



## **500 HIGH-YIELD NUGGETS**

## 500 HIGH-YIELD FACTS

1.

The MCC of aortic rupture is a motor vehicle accident, will show an enlarged mediastinum on x-ray.

2.

Winged scapula is caused by injury to the long thoracic nerve.

3.

The coracobrachialis is innervated by the musculocutaneous nerve.

4.

Radial head subluxation (Nursemaid's elbow) results from pulling a child's arm while extended and pronated. Most worrisome damage is to the deep branch of the radial nerve.

5.

Wrist drop occurs as a result of damage to the radial nerve.

6.

Loss of sensation to the lateral aspect of the upper arm is caused by axillary nerve injury, a common injury seen with fracture to the surgical neck of the humerus.

7.

Taste to the anterior 2/3 of the tongue is from CN 7 (Facial n.)

8.

Taste to the posterior 1/3 of the tongue is from CN 9 (Glossopharyngeal n.)

9.

CN 3 & 4 are from the midbrain, CN 5, 6, 7, 8 are from the Pons, CN 9, 10, 11, 12 are from the Medulla.

10.

Injury to the fibular neck is a common cause of peroneal n. injury.

11.

The majority of vitamin B12 is absorbed in the distal ileum.

12.

The common bile duct is lined with cells rich in Alkaline Phosphatase.

13.

The superior 2/3 of the anal canal is hindgut, the inferior 1/3 is proctoderm (ectoderm).

14.

A pudendal nerve block is performed by administration of anesthetic at the ischial spine

15.

Hoarseness is a result of injury to the recurrent laryngeal nerve, a branch of CNX.

16.

The left testicular vein drains into the left renal vein at a 90 degree angle, the right testicular vein drains directly into the inferior vena cava.

17.

The inguinal triangle is created by the lateral margin of the rectus sheath (medial border), inferior epigastric vessels (superolateral border), and inguinal ligament (inferior border).

18.

Femoral hernias are more common in females than in males.

19.

The ACL and PCL are named based on their attachment to the tibia, not the femur.

20.

The sciatic nerve is composed of L3, L4, S1, S2, S3.

21.

The gastroduodenal artery runs on the posterior aspect of the 1<sup>st</sup> part of the duodenum.

22.

Raccoon eyes, hemotympanum, and Battle's sign are all indicative of fracture to the temporal bone.

23.

Anterior shoulder dislocations commonly affect the axillary nerve.

24.

The MCC of anterior shoulder dislocation is a direct blow, the MCC of posterior shoulder dislocation is tonic-clonic seizure and/or lightning strike.

25.

Inability to dorsiflex the foot is due to common peroneal nerve injury.

26.

The only major nerve that exits the obturator foramen is the obturator nerve.

27.

The splenic flexure is the MC area of ischemia in the GI tract, caused by the watershed area caused by the superior and inferior mesenteric arteries.

28.

The MC side-effect of SSRI's is anorgasmia.

29.

PCP inhibits the NMDA receptor, leading to aggressiveness, detachment, loss of coordination, paranoia, and hallucinations.

30.

Major depressive disorder requires a 2-week period of symptoms for diagnosis to be made.

31.

Low-level depression for at least 2 years is known as Dysthymia.

32.

It is never the right answer to tell someone else about your patient unless they give you verbal or written permission.

33.

Anorexia is seen when a patient has a BMI <17.5.

34.

The most worrisome complication of anorexia and bulimia is electrolyte abnormalities.

35.

Stabilizing a patient with acute mania can be done with Lithium, Valproic Acid, or Carbamazepine.

36.

Long-term management for bipolar disorder is Lithium.

37.

Lithium is a very small therapeutic window, therefore levels must be drawn frequently.

38.

Patients complaining of anorgasmia and/or low sex-drive while on SSRI's can be switched to Bupropion.

39.

Bradycardia, dry membranes, and mydriasis are common findings of opiate intoxication.

40.

OCD is an outward manifestation of internal anxiety, patients are aware of their problem. OCD personality disorder is characterized by pre-occupation with neatness and the patient is not aware that they have a problem.

41.

Generalized Anxiety Disorder is characterized by a minimum of three characteristics for at least six months in a row.

42.

Cleft lip is a result of failure of the maxillary prominence with the intermaxillary segment. Cleft palate is a result of failure of fusion of the palatine shelves of the maxillary prominence with the primary palate.

43.

Alzheimer's disease in the elderly is associated with the e4 allele of Apolipoprotein

E.

44.

Turner's syndrome is the MCC of primary amenorrhea, and the genetics of the disease are monosomy 45XO.

45.

The probability that a child gets an AR disease is  $\frac{1}{4}$ .

46.

The probability that a child is a carrier of an AR disease is  $\frac{1}{3}$ .

47.

The probability that a child gets an AD disease is  $\frac{3}{4}$ .

48.

All sons of mothers who are carriers of an x-lined disease are affected.

49.

All daughters of fathers with x-linked diseases will be carriers.

50.

Different phenotypic manifestations of the same disease is known as pleiotropy.

51.

The MCC of mental retardation is Down's syndrome.

52.

The MCC of mental retardation in males is Fragile-x syndrome

53.

A delta-F-508 mutation affects the CFTR gene in Cystic Fibrosis. This is an ATP-gated transmembrane protein dysfunction.

54.

Surfactant is released from Type 2 pneumocytes.

55.

The most abundant pneumocyte is the Type 1 pneumocyte.

56.

The MOA of Warfarin is to inhibit vitamin K epoxide reductase

57.

For a muscle to contract: Calcium is released from SR, it binds to troponin C, then actin binds to myosin.

58.

Restrictive lung diseases decrease the ability to take air into the lungs, obstructive lung diseases decrease the ability to remove air from the lungs.

59.

The 1<sup>st</sup> step in management of DKA is normal saline, then insulin.

60.

DEXA scan is the test of choice for determining bone mineral density.

61.

DEXA showing 1-2.5 SD is osteopenia.

62.

DEXA showing >2.5 SD is osteoporosis.

63.

The triad of Pheochromocytoma is: Headache, Intermittent BP spikes, and diaphoresis.

64.

HER2/neu overexpression is associated with increased rates of both breast and ovarian cancer.

65.

Cancer markers are not normally used to diagnose, rather they are used to rate the effectiveness of treatment.

66.

Left-sided heart failure MC shows respiratory difficulties, right-sided heart failure shows systemic swelling.

67.

Drinking plenty of fluids is the best way to decrease the risk of kidney stone formation, especially in those with a history.

68.

All patients with COPD should receive home O<sub>2</sub> and bronchodilators.

69.

MEN 1 consists of tumors of: Pancreas, Pituitary, Parathyroid.

MEN 2a consists of: Medullary carcinoma of thyroid, Pheochromocytoma, Parathyroid.

MEN 2b consists of: Medullary carcinoma of thyroid, Pheochromocytoma, Marfanoid habitus & Mucosal neuromas.

70.

Eggshell calcification of the hilar nodes is seen in Silicosis.

71.

Spaghetti & Meatball appearance on microscopy is seen with M. Furfur

72.

The 1<sup>st</sup> sign of pseudotumor cerebri is papilledema.

73.

The fat-soluble vitamins are D, E, K, and A

74.

25(OH) D is the major circulatory form of vitamin D

75.

1,25(OH)<sub>2</sub>D is the active form of vitamin D

76.

Hypercalcemia = stones, bones, groans, and psychic overtones

77.

The MCC of viral infections are CMV and EBV

78.

Vitamin E is the main antioxidant in the blood

79.

Vitamin C is the main antioxidant in the GI

80.

Vitamin K is required for factors 2,7,9,10 and Protein C & S

81.

Always give Heparin first, Warfarin second

82.

Heparin blocks thrombin and clotting factors 9,10,11,12

83.

The MC serious side-effect of heparin is HITT (heparin-induced thrombocytopenia).

84.

Vitamin A helps with visual acuity at night

85.

Alcoholics are the population who suffers most commonly from a B1 deficiency

86.

Dry BeriBeri = Alcoholic symptoms without heart failure

Wet BeriBeri = Alcoholic symptoms with heart failure

87.

The 4 D's of Pellagra are: Diarrhea, Dermatitis, Dementia, and Death

88.

Pyridoxine deficiency is common with use of Isoniazid, causing peripheral neuropathies

89.

The umbilical cord contains two arteries and one vein. The vein supplies the fetus with oxygenated blood, the arteries carry away deoxygenated blood

90.

Lithium use in pregnancy leads to Ebstein's anomaly (low-implanted tricuspid valve)

91.

Diethylstilbestrol is a common cause of clear cell carcinoma of the vagina.

92.

The next best step before prescribing Accutane is to get a pregnancy test

93.

Use of ACEI's in pregnancy can cause renal damage

94.

Branchial Arch 1 supplied by CN V2, V3

Branchial Arch 2 supplied by CN VII

Branchial Arch 3 supplied by CN IX

Branchial Arch 4 & 6 supplied by CN X

95.

1<sup>st</sup> branchial cleft gives the external auditory meatus

96.

Branchial clefts 2-4 form the temporary cervical sinuses

97.

Monozygotic twins = 1 placenta, 1 chorion, 2 amniotic sacs

Dizygotic twins = 2 placentas, 2 chorions, 2 amniotic sacs

98.

The thymus is derived from the epithelium of the 3<sup>rd</sup> branchial pouch

99.

The ventral pancreatic bud gives: Pancreatic head, uncinat process, and main pancreatic duct

100.

The dorsal pancreatic bud gives: Body of pancreas, tail of pancreas, isthmus, accessory pancreatic duct

101.

Wolffian ducts develop into the Epididymis, Ejaculatory duct, Seminal vesicles, and ductus deferens

102.

Mullerian ducts develop into the fallopian tube, uterus, and upper part of vagina

103.

Male gonadal development is dependent on DHT

104.

Female gonadal development is dependent on estrogen

105.

The diaphragm is derived from the septum transversum, pleuroperitoneal folds, body wall, and dorsal mesentery of the esophagus

106.

The most abundant type of white blood cell is the neutrophil

107.

Eosinophils are protective against helminthes and protozoal infections

108.

Schwann cells myelinate the axons

109.

Layers of the skin from outside-in are: Stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, stratum basale

110.

Meissner's corpuscles are in the dermis of the palms, soles, and fingers. They are responsible for light, discriminatory touch of hairless skin

111.

Light crude touch is mediated by Merkel's corpuscles

112.

Pressure, vibration, rough touch, and tension are detected by Pacinian corpuscles

113.

Drug detoxification and steroid synthesis take place in the smooth ER

114.

The rough ER is responsible for glycosylation, addition of lysosomal enzymes, and integration of membrane proteins

115.

The innermost layer of the GI tract is the mucosa

116.

Peyer's patches are aggregates of lymphoid tissue in the ileum

117.

The 3 layers of the adrenals from outside-in are: Glomerulosa → Fasciculata → Reticularis

118.

Each cilia contains a 9+2 axoneme which provides binding sites for motor proteins

119.

Low frequency sounds are heard at the apex of the cochlea

120.

High frequency sounds are heard at the base of the cochlea

121.

Biceps are innervated by C5, C6

122.

Triceps are innervated by C6, C7, C8

123.

There are 8 CN's, 12 thoracic nerves, 5 lumbar nerves, and 5 sacral nerves

124.

Midbrain contains CN 3 and 4, Pons contains CN 5, 6, 7, 8, Medulla contains CN 9, 10, 11, 12

125.

Superior Orbital innervated by CN 4, Lateral Rectus innervated by CN 6, all other eye muscles innervated by CN 3

126.

Conjugate gaze occurs via CN 3 and 6

127.

Lumbar puncture: Skin → Ligaments → Epidural space → Dura → Subdural space → Arachnoid → Subarachnoid space

128.

Bell's palsy = Ipsilateral facial paralysis + inability to blink eye on affected side

129.

Eye movement and pupillary changes are controlled by the frontal lobe

130.

Broca's area is area 44 and 45

131.

The primary auditory cortex is in the temporal lobe at area 41 and 42

132.

Wernicke's area is in the temporal lobe at area 22

133.

The principal visual cortex is in the occipital lobe at area 17

134.

The principal motor area is at the back of the frontal lobe in area 4

135.

The principal sensory area is at the front of the parietal lobe at areas 1, 2, and 3

136.

Confabulations and anterograde amnesia are caused by lesions of the Mamillary bodies

137.

Kluver-Bucy syndrome caused by lesion to the amygdala

138.

Ataxia caused by a cerebellar lesion

139.

Spatial neglect caused by a lesion to the right parietal lobe

140.

Hypothalamus functions are: TAN HATS (thirst, adenohipophysis, neurohipophysis, hunger/satiety, autonomic regulation, temperature, sexual regulation)

141.

Posterior pituitary releases 2 things: Vasopressin and Oxytocin

142.

Basal ganglia important for motor control and learning

143.

Microglia are phagocytic cells of the nervous system

144.

Ependymal cells line the ventricles



145.  
Oligodendroglia produce myelin centrally

146.  
Schwann cells produce myelin peripherally

147.  
Astrocytes provide physical support, K<sup>+</sup> metabolism, and physical repair

148.  
Four substances can pass the BBB: Amino acids, glucose, fat-soluble substances, and L-DOPA

149.  
Agonist potency is measured with the EC<sub>50</sub>

150.  
If an antagonist is present, the EC<sub>50</sub> increases by a factor known as the 'dose ratio'

151.  
1<sup>st</sup> order elimination is proportionate to the concentration of a drug

152.  
Zero-order elimination is constant and not dependent on concentration of a drug

153.  
Alpha-1 receptors cause smooth muscle constriction

154.  
Alpha-2 receptors cause smooth muscle constriction + neurotransmitter inhibition

155.  
Beta-1 receptors cause contraction of the cardiac muscle

156.  
Beta-2 receptors cause relaxation of the lungs, bladder

157.  
Reserpine prevents norepinephrine from being stored inside vacuoles

158.  
Parasympathetic fibers are long pre, short post

159.  
Sympathetic fibers are short pre, long post

160.  
Alpha-1 agonists are: NE, Phenylephrine, Methoxamine

161.  
The Alpha-1 antagonists are: Prazosin, Terazosin, Doxazosin, Phenoxybenzamine

162.  
The Alpha-2 agonists are: Clonidine, Brimonidine

163.  
The Alpha-2 antagonists are: Phentolamine, Yohimbine

164.  
The Beta-1 agonists are: Dobutamine

165.  
The Beta-1 antagonists are: Metoprolol, Atenolol, Pindolol, Timolol

166.  
The Beta-2 agonists are: Albuterol, Isoprenaline, Isoproteranol, Metaproterenol, Salmeterol, Terbutaline

167.  
The Beta-2 antagonists are: Propranolol

168.  
MC direct cholinergic agonists are: Carbachol, Pilocarpine, Bethanecol

169.

MC indirect cholinergic agonists (AChE inhibition) are: Neostigmine, Pyridostigmine, Edrophonium, Physostigmine, Echothiophate

170.

MC anticholinergics are: Atropine, Benztropine, Scopolamine, Ipratropium

171.

Signs of cholinesterase inhibitor poisoning are: SLUDD (salivation, lacrimation, urination, digestion, defecation)

172.

P450 inducers are: Quinidine, Barbs, Phenytoin, Rifampin, Griseofulvin, Carbamazepine

173.

P450 inhibitors are: INS, Sulfonamides, Cimetidine, Ketakonazole, Erythromycin, Grapefruit juice, St. John's wart

174.

Dopamine increases BP in shock patients by maintaining renal blood flow

175.

Dobutamine stimulates the heart with causing excessive tachycardia

176.

Prazosin ass'd with 1<sup>st</sup>-dose phenomenon, get orthostatic hypotension

177.

Timolol works for open-angle glaucoma by decreasing amount of aqueous humor formation

178.

Pindolol has the greatest ISA

179.

Mannitol used to decreased ICP

180.

Acetazolamide is a carbonic anhydrase inhibitor

182.

LOOP diuretics cause: Ototoxicity, Hypokalemia, Dehydration, Allergy, Nephritis, Gout

183.

Thiazide diuretics cause Hyper: Glycemia, Lipidemia, Uricemia, Calcemia

184.

ACE inhibitors can cause: CAPTOPRIL. Cough, Angioedema, Proteinuria, Taste change, hypotension, Pregnancy issue, Rash, Increased renin, Lower angiotensin 2

185.

Nitroglycerine causes more vein dilation than arterial dilation

186.

Digitalis works by inhibiting the Na/K pump and increasing intracellular calcium concentration

187.

Adenosine works by causing hyperpolarization (blocks calcium influx and prevents potassium outflux)

188.

For CHF, we use: Inotropes, Diuretics, Vasodilators, Chronotropes, and ACEI's

189.

ACEI's decrease mortality in heart failure patients

190.

The 2 things to watch with Statin use is muscle breakdown (myoglobin) and liver function (LFTs)

191.  
1<sup>st</sup> generation anti-histamines are lipophilic and thus are sedating
192.  
2<sup>nd</sup> generation antihistamines are less sedating and have less anti-cholinergic effects
193.  
Steroids inhibit phospholipase A2
194.  
Monteleukast is a leukotriene receptor antagonist
195.  
The 1<sup>st</sup> line main attack relief for asthma is Albuterol
196.  
Patients who require their inhaler more than once per day should be put on an inhaled steroid as well
197.  
Levedopa + Carbidopa are the main treatment for Parkinson's disease
198.  
Tolcapone blocks the degradation of levodopa into 3-OMP
199.  
Selegiline is an MAO-B inhibitor that blocks the conversion of DA to DOPAC
200.  
Disulfiram/Metronidazole block the 'Acetaldehyde DH' enzyme
201.  
Ethylene glycol (antifreeze) causes the formation of oxalate crystals, which block the renal tubules when ingested
202.  
Ethosuxamide is the 1<sup>st</sup> line treatment for absence seizures
203.  
Phenytoin can cause gingival hyperplasia
204.  
Succinylcholine + Haldol can cause malignant hyperthermia
205.  
Malignant hyperthermia is managed with Dantrolene
206.  
Aspirin given to children can cause Reye syndrome (Reye syndrome damages the liver acutely)
207.  
Overdose of acetaminophen, or acetaminophen + alcohol can cause hepatic necrosis due to glutathione depletion and formation of toxic metabolites
208.  
Higher MAC = faster induction but lower potency  
Lower MAC = slower induction but stronger potency
209.  
Benzocaine (local anesthetic) can cause methemoglobinemia
210.  
Lidocaine and Prilocaine penetrate up to 5mm deep into tissues
211.  
Midazolam produces up to 45 minutes of anterograde amnesia
212.  
Mu receptor stimulation is responsible for sedative effects

213.  
Kappa receptors are in the spinal cord and cause pain relief

214.  
Morphine causes sphincter of oddi contraction, thus avoid in cases of biliary colic

215.  
Meperidine has the lowest tendency to cause sphincter of oddi contraction

216.  
Naloxone will help rapidly terminate respiratory depression in opioid overdose

217.  
Chlordiazepoxide is the best benzo for alcohol withdrawal

218.  
Diazepam is the benzo of choice for status epilepticus

219.  
Lorazepam is the benzo of choice for muscle spasms

220.  
Alprazolam is the benzo of choice for acute management of panic attacks

221.  
SSRI's are the DOC for long-term management of panic attack

222.  
Paroxetine (Paxil) is associated with significant weight gain

223.  
MAOI's + wine/cheese can lead to hypertensive crisis due to tyramine

224.  
Phenothiazine anti-psychotics have high potency, high extrapyramidal side effects, and high risk of tardive dyskinesia

225.  
Risperidol is the DOC for patients who cannot use stronger drugs or who are not seeing adequate improvements

226.  
The last-resort for refractory cases of severe depression is the electroconvulsive therapy (ETC)

227.  
Doxorubicin causes cardiac toxicity

228.  
Bleomycin and Busulfan cause pulmonary fibrosis/toxicity

229.  
The fastest-acting insulin is 'Lispro', which works in 5 minutes to alleviate high blood sugar

230.  
Sulfonylureas work by causing depolarization of the beta cells of the pancreas, which increases the release of insulin

231.  
1<sup>st</sup> line management for type 2 DM is lifestyle modifications

232.  
Patients who are not responding to DM2 oral medications will need insulin to manage their diabetes

233.  
1<sup>st</sup> line for GERD is the PPI's (Omeprazole)

234.  
H2 antagonist Cimetidine causes gynecomastia

225.  
Spironolactone, Digoxin, Cimetidine, Amiodarone, Ketoconazole all have the ability to cause gynecomastia

226.  
Ondasetron (Zofran) is the MC used anti-emetic in the hospital setting

227.  
Thyroxin is the DOC for cases of hypothyroidism

228.  
PTU inhibits peripheral conversion of T4 → T3

229.  
PTU is the DOC for hyperthyroidism

230.  
Leuprolide is the DOC for precocious puberty

231.  
Clomiphene induces ovulation by inhibiting the estrogen receptor on the hypothalamus

232.  
Streptokinase inactivates the conversion of plasminogen to plasmin

233.  
Injury to the shaft of the humerus will most likely affect the radial nerve

234.  
Injury to the surgical neck of the humerus will most likely affect the axillary nerve

235.  
Injury to the supracondyl of the humerus will most likely affect the median nerve

236.  
Injury to the medial epicondyle of the humerus will most likely affect the ulnar nerve

237.  
Radial nerve innervates "BEST": Brachioradialis, Extensors of the wrist/fingers, Supinator

238.  
Claw hand is caused by compression of the ulnar nerve at the elbow

239.  
Erb-Duchenne palsy is characterized by: Abductor paralysis, Paralysis of lateral rotators, and loss of biceps action

240.  
Thoracic outlet syndrome is characterized by: Thenar and hypothenar atrophy, Interosseous muscle atrophy, sensory deficit of the medial forearm and hand, loss of radial pulse upon head movement to the affected side

241.  
Muscles of the rotator cuff "SITS": Supraspinatus, Infraspinatus, Teres minor, Subscapularis

242.  
The right Coronary artery supplies SA and AV node 80% of the time

243.  
The left anterior descending artery is the MC site of coronary artery occlusion

244.  
The MC site of foreign body aspiration is the right lung

245.  
Respiratory tract is: Trachea → Bronchi → Bronchioles → Terminal bronchioles → Alveoli

246.  
Right lymphatic duct drains right side of head + right arm, thoracic duct drains rest of the body

247.

Diaphragm structure: T8 = IVC, T10 = Esophagus, vagal trunks, T12 = aorta, azygous vein, thoracic duct

248.

Direct inguinal hernias medial to inferior epigastric artery, indirect are lateral to inferior epigastric artery

249.

Superior rectal artery supplies tissue above pectinate line, inferior rectal artery supplies tissue below pectinate line

250.

Spermatogenesis occurs over 65 days

251.

Neural tube defects are caused by lack of folic acid supplementation during pregnancy

252.

Megaloblastic anemia + neuro deficits = B12 deficiency

Megaloblastic anemia without neuro deficit = Folate deficiency

253.

Wilson's disease is treated with Penicillamine

254.

Purulent necrosis is caused by bacteria

255.

When there's a deposition of fibrin, think of: Collagen vascular disease, uremia, Tuberculosis

256.

Fatty necrosis of the breast is caused by trauma (ask about abuse)

257.

The MCC of Turner syndrome is non-disjunction from the father

258.

Turner syndrome sees pre-ductal coarctation of the aorta 5% of the time

259.

Patau = 13, Edwards = 18, Down's = 21

260.

Manage fast-growing cancers with antimetabolites, manage slow-growing cancers with alkylating agents

261.

Caffeine blocks phosphodiesterase = increase cAMP and cGMP

262.

Tyrosine kinase is the 2<sup>nd</sup> messenger for growth factors

263.

GABA is inhibitory in the brain, Glycine is inhibitory in the spinal cord

264.

The 1<sup>st</sup> line DOC for BPH is Prazosin

265.

Muscle strain = overstretching of muscle, muscle sprain = tear to tendon or ligament

266.

With inflammation suspicion, check ESR, WBC, C-reactive protein

267.

Duchenne muscular dystrophy = no dystrophin, Becker's muscular dystrophy = decreased amount of dystrophin made

268.

Guillain-Barre syndrome is a rapidly ascending paralysis, we worry it will get to the diaphragm

269.

Treat Guillain-Barre with IVIG

270.

The neurological symptoms of DM are 'glove and stocking' distribution

271.

Argyll-Robertson pupil is pathognomonic finding for tertiary syphilis

272.

Diagnose Myasthenia Gravis with Edrophonium (an AchE inhibitor) – aka 'Tensilon test'

273.

The MOA of myasthenia gravis is autoimmune attack against the post-synaptic Ach receptors

274.

Treat MG with Neostigmine

275.

The MOA of Lambert-Eaton syndrome is antibodies against the voltage-gated calcium channels on the pre-synaptic membrane

276.

Common initial findings of multiple sclerosis are: Scanning speech, intention tremor, nystagmus

277.

Acute management of MS is IV steroids, long-term management are disease modifying drugs

278.

Four main types of MS are: Relapsing-remitting, primary progressive, secondary progressive, progressive-relapsing

279.

Metachromatic leukodystrophy is caused by a deficiency of Arylsulfatase A

280.

ALS affects the ventral horns and corticospinal tracts (all motor, no sensory involvement)

281.

Friedreich's ataxia is an x-linked recessive triplet repeat disorder, caused by mutation of FXN gene that codes for Frataxin (chrom 9)

282.

Adrenoleukodystrophy is caused by a carnitine shuttle defect, whereby long-chain FA's accumulate in the cytoplasm

283.

Incomplete penetrance means those affected with a genetic defect won't always show it phenotypically

284.

Pleiotropy occurs when a single gene has more than one effect on a phenotype

285.

Mitochondrial diseases are only passed from the mother (to all offspring)

286.

Most smooth muscle by area is found in the arterioles

287.

Veins are under parasympathetic control

288.

Arteries are under sympathetic control

289.  
Transudate = Mostly water. Exudate = mostly protein

290.  
Carotid sinus (at the carotid bifurcation) responds to flow and stroke volume

291.  
CN 9 and 10 are responsible for managing HR

292.  
Acute stretching of the carotid artery leads to vasovagal syncope

293.  
Orthostatic hypotension is caused by hypovolemia

294.  
The 3 MC IgA nephropathies are: Berger's, Henoch-Schonlein Purpura, Alport's

295.  
The MCC of DIC is sepsis

296.  
The MCC of renal failure in children is hemolytic uremic syndrome

297.  
HUS is associated with E. Coli 0157:H7

298.  
Takayasu's arteritis is characterized by weakened pulses and very high ESR

299.  
The 2 MCC of acquired heart disease in children are: Kawasaki's disease and Rheumatic fever

300.  
The 1<sup>st</sup> line treatment of temporal arteritis when visual disturbances are present is steroids

301.  
Sacroiliac joint has to be affected to make a diagnosis of Ankylosing spondylitis

302.  
The major finding in psoriatic arthritis is pitting of the nails

303.  
Reiter's syndrome is characterized by: urethritis, conjunctivitis, and arthritis

304.  
CREST syndrome = Calcinosis, Raynaud's phenomenon, Esophageal dysmotility, Sclerodactyly, Telangiectasis

305.  
Anti-smooth muscle antibodies are seen in Scleroderma

306.  
Post-strep gN is caused by S. Pyogenes and characterized by 'sub epithelial humps'

307.  
Subacute bacterial endocarditis is MC on the mitral valve and MCC by Strep Viridans

308.  
Main diagnosis of SLE is anti-smith and anti-dsDNA antibodies

309.  
The MCC of congenital adrenal hyperplasia is 21-OH deficiency (virilization + hypotension)

310.  
Addison's disease patients require lifelong glucocorticoid supplementation

311.  
Osteoblasts = bone builders. Osteoclasts = bone crushers

312.  
Dysphagia + Halitosis = Zenker's diverticulum



313.  
MCC's of esophageal webs are: Plummer-Vinson syndrome and Schatzki rings

314.  
Chest pain that mimics MI after drinking hot or cold beverage is Diffuse Esophageal Spasm (DES) – aka Corkscrew esophagus

315.  
The MC type of esophageal fistula is type C

316.  
H. Pylori is treated with a PPI + 2 antibiotics

317.  
Sliding hernia is associated with GERD

318.  
Congenital pyloric stenosis presents with projectile vomiting 3-4 weeks after birth

319.  
Mid-epigastric pain is commonly caused by pancreatitis

320.  
MCC of pancreatitis in adults is alcohol and gall stones

321.  
MCC of pancreatitis in children is abdominal trauma, then infections

322.  
Ranson's criteria are used to make a prognosis for pancreatitis

323.  
4 F's of gallstones: Female, forty, fat, fertile

324.  
MCC of unconjugated bilirubin are: Hemolytic causes, Gilbert's, Crigler-Najjar type 1

325.  
MCC of conjugated bilirubin are: Obstructive jaundice, Crigler-Najjar type 2, Dubin-Johnson syndrome, Rotors syndrome

326.  
Twisting of a segment of bowel around it's mesentery is known as volvulus

327.  
Volvulus presents with abdominal pain, kidney bean shape on x-ray, and currant-jelly stool

328.  
MCC of painless bleeding in patients older than 60yr is Diverticulosis

329.  
MCC of painful LLQ in adults is Diverticulitis

330.  
Intussusception is treated with sigmoidoscopy and rectal tube placement

331.  
Appendicitis beings as general periumbilical pain followed by isolated pain to McBurney's point (2/3 from umbilicus to ASIS)

332.  
Hemorrhoids 1<sup>st</sup> managed with Sitz bath, increased fiber, and hemorrhoidal cream

333.  
Translocation t(11;22) is seen in Retinoblastoma and Ewing's sarcoma

334.  
Lens-shaped bleed in the brain = Epidural hematoma

335.  
Crescent-shaped bleed in the brain = Subdural hematoma

336.

Worst headache of someone's life = Subarachnoid hemorrhage

337.

Huntington's disease is an AD trinucleotide repeat disorder, affecting Huntingtin gene on chromosome 4

338.

Wilson's disease is an AR disease whereby ceruloplasmin protein is defective, leading to excessive copper levels in the serum

339.

Pathognomonic finding for Wilson's disease is Kayser-Fleischer rings (check with Slit-Lamp)

340.

Cherry-red spot on macula seen in Tay-Sachs, Niemann-Pick, and central retinal artery occlusion

341.

Murmur that radiates to carotids is aortic regurgitation

342.

Young athlete who passes out or dies while playing sports likely has IHSS

343.

If IHSS is suspected, the entire family needs an ECHO

344.

Pulmonary regurgitation radiates to the back and is louder on inspiration

345.

Dilated heart has S3 and = systolic dysfunction

346.

Hypertrophic heart has S4 and = diastolic dysfunction

347.

Three MCC of restrictive cardiomyopathy are: Collagen vascular disease, Hemochromatosis, Amyloidosis

348.

PDA can be closed with Indomethacin (NSAID), and can be kept open with prostaglandins

349.

Post-ductal coarctation is associated with notching of the ribs

350.

Wolf-Parkinson-White syndrome is a condition whereby ventricles are pre-excited due to the presence of an accessory pathway known as the 'Bundle of Kent'

351.

WPW syndrome will show a delta wave on EKG

352.

Neural crest cells make: Melanocytes, Odontoblasts, Tracheal cartilage, Enterochromaffin cells, Laryngeal cartilage, Parafollicular cells and pseudounipolar cells, All ganglia, Schwann cells, Spiromembrane

353.

Surfactant isn't produced until weeks 32-34 of gestation

354.

Lungs are ready when S:L of 2:1 or presence of phosphatidylglycerol

355.

MCC of pneumothorax in females is OCP's

356.

MCC of traumatic PTX is stab wound to the chest

357.

The obstructive lung diseases are: Chronic bronchitis, Emphysema, Asthma, and Bronchiectasis

358.

MCC of oligohydramnios are: Renal agenesis and Renal obstruction

359.

The most abundant cell type in the airway is the goblet cells (mucus producing)

360.

Upper 1/3 of airway is stratified squamous, middle 1/3 is mix of squamous and columnar, lower 1/3 is ciliated columnar

361.

The maxillary sinuses are the MC site of infection due to their drainage pathway

362.

Pancoast's tumor is at the apex of the lung, causes Horner's syndrome

363.

1<sup>st</sup> line treatment for Acne is Benzoyl Peroxide

364.

The MCC of Impetigo is S. Aureus

365.

Steroids and UVA light are treatment modalities for psoriasis

366.

Port-wine stain + seizure + mental retardation = Sturge-Weber syndrome

367.

AD disorder that affects heme synthesis, characterized by blistering of sun-exposed areas without abdominal pain = Porphyria cutanea tarda

368.

Management for Scabies is Permethrin (5%) cream

369.

Oral candida is treated with Nystatin (swish and swallow)

370.

Four sulfur-containing hormones are Prolactin, Inhibit, GH, and Insulin

371.

Maple syrup urine disease is caused by lack of Branched Chain Alpha-Keto acid DH complex

372.

The pre-cursor for Serotonin and Niacin is Tryptophan

373.

The 3 main indications for dialysis are: Hyperkalemia, Symptomatic uremia, Symptomatic acidosis

374.

Ketogenic and Glucogenic amino acids are PITTT: Phenylalanine, Isoleucine, Tyrosine, Threonine

375.

PKU caused by deficiency of Phenylalanine Hydroxylase

376.

An AR disorder caused by deficiency of Tyrosinase

377.

Alcaptonuria is caused by a deficiency of Homogentisic Oxidase (urine turns black when sitting, adults get brown ears and sclera)

378.

Cystinuria is an AR disease whereby there's a defect in renal transport of Cysteine, Ornithine, Lysine, and Arginine

379.

ETC inhibitors stop the ETC altogether, while uncouplers allow it to continue but generate heat instead of ATP

380.

Carbon monoxide inhibits the ETC at complex 4

381.

Sodium Nitroprusside is the only drug in medicine that contains cyanide, which can lead to non-competitive inhibition of complex 4

382.

Collagen is the most abundant protein in the body

383.

4 types of collagen are "SCAB": type 1 = skin, type 2 = connective tissue, type 3 = arteries, type 4 = basement membrane

384.

Vitamin C (ascorbic acid) is required for the hydroxylation of proline and lysine in collagen production

385.

There are 3 main types of osteogenesis imperfecta: 1 - normal collagen in insufficient amounts, 2 - poorly made collagen in insufficient amounts, 3 - collagen is formed improperly

386.

Keratin is a protein made for its tensile strength (nails, hair, bones, cartilage, tendons, and ligaments)

387.

Elastin is a protein with the ability to stretch and recoil, it is rich in glycine, proline, and lysine.

388.

Marfan's syndrome is caused by a mutation of the FBN1 gene on chromosome 15, it encodes fibrillin

389.

The main signs of Marfan's syndrome are: Wingspan wider than height, Arachnodactyly, and retinal detachment that occurs from the bottom

390.

Mannose-6-phosphate signals proteins to become acid hydrolases

391.

Anabolic processes occur in the cytoplasm, catabolic processes occur in the mitochondria

392.

Glycolysis is the only catabolic process that occurs in the cytoplasm

393.

Three biochemical pathways that occur in both cytoplasm and mitochondria are: Urea cycle, Heme synthesis, and Gluconeogenesis

394.

Glucose has 4 calories per gram, Protein has 4 calories per gram, Fat has 9 calories per gram

395.

Epinephrine and glucagon are the control mechanisms of the catabolic state

396.

Phosphofructokinase-1 is the RLE of glycolysis

397.

The allosteric activator of glycolysis is F-2,6-BP

398.

Mercury poisoning inhibits the enzyme glyceraldehyde-3-phosphate dehydrogenase in glycolysis

399.

The net loss of ATP in recycling 1 glucose in the Cori cycle is -4

400.

The RLE of galactose metabolism is 'Galactose-1-Phosphate uridylyltransferase'

401.

Galactosemia is caused by deficiency of Galactose-1-Phosphate Uridyltransferase

402.

The Krebs cycle gives us: 2 AcoA / glucose, 3 NADH / turn, 1 FADH<sub>2</sub> / turn, 1 GTP / turn

403.

The total ATP generated per turn of the Krebs cycle is 10, but 2 glucose molecules are fed into the cycle, giving us a total of 20 ATP per glucose

404.

NADH = 2.5 ATP, FADH<sub>2</sub> = 1.5 ATP

405.

The RLE of Heme synthesis is 'Delta Aminolevulinic Acid Synthase'

406.

Ferrochelatase adds the Fe<sup>2+</sup> to the middle of the porphyrin ring

407.

Reversal of methemoglobinemia with Methylene Blue

408.

The 4-step process of beta oxidation is: Oxidation, Hydrolysis, Oxidation, Thiolysis

409.

The RLE of Ketogenesis is HMG-CoA Synthase

410.

Beta-OH Butyrate makes up the majority of circulating ketones

411.

Don't correct sodium >10mEq/L over a 24hr period because rapid shifts can lead to central pontine myelinosis

412.

Metformin works by decreasing the hepatic glucose output and increasing the glucose uptake by skeletal muscles and peripheral tissues

413.

Early morning hypoglycemia that leads to reactive hyperglycemia late in the morning is known as the "Samoji Effect"

414.

Auto-induced hyperglycemia caused by normal increases of epinephrine, glucagon, and cortisol is known as the "Dawn Effect"

415.

The RLE of glycogen synthesis is Glycogen Synthetase

416.

The Pentose-Phosphate pathway (HMP shunt) produces NADPH, Ribose-5-Phosphate

417.

The RLE of the HMP shunt is "Glucose-6-Phosphate DH"

418.

Deficiency of G-6-P DH leads to oxidation and hemolysis of RBC's

419.

The 3 most important transaminases are AST, ALT, and GGT

420.

The main fatty acid we produce is "Palmitic Acid"

421.

Linoleic acid (omega 3) is responsible for making Arachidonic acid

422.

The Lipoxygenase pathway produces leukotrienes

423.

The MOA of Aspirin is acetylation of the COX enzymes

424.

MC side-effects of aspirin are: Gastric ulceration, Cinchonism, Reye syndrome, interstitial nephritis, thrombocytopenia

425.

Osmotic diarrheas are caused by indigestible solutes flowing through the GI and drawing water to them, while secretory diarrheas are toxin-mediated and lead to secretion of water into the GI lumen

426.

The 4 causes of secretory diarrhea are: 1 - Enterotoxigenic E. Coli, 2 - Vibrio cholera, 3 - Cryptosporidium, 4 - VIPoma

427.

Catalase positive bacteria can break down peroxide

428.

The 3 MC findings of toxic-shock syndrome are: High fever, hypotension, rash on palms/soles

429.

The MCC of Strep throat is Group A Strep (pyogenes)

430.

The MCC of meningitis in infants is Group B Strep

431.

The MCC of meningitis in 2 months - 10 year olds is Strep Pneumonia

432.

The MCC of meningitis in 10-21 year old is Neisseria Meningitis

433.

The MCC of meningitis in those >21 years old is Strep Pneumonia

434.

Bacillus cereus causes vomiting after eating reheated fried rice, due to its 'Emetic Toxin'

435.

Corynebacterium Diphtheria contains a toxin that ADP-ribosylates elongation factor 2, it leads to formation of pseudomembrane

436.

The 5 MCC of heartblock are: Lyme, Legionella, Typhoid fever, Diphtheria, and Chaga's disease

437.

Infants who eat raw honey can get Clostridium Botulism poisoning (avoid in 1<sup>st</sup> year of life)

438.

Neisseria has the largest capsule of all encapsulated bacteria

439.

When DIC is suspected, look for D-dimer and fibrin split products

440.  
Neisseria gonorrhoea is the MCC of purulent STD
441.  
Whooping cough is caused by Bordetella Pertussis and comes in three stages
442.  
Those who deliver animals and handle animal placenta are at risk of acquiring Brucella
443.  
Cat-Scratch disease is caused by Bartonella Henselae
444.  
Epiglottitis is caused by H. Influenza B
445.  
The three non-painful genital lesions are: Syphilis, Genital warts, and Molluscum contagiosum
446.  
Diagnose syphilis with VDRL or RPR.
447.  
Gold-standard syphilis test is FTA-Abs
448.  
Treat tertiary syphilis with IV penicillin G for 10 days
449.  
Whirlpool or 'Hot tub' folliculitis is caused by Pseudomonas
450.  
Salmonella is the MCC of osteomyelitis in sickle cell patients
451.  
Egg-white syndrome leads to deficiency of Biotin
452.  
Urease positive bugs are: Proteus, Pseudomonas, Klebsiella, Staphylococcus, and Mycoplasma
453.  
The MCC of food-poisoning related gastroenteritis is Campylobacter Jejuni
454.  
The most effective anti-fungal is Ketoconazole, which inhibits the P450, blocks 5-alpha reductase
455.  
MOA of Ketokonazole is inhibition of the enzyme 'Lanosterol 14-alpha Demethylase'
456.  
Amphotericin B can cause hyperkalemia
457.  
Onychomycosis is the MC nail problem, and is fungal infection of multiple nailbeds
458.  
Histoplasmosis is the respiratory disease of the Mississippi and Ohio River Valley
459.  
Blastomycosis is the respiratory disease of the Northeast USA
460.  
Coccidioidomycosis (Valley fever) is endemic to the Southwestern US and Northwestern part of Mexico
461.  
Paracoccidioidomycosis is seen in Rural latin America and has a shipwheel appearance

462.

The opportunistic fungal infections are: *Candida albicans*, *Aspergillus fumigatus*, *Cryptococcus neoformans*, and *Mucor/Rhizopus*

463.

The 3 MCC of vaginitis are: *Candida*, *Gardnerella*, and *Trichomonas*

464.

Fungus ball in the lung is caused by *Aspergillus*

465.

*Cryptococcus neoformans* causes meningitis in AIDS patients

466.

Mucormycosis is the opportunistic infection seen in diabetic patients

467.

*Pneumocystis carinii* is usually seen in AIDS patients when CD4 count drops below 200

468.

Prophylaxis for PCP is Bactrim (TMP-SMX)

469.

Rose gardener's rash caused by *Sporothrix Schenckii*, draining along the LN drainage pathway

470.

Pregnant patients must avoid toxoplasmosis by avoiding cat feces and/or cat litter

471.

Leaving contacts in too long can expose to *Acanthamoeba*

472.

Chaga's disease is caught by the *Reduvid* bug in South America

473.

*Giardia Lamblia* causes bloating and foul-smelling diarrhea, and is caught by ingesting cysts from fresh-water sources

474.

Treatment for *trichomonas vaginalis* is metronidazole

475.

All patients given Metronidazole must be warned against drinking alcohol

476.

The mildest form of plasmodium infection is *P. Malaria*

477.

The deadliest form of plasmodium infection is *P. Falciparum*

478.

Tips for preventing malaria are: Awareness, Bite prevention, Chemoprophylaxis, Diagnosis & Treatment

479.

The rash of rocky-mountain spotted fever begins on wrists and ankles and moves centrally

480.

*Mycobacterium Avium* is seen in AIDS patients when CD4 count drops below 50

481.

Prophylaxis for MAC is Azithromycin

482.

Primary TB causes a Ghon complex in the lower lobes

483.

Secondary TB causes cavitation in the upper lobe because of increased O<sub>2</sub>-tension in this area



484.  
Prophylaxis for a positive PPD is INH for 9 months

485.  
Patient being treated for TB who experiences peripheral neuropathy is due to Pyridoxine deficiency (put it back)

486.  
Rubella presents with a blueberry muffin rash, cataracts, PDA, and sensorineural hearing loss

487.  
CMV leads to central calcifications in the brain

488.  
Toxoplasmosis leads to calcifications in the parietal lobe

489.  
The management for herpes is Acyclovir

490.  
Obligate aerobes are: Nocardia, Pseudomonas, Mycobacterium, and Bacillus

491.  
HIV/AIDS and HTLV are retroviruses

492.  
Croup is characterized by Steeple sign on xray

493.  
Rabies is managed with immediate washing, administration of immunoglobulins, and a 5-dose vaccination over the following 28-days

494.  
Coronavirus is the MCC of cold in the summer months

495.  
Rhinovirus is the MCC of cold in the winter months

496.  
Active immunity occurs when we are infected or get vaccinated

497.  
Interleukin-1 does the following: recruits helper T-cells, stimulates fever, and produces non-specific symptoms of illness

498.  
The humoral immune system is responsible for patrolling the blood

499.  
Cell-mediated immune system patrols the tissues

500.  
Drugs that can cause aplastic anemia (BM suppression): Chloramphenicol, AZT, Benzene, Vinblastine

501.  
Viruses that can cause BM suppression are: Parvovirus B19, Hep C, Hep E