Cotest every 3 years OR Pap test every 5 years
USPSTF	Begin: 21 years End: 65 years	• 21–29 years: Pap test every 3 years • 30–65 years: Pap test every 3 years OR cotest every 5 years OR HPV test every 5 years
ACS	Begin: 25 years End: 65 years	• 25–65 years: HPV test every 5 years (if not available, then cotest every 5 years or Pap test every 3 years)

Abbreviations: ACOG, American College of Obstetricians and Gynecologists; ACS, American Cancer Society; HPV, human papilloma virus; USPSTF, US Preventive Services Task Force; WPSI, Women's Preventive Services Initiative.

Dermatology

Histopathological examination would not reveal acantholysis in patients with:

(a) Pemphigus

(b) Darier's disease

(c) Staphylococcal scalded skin syndrome

(d) Bullous pemphigoid

In which of the following patients would a lower amount of inhalational anesthetic be administered?

1. 59-year-old chronic alcoholic

2. 22-year-old addicted to cocaine

3. 26-year-old pregnant lady

4. 6-month-old infant

5. 33-year-old man with serum calcium 12.5mg/dL

(a) 1 & 3 only
(b) 2, 3 & 5 only
(c) 3 & 5 only
(d) 3, 4 & 5 only

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Factors that increase MAC	Factors that decrease MAC	Factors that do not affect MAC
•Age (6 months) •Drugs · Ethanol (chronic) · Amphetamines (acute) · Cocaine · Ephedrine •Hypernatremia •Hyperthermia (<42 degrees C) •Red Hair	•Increased age •Drugs · Ethanol (acute) · Amphetamines (chronic) · IV anesthetics · Benzodiazepines · Alpha-2 agonist · Opioids · Local anesthetics · Lithium · Verapamil •Hyponatremia/hypercalcemia •Hypothermia •Hyperthermia (if >42 degrees C) •Hypercarbia •Hypoxia •Hypotension (MAP < 40 mmHg) •Anemia (Hgb <5 g/dL) •Pregnancy	•Duration of anesthesia •Gender •Height/weight •Hypothyroid/hyperthyroidism

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Banana and lemon sign are seen in which of the following fetal anomalies?

(a) Hydrops fetalis

(b) Neural tube defect

(c) Downs syndrome

(d) IUD

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Psychiatry

An IT employee is feeling guilty, hopeless, and not able to concentrate on work. His symptoms started 3 years back when he entered college. What is the most likely diagnosis?

(a)Depressive disorder

(b) dysthymia

(c) Adjustment disorder

(d) Cyclothymic disorder

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Orthopedics

The image shows a boy with a deformity of left upper limb. Select the incorrect statement regarding the complications of this condition:

(a) Tardy Ulnar Nerve Palsy is an early complication

(b) Avascular necrosis can occur

(c) Fishtail deformity can occur

(d) Growth Arrest can occur

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