

# Medical Student's Amnesia

A transient selective loss of memory during an exam that prevents one from remembering the eponymically-named diseases discovered by old, dead doctors.

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| Addison's Disease           | 1. Primary adrenocortical deficiency   |
| Addisonian Anemia           | 2. Pernicious anemia (antibodies to intrinsic factor or parietal cells → ↓IF → ↓Vit B <sub>12</sub> → megaloblastic anemia)  |
| Albright's Syndrome         | 3. Polyostotic fibrous dysplasia, precocious puberty, café au lait spots, short stature, young girls   |
| Alport's Syndrome           | 4. Hereditary nephritis with nerve deafness  |
| Alzheimer's                 | 5. Progressive dementia  |
| Argyll-Robertson Pupil      | 6. Loss of light reflex constriction (contralateral or bilateral)<br>7. "Prostitute's Eye" - accommodates but does not react<br>8. Pathognomonic for 3° Syphilis<br>9. Lesion pretectal region of superior colliculus  |
| Arnold-Chiari Malformation  | 10. Cerebellar tonsil herniation through foramen magnum = see thoracolumbar meningocele  |
| Barrett's                   | 11. Columnar metaplasia of lower esophagus (↑ risk of adenocarcinoma)- constant gastroesophageal reflux  |
| Barter's Syndrome           | 12. Hyperreninemia   |
| Becker's Muscular Dystrophy | 13. Similar to Duchenne, but less severe (mutation, not a deficiency, in dystrophin protein)   |
| Bell's Palsy                | 14. CNVII palsy (entire face; recall that UMN lesion only affects lower face)  |
| Berger's Disease            | 15. IgA nephropathy causing hematuria in kids, usually following infection   |
| Bernard-Soulier Disease     | 16. Defect in platelet <i>adhesion</i> (abnormally large platelets & lack of platelet-surface glycoprotein)  |
| Berry Aneurysm              | 17. Circle of Willis (subarachnoid bleed) Anterior Communicating artery<br>18. Often associated with ADPKD   |
| Bowen's Disease             | 19. Carcinoma in situ on <b>shaft</b> of penis (↑ risk of visceral ca) [compare w/ Queyrat]  |
| Brill-Zinsser Disease       | 20. Recurrences of rickettsia prowazaki up to 50 yrs later   |
| Briquet's Syndrome          | 21. Somatization disorder<br>22. Psychological: multiple physical complaints without physical pathology  |
| Broca's Aphasia             | 23. Motor Aphasia (area 44 & 45) intact comprehension  |
| Brown-Sequard               | 24. Hemisection of cord (contralateral loss of pain & temp / ipsilateral loss of fine touch, UMN / ipsi loss of consc. Proprio)  |
| Bruton's Disease            | 25. X-linked agammaglobinemia (↓ B cells)  |
| Budd-Chiari                 | 26. Post-hepatic venous thrombosis = ab pain; hepatomegaly; ascites; portal HTN; liver failure   |
| Buerger's Disease           | 27. Acute inflammation of medium and small arteries of extremities → painful ischemia → gangrene<br>28. Seen almost exclusively in young and middle-aged men who smoke.  |
| Burkitt's Lymphoma          | 29. <b>Small noncleaved cell lymphoma</b> EBV<br>30. 8:14 translocation<br>31. Seen commonly in jaws, abdomen, retroperitoneal soft tissues<br>32. Starry sky appearance   |
| Caisson Disease             | 33. Nitric gas emboli  |
| Chagas' Disease             | 34. Trypanosoma infection - cardiomegaly with apical atrophy, achlasia   |
| Chediak-Higashi Disease     | 35. (AR) Phagocyte Deficiency = defect in microtubule polymerization<br>36. Neutropenia, albinism, cranial & peripheral neuropathy & repeated infections w/ strep & staph  |
| Conn's Syndrome             | 37. Primary <b>Aldosteronism</b> : HTN; retain Na <sup>+</sup> & H <sub>2</sub> O; hypokalemia (causing alkalosis); ↓ renin  |
| Cori's Disease              | 38. Type III Glycogenosis - Glycogen storage disease (debranching enz: amylo 1,6 glucosidase def. ↑ Glycogen)  |
| Creutzfeldt-Jakob           | 39. Prion infection → cerebellar & cerebral degeneration   |
| Crigler-Najjar Syndrome     | 40. Congenital hyperbilirubinemia (unconjugated)<br>41. Glucuronyl transferase deficiency. Can progress to Kernicterus<br>42. Less severe form will respond to Phenobarbital therapy   |
| Crohn's                     | 43. IBD; ileocecum, transmural, skip lesions, cobblestones, lymphocytic infiltrate, granulomas<br>44. (contrast to UC: limited to colon, mucosa & submucosa, crypt abscesses, pseudopolyps, ↑ colon cancer risk)<br>45. Clinically: ab pain & diarrhea; fever; malabsorption; fistulae b/t intestinal loops & abd structures |
| Curling's Ulcer             | 46. Acute gastric ulcer associated with severe burns   |
| Cushing's                   | 47. Disease: <b>Hypercorticism</b> 2° to ↑ ACTH from pituitary (basophilic adenoma)<br>48. Syndrome: hypercorticism of all other causes (1° adrenal or ectopic)<br>49. - moon face; buffalo hump; purple striae; hirsutism; HTN; hyperglycemia   |

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| Cushing's Ulcer             | 50. Acute gastric ulcer associated with CNS trauma  |
| de Quervain's Thyroiditis   | 51. Self-limiting focal destruction (subacute thyroiditis)  |
| DiGeorge's Syndrome         | 52. Failure of 3 <sup>rd</sup> & 4 <sup>th</sup> pharyngeal pouches formation: Thymus & Parathyroid<br>53. Thymic hypoplasia → T-cell deficiency<br>54. Hypoparathyroidism → Tetany   |
| Down's Syndrome             | 55. Trisomy 21 or translocation - Simian Crease   |
| Dressler's Syndrome         | 56. Post-MI Fibrinous Pericarditis <small>autoimmune</small>  |
| Dubin-Johnson Syndrome      | 57. Congenital hyperbilirubinemia ( <u>conjugated</u> ) = bilirubin transport is defective not conjugation<br>58. Striking brown-to-black discoloration of the liver  |
| Duchenne Muscular Dystrophy | 59. Deficiency of dystrophin protein → MD <small>X-linked recessive</small>   |
| Edwards' Syndrome           | 60. Trisomy 18<br>61. <b>Rocker-bottom feet</b> , low ears, small lower jaw, heart disease  |
| Ehler's-Danlos              | 62. Defective collagen  |
| Eisenmenger's Complex       | 63. Late cyanotic shunt (R→L) pulmonary HTN & RVH 2° to long-standing VSD, ASD, or PDA  |
| Erb-Duchenne Palsy          | 64. Trauma to superior trunk of brachial plexus <small>Waiter's Tip</small>   |
| Ewing Sarcoma               | 65. Malignant undifferentiated round cell tumor of bone in boys <15yoa - t11;22   |
| Eyrthroplasia of Queyrat    | 66. Carcinoma in situ on <b>glans penis</b>   |
| Fanconi's Syndrome          | 67. Impaired proximal tubular reabsorption 2° to lead poisoning or Tetracycline (glycosuria, hyperphosphaturia, aminoaciduria, systemic acidosis)   |
| Felty's Syndrome            | 68. Rheumatoid arthritis, neutropenia, splenomegaly   |
| Gardner's Syndrome          | 69. AD = adenomatous polyps of colon, osteomas & soft tissue tumors   |
| Gaucher's Disease           | 70. Lysosomal Storage Disease glucocerebrosidase deficiency - glucocerebroside accumulation<br>71. Hepatosplenomegaly, femoral head & long bone erosion, anemia   |
| Gilbert's Syndrome          | 72. Benign congenital hyperbilirubinemia (unconjugated) = ↓d glucuronyl transferase activity  |
| Glanzmann's Thrombasthenia  | 73. Defective glycoproteins on platelets = deficient platelet <i>aggregation</i>  |
| Goodpasture's               | 74. Autoimmune: ab's to glomerular & alveolar basement membranes. Seen in men in their 20's   |
| Grave's Disease             | 75. Autoimmune hyperthyroidism (TSI): IgG Ab reactive w/ TSH receptors. Low TSH & TRH - High T3 / T4  |
| Guillain-Barre              | 76. Polyneuritis following viral infection/ autoimmune (ascending muscle weakness & paralysis; usually self-limiting)   |
| Hamman-Rich Syndrome        | 77. Idiopathic pulmonary fibrosis. Can see honey comb lung.   |
| Hand-Schuller-Christian     | 78. Chronic progressive histiocytosis   |
| Hashimoto's Thyroiditis     | 79. Autoimmune hypothyroidism. May have transient hyperthyroidism. Low T3 /T4 & High TSH  |
| Hashitoxicosis              | 80. Initial hyperthyroidism in Hashimoto's Thyroiditis that precedes hypothyroidism   |
| Henoch-Schonlein purpura    | 81. Hypersensitivity vasculitis = allergic purpura. Lesions have the same age.<br>82. Hemorrhagic urticaria (with fever, arthralgias, GI & renal involvement)<br>83. Associated with upper respiratory infections             |
| Hirschprung's Disease       | 84. Aganglionic megacolon   |
| Horner's Syndrome           | 85. Ptosis, miosis, anhidrosis (lesion of cervical sympathetic nerves often 2° to a Pancoast tumor)   |
| Huntington's (Chromosome 4) | 86. AD: Progressive degeneration of caudate nucleus, putamen (striatum) & frontal cortex ↓ GABA   |
| Jacksonian Seizures         | 87. Epileptic events originating in the primary motor cortex (area 4)   |
| Job's Syndrome              | 1. Immune deficiency: neutrophils fail to respond to chemotactic stimuli<br>2. Defective neutrophilic chemotactic response = repeated infections<br>3. Commonly seen in light-skinned, red-haired girls<br>88. ↑'d IgE levels |
| Kaposi Sarcoma              | 89. Malignant vascular tumor (HHV8 in homosexual men)   |
| Kartagener's Syndrome       | 90. Immotile cilia 2° to defective dynein arms <small>infection, situs inversus, sterility</small>  |
| Kawasaki Disease            | 91. Mucocutaneous lymph node syndrome in kids (acute necrotizing vasculitis of lips, oral mucosa)   |
| Klinefelter's Syndrome      | 92. 47, XXY: Long arms, Sterile, Hypogonadism   |
| Kluver-Bucy                 | 93. Bilateral lesions of amygdala (hypersexuality; oral behavior)   |
| Krukenberg Tumor            | 94. Adenocarcinoma with signet-ring cells (typically originating from the stomach) metastases to<br>95. the ovaries   |
| Laennec's Cirrhosis         | 96. Alcoholic cirrhosis   |

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| Lesch-Nyhan                             | 97. HGPRT deficiency<br>98. Gout, retardation, self-mutilation   |
| Letterer-Siwe                           | 99. Acute disseminated Langerhans' cell histiocytosis  |
| Libman-Sacks                            | 100. Endocarditis with small vegetations on valve leaflets<br>101. Associated with SLE   |
| Lou Gehrig's                            | 102. Amyotrophic Lateral Sclerosis degeneration of upper & lower motor neurons   |
| Mallory-Weis Syndrome                   | 103. Bleeding from esophagogastric lacerations 2° to writhing (alcoholics)   |
| Marfan's                                | 104. Connective tissue defect: defective Fibrillin gene Dissecting aortic aneurysm, subluxation of lenses  |
| McArdle's Disease                       | 105. Type V Glycogenosis - Glycogen storage disease (muscle phosphorylase deficiency = ↑ Glycogen)   |
| Meckel's Diverticulum                   | 106. Rule of 2's: 2 inches long, 2 feet from the ileocecum, in 2% of the population<br>107. Embryonic duct origin; may have ectopic tissue: gastric/pancreatic remnant of vitelline duct/yolk stalk  |
| Meigs Syndrome                          | 108. Triad: ovarian fibroma, ascites, hydrothorax - associated w/ fibroma of ovaries   |
| Menetrier's Disease                     | 109. Giant hypertrophic gastritis (enlarged rugae; plasma protein loss)  |
| Monckeberg's Arteriosclerosis           | 110. Calcification of the media (usually radial & ulnar aa.)   |
| Munchausen Syndrome                     | 111. Factitious disorder (consciously creates symptoms, but doesn't know why)  |
| Nelson's Syndrome                       | 112. 1° Adrenal Cushing's → surgical removal of adrenals → loss of negative feedback to pituitary → Pituitary Adenoma  |
| Niemann-Pick                            | 113. Lysosomal Storage Disease (sphingomyelinase deficiency - sphingomyelin accumulation)<br>114. "Foamy histiocytes"  |
| Osler-Weber-Rendu Syndrome              | 115. Hereditary Hemorrhagic Telangiectasia. Seen in the Mormon's of Utah.  |
| Paget's Disease                         | 116. Abnormal bone architecture (thickened, numerous fractures → pain)   |
| Pancoast Tumor                          | 117. Bronchogenic tumor with superior sulcus involvement → Horner's Syndrome   |
| Parkinson's                             | 118. Dopamine depletion in nigrostriatal tracts  |
| Peutz-Jegher's Syndrome (AD)            | 119. Melanin pigmentation of lips, mouth, hand, genitalia + hamartomatous polyps of small intestine  |
| Peyronie's Disease                      | 120. Subcutaneous fibrosis of dorsum of penis  |
| Pick's Disease - 2 Different Diseases - | 121. 1. Progressive dementia similar to Alzheimer's<br>122. 1. Constrictive pericarditis - sequel to mediastinal tuberculosis<br>123. Calcium-frosting, unyielding layer - heart chambers may be unable to dilate to receive blood during diastole |
| Plummer's Syndrome                      | 124. Hyperthyroidism, nodular goiter, absence of eye signs (Plummer's = Grave's - eye signs)   |
| Plummer-Vinson                          | 125. Esophageal webs & iron-deficiency anemia, spoon-shaped nails, ↑ SCCA of esophagus   |
| Pompe's Disease                         | 126. Type II Glycogenosis - Glycogen storage disease → cardiomegaly (α 1,4 Glucosidase deficiency: ↑ Glycogen)   |
| Pott's Disease                          | 127. Tuberculous osteomyelitis of the vertebrae  |
| Potter's Complex                        | 128. Renal agenesis → oligohydramnios → hypoplastic lungs, defects in extremities  |
| Raynaud's                               | 129. <b>Disease:</b> recurrent vasospasm in extremities = seen in young, healthy women<br>130. <b>Phenomenon:</b> 2° to underlying disease (SLE or scleroderma)  |
| Reiter's Syndrome                       | 131. Urethritis, conjunctivitis, arthritis non-infectious (but often follows infections), HLA-B27, polyarticular   |
| Reye's Syndrome                         | 132. Microvesicular fatty liver change & encephalopathy<br>133. 2° to aspirin ingestion in children following viral illness, especially VZV  |
| Riedel's Thyroiditis                    | 134. Idiopathic fibrous replacement of thyroid   |
| Rotor Syndrome                          | 135. Congenital hyperbilirubinemia ( <u>conjugated</u> )<br>136. Similar to Dubin-Johnson, but no discoloration of the liver   |
| Sezary Syndrome                         | 137. Leukemic form of cutaneous T-cell lymphoma (mycosis fungoides)  |
| Shaver's Disease                        | 138. Aluminum inhalation → lung fibrosis   |
| Sheehan's Syndrome                      | 139. Postpartum pituitary necrosis = hemorrhage & shock usually occurred during delivery   |
| Shy-Drager                              | 140. Parkinsonism with autonomic dysfunction & orthostatic hypotension   |
| Simmond's Disease                       | 141. Pituitary cachexia - can occur from either pituitary tumors or Sheehan's  |
| Sipple's Syndrome                       | 142. MEN type IIa = pheochromocytoma, thyroid medullary CA, hyperparathyroidism  |
| Sjogren's Syndrome                      | 143. Triad: dry eyes, dry mouth, arthritis ↑ risk of B-cell lymphoma   |
| Spitz Nevus                             | 144. Juvenile melanoma (always benign)   |
| Stein-Leventhal                         | 145. Polycystic ovary: see amenorrhea; infertility; obesity; hirsutism = ↑↑ LH secretion   |
| Stevens-Johnson Syndrome                | 146. Erythema multiforme, fever, malaise, mucosal ulceration (often 2° to infection = mycoplasma or sulfa drugs)   |

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| Still's Disease                      | 147. Juvenile rheumatoid arthritis (absence of rheumatoid factor)  |
| Takayasu's arteritis                 | 148. Aortic arch syndrome<br>149. Loss of carotid, radial or ulnar pulses = pulseless disease. Night sweats.<br>150. Common in young Asian females   |
| Tay-Sachs (AR)                       | 151. Gangliosidosis (hexosaminidase A deficiency → G <sub>M2</sub> ganglioside) Cherry Red Spots of the Macula   |
| Tetralogy of Fallot                  | 152. 1.VSD, 2.overriding aorta, 3.pulmonary artery stenosis, 4.right ventricular hypertrophy   |
| Tourette's Syndrome                  | 153. Involuntary actions, both motor and vocal Tx w/ Pimozide  |
| Turcot's Syndrome                    | 154. Colon adenomatous polyps plus CNS tumors  |
| Turner's Syndrome                    | 155. 45, XO = most common cause of Primary Amenorrhea. No Barr body on buccal smear.   |
| Vincent's Infection                  | 156. "Trench mouth" - acute necrotizing ulcerative gingivitis due to <b>Fusobacterium</b>  |
| Von Gierke's Disease                 | 157. Type I Glycogenosis - Glycogen storage disease (66Ptase deficiency) - Glycogen accumulaiton   |
| Von Hippel-Lindau                    | 158. Hemangioma (or hemangioblastoma) = cerebellum, brain stem, & retina<br>159. Adenomas of the viscera, especially ↑ Renal Cell Carcinoma<br>160. Chromosome 3p  |
| Von Recklinghausen's                 | 161. Neurofibromatosis & café au lait spots & Lisch nodules (Chromosome 17)  |
| Von Recklinghausen's Disease of Bone | 162. Osteitis fibrosa cystica ("brown tumor") 2° to hyperparathyroidism = osteoclastic resorption w/<br>163. fibrous replacement   |
| Von Willebrand's Disease (AD)        | 164. Defect in platelet adhesion 2° to deficiency in vWF. ↑aPPT, ↑ Bleed time  |
| Waldenstrom's macroglobinemia        | 165. Proliferation of IgM-producing lymphoid cells in men 50-70 yoa; PAS(+) <b>Dutcher bodies</b>  |
| Wallenberg's Syndrome                | 166. Posterior Inferior Cerebellar Artery (PICA) thrombosis "Medullary Syndrome"<br>167. Ipsilateral: ataxia, facial pain & temp; Contralateral: body pain & temp  |
| Waterhouse-Friderichsen              | 168. Adrenal insufficiency 2° to DIC<br>169. DIC 2° to meningococemia  |
| Weber's Syndrome                     | 170. Paramedian Infarct of Midbrain<br>171. Ipsilateral: mydriasis; Contralateral: UMN paralysis (lower face & body)   |
| Wegener's Granulomatosis             | 172. Necrotizing granulomatous vasculitis of paranasal sinuses, lungs, kidneys, etc.   |
| Weil's Disease                       | 173. Icteric Leptospirosis non-icteric progresses to renal failure & myocarditis<br>174. Dark field microscopy for dx  |
| Wermer's Syndrome                    | 175. MEN type I = thyroid, parathyroid, adrenal cortex, pancreatic islets, pituitary   |
| Wernicke's Aphasia                   | 176. Sensory Aphasia impaired comprehension  |
| Wernicke-Korsakoff Syndrome          | 177. Thiamine deficiency in alcoholics; bilateral mamillary bodies (mediodorsal nucleua) (confusion, ataxia, ophthalmoplegia)  |
| Whipple's Disease                    | 178. Malabsorption syndrome (with bacteria-laden macrophages) & polyarthritis  |
| Wilson's Disease                     | 179. Hepatolenticular degeneration (copper accumulation [Tx w/ Penicillamine ] & decrease in ceruloplasmin)<br>180. Mallory Bodies in the Liver & also w/ alcoholic hepatitis & Hyaline change<br>181. Chromosome 13 |
| Wiskott-Aldrich Syndrome             | 182. Immunodeficiency: combined B- & T-cell deficiency (thrombocytopenia & eczema)<br>183. ↓ IgM w/ ↑ IgA  |
| Wolff-Chaikoff Effect                | 184. High iodine level (-)'s thyroid hormone synthesis   |
| Zenker's Diverticulum                | 185. Esophageal; cricopharyngeal muscles above UES   |
| Zollinger-Ellison                    | 186. Gastrin-secreting tumor of pancreas (or intestine) → ↑ acid → recurrent ulcers  |
| Roger's Disease                      | 187. Interventricular septal defect  |
| Barlow's Syndrome                    | 188. Floppy vale syndrome - women b/t 20-40 yoa  |
| Bracht-Wachter Lesions               | 189. Minute abscesses found in subacute bacterial endocarditis   |
| Lutembacher's Syndrome               | 190. Combination of septum secundum atrial septal defect w/ mitral stenosis  |
| Schmidt's Syndrome                   | 191. Autoimmue thyroid Disease (Hashimoto's ) & insulin-dependent diabetes   |

## Hallmark Findings

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| Albumino-Cytologic Dissociation | 192. Guillain-Barre (markedly increased protein in CSF with only modest increase in cell count) |
| Antiplatelet Antibodies         | 193. Idiopathic thrombocytopenic purpura  |
| Arachnodactyly                  | 194. Marfan's   |
| Aschoff Bodies                  | 195. Rheumatic fever  |

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| Auer Rods                          | 196. Acute promyelocytic leukemia (AML type M <sub>3</sub> )   |
| Autosplenectomy                    | 197. Sickle cell anemia: switch a glu → val in β chain<br>198. Low O <sub>2</sub> ↑ sickling<br>199. Aplastic crisis w/ B19 (Parvovirus ssDNA) infection<br>200. Salmonella osteomyelitis<br>201. Vaso-occlusive painful crises<br>202. Hydroxyurea as Txt (↑ Hb <sup>F</sup> ) & Bone marrow transplant |
| Babinski                           | 203. UMN lesion  |
| Basophilic Stippling of RBCs       | 204. Lead poisoning  |
| Bence Jones Protein                | 205. Multiple myeloma free light chains (either kappa or lambda)<br>206. Waldenstrom's macroglobinemia   |
| Birbeck Granules                   | 207. Histiocytosis X (eosinophilic granuloma)  |
| Blue Bloater                       | 208. Chronic Bronchitis (at least 3 months for at least 2 years of excessive mucus secretion & chronic recurrent productive cough)   |
| Boot-Shaped Heart                  | 209. Tetralogy of Fallot   |
| Bouchard's Nodes                   | 210. Osteoarthritis (Proximal IP joint of the fingers)   |
| Boutonniere's Deformity            | 211. Rheumatoid arthritis flex proximal & extend distal IP joints  |
| Brown Tumor                        | 212. Hyperparathyroidism   |
| Brushfield Spots                   | 213. Down's  |
| Call-Exner Bodies                  | 214. Granulosa cell tumor: associated w/ endometrial hyperplasia & carcinoma<br>215. Granuloma-Theca cell tumor  |
| Cardiomegaly with Apical Atrophy   | 216. Chagas' Disease   |
| Chancre                            | 217. 1° Syphilis   |
| Chancroid                          | 218. <i>Haemophilus ducreyi</i>  |
| Charcot Triad                      | 219. Multiple sclerosis = nystagmus, intention tremor, scanning speech   |
| Charcot-Leyden Crystals            | 220. Bronchial asthma  |
| Cheyne-Stokes Breathing            | 221. Cerebral lesion   |
| Chocolate Cysts                    | 222. Endometriosis   |
| Chvostek's Sign                    | 223. Hypocalcemia facial spasm in tetany   |
| Clue Cells                         | 224. Gardnerella vaginitis   |
| Codman's Triangle                  | 225. Osteosarcoma  |
| Cold Agglutinins                   | 226. <i>Mycoplasma pneumoniae</i><br>227. Infectious mononucleosis   |
| Condyloma Lata                     | 228. 2° Syphilis<br>229. New coffee flavor at Bagel & Bagel  |
| Cotton Wool Spots                  | 230. HTN<br>231. Aka, cytoid bodies seen w/ SLE (yellowish cotton wool fundal lesions)   |
| Councilman Bodies                  | 232. Dying hepatocytes - HepB  |
| Crescents In Bowman's Capsule      | 233. Rapidly progressive (crescentic glomerulonephritis)   |
| Currant-Jelly Sputum               | 234. <i>Klebsiella</i>   |
| Curschmann's Spirals               | 235. Bronchial asthma  |
| Depigmentation Of Substantia Nigra | 236. Parkinson's   |
| Donovan Bodies                     | 237. Granuloma inguinale (STD)   |
| Eburnation                         | 238. Osteoarthritis (polished, ivory-like appearance of bone)  |
| Ectopia Lentis                     | 239. Marfan's  |
| Erythema Chronicum Migrans         | 240. Lyme Disease  |
| Fatty Liver                        | 241. Alcoholism  |
| Ferruginous Bodies                 | 242. Asbestosis - & Iron laden   |
| Ghon Focus / Complex               | 243. Tuberculosis (1° & 2°, respectively)  |
| Glitter Cells                      | 244. Acute Pyelonephritis  |
| Gower's Maneuver                   | 245. Duchenne's MD use of arms to stand  |
| Heberden's Nodes                   | 246. Osteoarthritis (Distal IP joint of the fingers)   |

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| Heinz Bodies                   | 247. G6PDH Deficiency   |
| Heterophil Antibodies          | 248. Infectious mononucleosis (EBV)   |
| Hirano Bodies                  | 249. Alzheimer's  |
| Hypersegmented PMNs            | 250. Megaloblastic anemia   |
| Hypochromic Microcytic RBCs    | 251. Iron-deficiency anemia or $\beta$ Thalassemia  |
| Jarisch-Herxheimer Reaction    | 252. Syphilis over-aggressive treatment of an asymptomatic pt. that causes symptoms 2° to rapid lysis   |
| Joint Mice                     | 253. Osteoarthritis (fractured osteophytes)   |
| Kaussmaul Breathing            | 254. Acidosis / Diabetic Ketoacidosis   |
| Keratin Pearls                 | 255. Squamous Cell CA of skin Actinic Keratosis is a precursor  |
| Keyser-Fleischer Ring          | 256. Wilson's   |
| Kimmelstiel-Wilson Nodules     | 257. Diabetic nephropathy: Nodular Glomerulosclerosis nodules of mesangial matrix   |
| Koilocytes                     | 258. HPV 6 & 11 (condyloma acuminatum - benign) and HPV 16 & 18 (malignant association)   |
| Koplik Spots                   | 259. Measles  |
| Lewy Bodies                    | 260. Parkinson's (eosinophilic inclusions in damaged substantia nigra cells)  |
| Lines of Zahn                  | 261. Arterial thrombus  |
| Lisch Nodules                  | 262. Neurofibromatosis (von Recklinhausen's disease) = pigmented iris hamartomas  |
| Lumpy-Bumpy IF Glomeruli       | 263. Poststreptococcal glomerulonephritis - prototype of nephritic syndrome   |
| Mallory Bodies                 | 264. Alcoholic hepatitis  |
| McBurney's Sign                | 265. Appendicitis (McBurney's Point is 2/3 of the way from the umbilicus to anterior superior iliac spine)  |
| Michealis-Gutmann Bodies       | 266. Malakoplakia lesion on bladder due to macros & calcospherites (M-G Bodies): usually due to E. Coli   |
| Monoclonal Antibody Spike      | 267. Multiple myeloma this is called the M protein (usually IgG or IgA)<br>268. MGUS  |
| Myxedema                       | 269. Hypothyroidism   |
| Negri Bodies                   | 270. Rabies   |
| Neuritic Plaques               | 271. Alzheimer's  |
| Neurofibrillary Tangles        | 272. Alzheimer's  |
| Non-pitting Edema              | 273. Myxedema<br>274. Anthrax Toxin   |
| Notching of Ribs               | 275. Coarctation of Aorta   |
| Nutmeg Liver                   | 276. CHF = causing congested liver  |
| Owls Eye Cells                 | 277. CMV<br>278. Reed Sternburg Cells (Hodkins Lymphoma)<br>279. Aschoff cells seen w/ Rheumatic Fever  |
| Painless Jaundice              | 280. Pancreatic CA (head)   |
| Pannus                         | 281. Rheumatoid arthritis, also see morning stiffnes that ↓ w/ joint use, HLA-DR4   |
| Pautrier's Microabscesses      | 282. Mycosis fungoides (cutaneous T-cell lymphoma), Sezary  |
| Philadelphia Chromosome        | 283. CML  |
| Pick Bodies                    | 284. Pick's Disease   |
| 2 types of COPD                | 285. Pink Puffer - Type A: Emphysema<br>286. Blue Bloater - Type B: Bronchitis<br>287. Emphysema Centraoacinar - smoking Panacinar - $\alpha_1$ -antitrypsin deficiency |
| Podagra                        | 288. Gout (MP joint of hallux)  |
| Port-Wine Stain                | 289. Hemangioma   |
| Posterior Anterior Drawer Sign | 290. Tearing of the ACL   |
| Psammoma Bodies                | 291. Papillary adenocarcinoma of the thyroid<br>292. Serous papillary cystadenocarcinoma of the ovary<br>293. Meningioma<br>294. Mesothelioma                           |
| Pseudohypertrophy              | 295. Seen w/ Duchenne muscular dystrophy @ the claf muscles, due to ↑ fat   |
| Punched-Out Bone Lesions       | 296. Multiple myeloma   |

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| Rash on Palms & Soles                     | 297. 2° Syphilis<br>298. RMSF<br>299. Coxsackie virus infection: Hand-Foot-Mouth Disease  |
| Red Morning Urine                         | 300. Paroxysmal nocturnal hemoglobinuria. You would use <b>Ham's test</b> to confirm.   |
| Reed-Sternberg Cells                      | 301. Hodgkin's Disease  |
| Reid Index Increased                      | 302. Chronic bronchitis = ↑d ratio of bronchial gland to bronchial wall thickness   |
| Reinke Crystals                           | 303. Leydig cell tumor  |
| Rouleaux Formation                        | 304. Multiple myeloma RBCs stacked as poker chips   |
| S3 Heart Sound                            | 305. L→R Shunt (VSD, PDA, ASD)<br>306. Mitral Regurg<br>307. LV Failure   |
| S4 Heart Sound                            | 308. Pulmonary Stenosis<br>309. Pulmonary HTN   |
| Schwartzman Reaction                      | 310. <i>Neisseria meningitidis</i> impressive rash with bugs  |
| Smith Antigen                             | 311. SLE (also anti-dsDNA)<br>312. Malar Rash, Wire loop kidney lesions, Joint pain, False (+) syphilis test (VDRL)<br>313. 90% 14-45 yo females<br>314. also seen w/ use of INH; Procainamide; Hydralazine = SLE-like syndrome             |
| Soap Bubble on X-Ray                      | 315. Giant cell tumor of bone   |
| Spike & Dome Glomeruli                    | 316. Membranous glomerulonephritis = Nephrotic syndrome<br>317. Spike = basement membrane material & Dome = immune complex deposits (IgG or C3)   |
| String Sign on X-ray                      | 318. Crohn's bowel wall thickening  |
| Target Cells                              | 319. Thalassemia in α Thalassemia w/ no α gene: Hydrops Fetalis & Intrauterine death associations = HbBarts   |
| Tendinous Xanthomas                       | 320. Familial Hypercholesterolemia  |
| Thyroidization of Kidney                  | 321. Chronic pyelonephritis   |
| Tophi                                     | 322. Gout   |
| Tram-Track Glomeruli                      | 323. Membranoproliferative GN: Nephritic syndrome - basement membrane is duplicated into 2 layers   |
| Trousseau's Sign                          | 324. Visceral ca, classically pancreatic (migratory thrombophlebitis)<br>325. Hypocalcemia (carpal spasm)<br>326. <i>These are two entirely different disease processes and different signs, but they unfortunately have the same name.</i> |
| Virchow's Node                            | 327. Supraclavicular node enlargement by metastatic carcinoma of the stomach  |
| Warthin-Finkeldey Giant Cells             | 328. Measles  |
| WBC Casts                                 | 329. Pyelonephritis   |
| Whipple's Triad                           | 330. CNS dysfunction - Hypoglycemic episodes - glu injection reverses CNS Symp'ts   |
| Wire Loop Glomeruli                       | 331. Lupus nephropathy, type IV (diffuse proliferative form)  |
| ↑ AFP in amniotic fluid or mother's serum | 332. Spina Bifida<br>333. Anencephaly   |
| ↑ Uric Acid                               | 334. Gout<br>335. Lesch Nyhan<br>336. Myeloproliferative Disorders<br>337. Diuretics (Loop & Thiazides)   |
| ↓ FEV <sub>1</sub> /FVC                   | 338. COPD   |
| "Ground Glass" on chest x-ray (Hyaline)   | 339. Due to <i>Pneumocystis carinii</i><br>340. Seen w/ Atelectasia   |
| Honey Combing of the lung                 | 341. Seen w/ Asbestosis (a restrictive lung disease)  |
| Crescents                                 | 342. Goodpastures syndrome (pneumonia w/ hemoptysis & rapidly progressive glomerulonephritis)   |
| Linear Ig Deposits                        | 343. Goodpastures syndrome  |
| 45 Degree Branch Points                   | 344. Aspergillosis  |
| PAS(+) Dutcher Bodies                     | 345. Waldenstrom's Macroglobulinemia = ↑IgM = Hyperviscosity  |
| "Ground Glass" in Abdomen (Hyaline)       | 346. Seen in the hepatocytes of healthy carriers of HBsAg in liver biopsies   |
| "Signet Ring" Cells                       | 347. Cells that replace the ovaries, due to Krukenberg's tumor that has metastasized from the stomach   |

|                                   |   |
|-----------------------------------|---|
| Ground Glass Appearance (Hyaline) | 348. Seen w/ Progressive Multifocal Leukoencephalopathy oligodendrocytes<br>349. Nuclei seen in Papillary CA of the thyroid (malignant) |
| Congo Red                         | 350. Shows amyloid deposition in plaques & vascular walls   |
| Meningiomas & Progesterone        | 351. Some meningiomas have Progesterone receptors = rapid growth in pregnancy can occur   |
| Tuberous Sclerosis Triad          | 352. Seizures; Mental retardation; Leukoderma (congenital facial white spots or macules);<br>angiofibromas                              |
| Cowdry A Inclusions               | 353. Seen w/ Herpes Simplex Encephalitis - in oligodendroglia   |
| Devic's Syndrome                  | 354. "Neuromyelitis Optica"<br>355. A variant of multiple sclerosis: rapid demyelination of the optic nerve & spinal cord w/ paraplegia |
| c-erb B2                          | 356. Breast Cancer association  |
| Foster-Kennedy Syndrome           | 357. A tumor causing blindness & loss of smell w/ papilloedema  |
| Hoffman's Sign                    | 358. Flicking of the middle finger's nail   |
| Red Nucleus Destruction           | 359. Intention tremors of the arm   |
| Ventral Spinocerebellar tr.       | 360. Unconscious proprioception of lower extremities  |
| Dorsal Spinocerebellar tr.        | 361. Unconscious proprioception & fine motor movements  |
| Cuneocerebellar tr.               | 362. Unconscious proprioception & fine motor movements of upper extremities   |
| Dorsal Column                     | 363. Conscious proprioception of the body   |
| Lateral Spinothalamic tr.         | 364. Pain & Temperature sensation   |
| Ventral Spinothalamic tr.         | 365. Light touch perception   |
| SVA                               | 366. Taste & Smell  |
| GSE                               | 367. Muscles of the eye & of the tongue   |
| SSA                               | 368. Vision; Hearing; Equilibrium   |
| GVA                               | 369. Sensation of tongue; soft palate. Carotid Body & Sinus innervation   |
| GVE                               | 370. Edinger Westphal = parasympathetic eye innervation<br>371. Gland innervation = secretions<br>372. Viscera                          |
| GSA                               | 373. Pain & temperature of face<br>374. Sensation of external ear   |
| SVE                               | 375. Innervation of muscles of mastication, facial expressions, larynx & pharynx  |
| LMN Lesion                        | 376. Werdnig Hoffman (progressive infantile muscular atrophy)<br>377. Poliomyelitis   |
| Sensory Pathway Lesion            | 378. Subacute Combined Degeneration = Friedrich's Ataxia = B12 deficiency<br>379. Tabes Dorsalis (Neurosyphilis)                        |
| Both UMN & LMN Lesion             | 380. ALS = Lou Gherig's Disease   |
| Both Sensory & Motor Lesion       | 381. Brown Sequard<br>382. Anterior Spinal artery Occlusion   |
| Suprachiasmatic Nucleus           | 383. Controls circadian rhythm  |
| Ventromedial Nucleus              | 384. Satiety center. Savage behavior & obesity when lesioned  |
| Lateral Nucleus                   | 385. Induces eating. Starvation when lesioned   |
| Arcuate Nucleus                   | 386. Releases PIF (dopa-ergic neurons)  |
| Mamillary Body                    | 387. Can have hemorrhages as seen in Wernicke's Encephalopathy  |
| Acanthocytes                      | 388. RBCs w/ spiny projections. Seen in Abetalipoproteinemia.   |

## Most Common...

|                                      |  |
|--------------------------------------|--|
| 1° Tumor arising from bone in adults | 389. Osteosarcoma  |
| Adrenal Medullary Tumor - Adults     | 390. Pheochromocytoma: 5 P's: ↑ Pressure; Pain (Headache); Perspiration; Palpitations;<br>Pallor/Diaphoresis |
| Adrenal Medullary Tumor - Children   | 391. Neuroblastoma   |
| Agent of severe viral encephalitis   | 392. Herpes simplex  |



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|---|---|
| Aggressive lung tumor                         | 393. Small cell or oat cell   |
| Associated with gallstones                    | 394. Adenocarcinoma   |
| Bacterial Meningitis - adults                 | 395. <i>Strep pneumoniae</i> & in young adults = <i>Neisseria meningitidis</i>  |
| Bacterial Meningitis - elderly                | 396. <i>Neisseria meningitidis</i>  |
| Bacterial Meningitis - newborns               | 397. <i>E. coli</i> / Group B Strep.  |
| Bacterial Meningitis - toddlers               | 398. Hib  |
| Benign epithelial tumor of oral mucosa        | 399. Papilloma  |
| Benign fallopian tube tumor                   | 400. Adenomatoid  |
| Benign ovarian tumor                          | 401. Mature(Native) Teratoma = benign dermatoid   |
| Benign tumor of soft tissue                   | 402. Lipoma   |
| Benign tumor of the breast <25yoa             | 403. Fibroadenoma   |
| Benign tumor of the liver                     | 404. Hemangioma   |
| Benign tumor of the vulva                     | 405. Hidradenoma  |
| Benign uterine tumor                          | 406. Leiomyoma: estrogen sensitive: changes size during pregnancy & menopause   |
| Bone Tumors                                   | 407. Metastases from Breast & Prostate  |
| Brain Tumor - Child                           | 408. Medulloblastoma (cerebellum)   |
| Brain Tumor -Adult                            | 409. Astrocytoma (including Glioblastoma Multiforme) then: mets, meningioma, Schwannoma   |
| Breast Carcinoma                              | 410. Invasive Duct Carcinoma  |
| Breast Mass                                   | 411. Fibrocystic Change: premenopausal women (Carcinoma is the most common in post-menopausal women)                            |
| Bug in Acute Endocarditis                     | 412. <i>Staph aureus</i>  |
| Bug in debilitated, hospitalized pneumonia pt | 413. <i>Klebsiella</i>  |
| Bug in Epiglottitis                           | 414. Hib  |
| Bug in GI Tract                               | 415. <i>Bacteroides</i> (2 <sup>nd</sup> - <i>E. coli</i> )   |
| Bug in IV drug user bacteremia / pneumonia    | 416. <i>Staph aureus</i>  |
| Bug in PID                                    | 417. <i>N. Gonorrhoeae</i>  |
| Bug in Subacute Endocarditis                  | 418. <i>Strep Viridans</i>  |
| CA of urinary collecting system               | 419. Transitional cell CA (assoc. w/ benzidine; $\beta$ naphthylamine; aniline dyes; long term tx with cyclophosphamide)        |
| Cardiac 1 <sup>ry</sup> Tumor - Adults        | 420. Myxoma: "Ball Valve"   |
| Cardiac 1 <sup>ry</sup> Tumor - Child         | 421. Rhabdomyoma - associated w/ Tuberous sclerosis   |
| Cardiac Tumor - Adults                        | 422. Metastases   |
| Cardiomyopathy                                | 423. Dilated (Congestive) Cardiomyopathy: Alcohol, BeriBeri, Cocaine use, Coxsackie B, Doxorubicin<br>424. Systolic Dysfunction |
| Cause of 2 <sup>ry</sup> HTN                  | 425. Renal Disease  |
| Cause of Addison's                            | 426. Autoimmune (2 <sup>nd</sup> - infection)   |
| Cause of breast lumps                         | 427. CA of the breast   |
| Cause of chronic endometriosis                | 428. TB   |
| Cause of Congenital Adrenal Hyperplasia       | 429. 21-Hydroxylase Deficiency: NaCl lost & Hypotension (then, 11- NaCl retention & HTN)  |
| Cause of Cushings                             | 430. Exogenous Steroid Therapy (then, 1 <sup>ry</sup> ACTH, Adrenal Adenoma, Ectopic ACTH)                                      |
| Cause of Death in Alzheimer pts               | 431. Pneumonia  |
| Cause of Death in Diabetics                   | 432. MI   |
| Cause of Death in premature                   | 433. NRDS = hyaline membrane disease  |
| Cause of Death in SLE pts.                    | 434. Lupus Nephropathy Type IV (Diffuse Proliferative) = Renal Disease  |
| Cause of Dementia                             | 435. Alzheimer's  |

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|---|---|
| Cause of Dementia (2 <sup>nd</sup> most common)           | 436. Multi-Infarct Dementia   |
| Cause of Dwarfism   | 437. Achondroplasia   |
| Cause of Food poisoning                                   | 438. <i>Staph aureus</i>  |
| Cause of Hematosalpyngia                                  | 439. Ectopic pregnancy  |
| Cause of Hypoparathyroidism                               | 440. Throidectomy   |
| Cause of Hypothyroidism                                   | 441. Corrective surgery I31 treatment   |
| Cause of Kidney infections                                | 442. <i>E. coli</i>   |
| Cause of Liver disease in US                              | 443. Alcohol consumption  |
| Cause of Malignancy in children                           | 444. Acute leukemia   |
| Cause of Mental retardation                               | 445. Down's   |
| Cause of Mental retardation (2 <sup>nd</sup> most common) | 446. Fragile X  |
| Cause of NaCl loss and Hypotension                        | 447. 21 hydroxylase deficiency  |
| Cause of PID  | 448. <i>N. gonorrhoea</i>   |
| Cause of Portal cirrhosis                                 | 449. Alcohol  |
| Cause of Preventable Blindness                            | 450. Chlamydia (serotypes A,B,Ba,C)   |
| Cause of Pulmonary HTN                                    | 451. COPD   |
| Cause of Secondary Hypertension                           | 452. Renal disease  |
| Cause of SIADH  | 453. Small Cell Carcinoma of the Lung   |
| Cause of UT Obstruction in men                            | 454. BPHyperplasia  |
| Cause Pernicious Anemia                                   | 455. Chronic atrophic gastritis = no production of intrinsic factor   |
| Chromosomal Disorder                                      | 456. Down's   |
| Common Tumor of the Appendix                              | 457. Carcinoid tumor: flushing; diarrhea; bronchospasm; RHeart valvular lesions<br>458. Txt: Methysergide (5HT antagonist)  |
| Congenital Cardiac Anomaly                                | 459. VSD (membranous > muscular)  |
| Congenital Early Cyanosis                                 | 460. Tetralogy of Fallot =right to left shunt   |
| Coronary Artery Thrombosis                                | 461. LAD artery: MI   |
| Demyelinating Disease                                     | 462. Multiple Sclerosis: (Charcot Triad = nystagmus, intention tremor, scanning speech)<br>463. Periventricular plaques w/ ↓ Oligodendrocytes<br>464. ↑ IgG in CSF, Optic Neuritis, MLF Syndrome = Internuclear Ophthalmoplegia, bladder incontinence |
| Dental Tumor  | 465. Odontoma   |
| Dietary Deficiency  | 466. Iron   |
| Disease of the Breast                                     | 467. Fibrocystic disease  |
| Disseminated Opportunistic Infection in AIDS              | 468. CMV ( <i>Pneumocystis carinii</i> is most common overall)  |
| Esophageal Cancer   | 469. SCCA   |
| Fallopian Tube Malignancy                                 | 470. AdenoCA  |
| Fatal Genetic Defect in Caucasians                        | 471. Cystic Fibrosis (chromosome 7q)  |
| Female Tumor  | 472. Leiomyoma  |
| Form of Amyloidosis                                       | 473. Immunologic (Bence Jones protein in multiple myeloma is also called the Amyloid Light Chain)   |
| Form of Tularemia   | 474. Ulceroglandular  |
| Germ Cell Tumor of Testes                                 | 475. Seminoma (analogous to dysgerminoma of ovaries)  |
| Gynecological Malignancy                                  | 476. Endometrial Carcinoma  |
| Gynecological Finding                                     | 477. Endometrial CA   |
| Heart Murmur  | 478. Mitral Valve Prolapse  |

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| Heart Valve in Bacterial Endocarditis                  | 479. Mitral   |
| Heart Valve in Bacterial Endocarditis in IV drug users | 480. Tricuspid  |
| Heart Valve involved in Rheumatic Fever                | 481. Mitral then Aortic   |
| Hereditary Bleeding Disorder                           | 482. Von Willebrand's Disease   |
| Hormone secreted in Pituitary Adenoma                  | 483. Prolactin  |
| Inherited disease of the Kidney                        | 484. Adult polycystic kidney disease: associated w/ polycystic liver, Berry aneurysms, Mitral prolapse<br>485. APD1 - chromosome 16 |
| Intracranial tumor in adults                           | 486. Glioblastoma multiforme  |
| Islet Tumor  | 487. Insulinoma = $\beta$ cell tumor  |
| Liver 1 <sup>st</sup> Tumor                            | 488. Hepatoma   |
| Liver Disease  | 489. Alcoholic Liver Disease  |
| Location of Adenocarcinoma of the Pancreas             | 490. Head (99%)   |
| Location of Adult Brain Tumors                         | 491. Above Tentorium  |
| Location of Childhood Brain Tumors                     | 492. Below Tentorium  |
| Lung Tumor, malignant or benign                        | 493. Malignant  |
| Lung Tumor, primary or secondary                       | 494. Secondary  |
| Lysosomal Storage Disease                              | 495. Gaucher's  |
| Malignancy in Women                                    | 496. Lung (2 <sup>nd</sup> breast)  |
| Malignancy of the Larynx                               | 497. Glottic CA (squamous cell)   |
| Malignancy of the Small Intestine                      | 498. Adenocarcinoma   |
| Malignancy Vulva                                       | 499. Squamous cell CA   |
| Malignant Eye Tumor in Kids                            | 500. Retinoblastoma   |
| Malignant Tumor of the Liver                           | 501. Hepatocellular CA  |
| Motor Neuron Disease                                   | 502. ALS  |
| Muscular Dystrophy                                     | 503. Duchenne's: Dystrophin deletion. Presents <5yoa weakness at pelvic girdles w/ upward progression                               |
| Nasal Tumor  | 504. Squamous cell CA   |
| Neoplasm - Child                                       | 505. Leukemia   |
| Neoplasm - Child (2 <sup>nd</sup> most common)         | 506. Medulloblastoma of brain (cerebellum)  |
| Neoplasm of the West                                   | 507. Adeno CA of the rectum and/or colon  |
| Neoplastic Polyp                                       | 508. Tubular adenoma  |
| Nephrotic Syndrome in Adults                           | 509. Membranous Glomerulonephritis  |
| Nephrotic Syndrome in Children                         | 510. Minimal Change (Lipoid Nephrosis) Disease (responds well to steroid txt)   |
| Non Hodgkin's Lymphoma                                 | 511. Follicular small clear cell  |
| Number of Deaths per year in Women                     | 512. Lung CA  |
| Skin tumor   | 513. Basal cell CA  |
| Opportunistic infection in AIDS                        | 514. PCP  |
| Ovarian Malignancy                                     | 515. Serous Cystadenocarcinoma  |
| Ovarian Tumor  | 516. Hamartoma  |
| Pancreatic Tumor                                       | 517. Adeno (usually in the head)  |

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| Patient with ALL / CLL / AML / CML               | 518. ALL - Child / CLL - Adult over 60 / AML - Adult over 60 / CML - Adult 35-50                    |
| Patient with Goodpasture's                       | 519. Young male   |
| Patient with Reiter's                            | 520. Male   |
| Pituitary Tumor                                  | 521. Prolactinoma (2 <sup>nd</sup> - Somatotrophic "Acidophilic" Adenoma)                           |
| Place for Primary Squamous Cell CA of esophagus  | 522. Mid 1/3  |
| Place for Peptic Ulcer Disease                   | 523. Lesser curvature in antrum - associated w/ blood group O                                       |
| Primary Benign Salivary Tumor                    | 524. Pleomorphic Adenoma (Mixed) - 90% localized to the parotid                                     |
| Primary Hyperparathyroidism                      | 525. Adenomas (followed by: hyperplasia, then carcinoma)  |
| Primary Malignancy of Bone                       | 526. Osteosarcoma   |
| Primary Malignancy of Small Intestine            | 527. Lymphoma   |
| Pt. with Hodgkin's                               | 528. Young Male (except Nodular Sclerosis type - Female)  |
| Pt. with Minimal Change Disease                  | 529. Young Child  |
| Renal Malignancy                                 | 530. Renal cell CA  |
| Renal Malignancy of Early Childhood              | 531. Wilm's tumor (neuroblastoma) - chromosome 11p  |
| Salivary Tumor                                   | 532. Pleomorphic adenoma  |
| Secondary Hyperparathyroidism                    | 533. Hypocalcemia of Chronic Renal Failure  |
| Sexually Transmitted Disease                     | 534. Chlamydia (sero types D-K)   |
| Site of Diverticula                              | 535. Sigmoid Colon  |
| Site of Embolic Occlusion                        | 536. Middle cerebral aa: contralateral paralysis; aphasias; motor & sensory loss                    |
| Site of Metastasis                               | 537. Regional Lymph Nodes   |
| Site of Metastasis (2 <sup>nd</sup> most common) | 538. Liver  |
| Sites of Atherosclerosis                         | 539. Abdominal aorta > coronary > popliteal > carotid   |
| Skin CA of Fair Skinned People                   | 540. Malignant melanoma   |
| Skin Cancer                                      | 541. Basal Cell Carcinoma   |
| Small Intestine Congenital Anomaly               | 542. Meckel's diverticulum  |
| Stomach Cancer                                   | 543. Adeno - associated w/ blood group A  |
| Testicular Tumor                                 | 544. Seminoma = malignant painless testes growth  |
| Thyroid Anomaly                                  | 545. Thyroglossal duct cyst   |
| Thyroid CA                                       | 546. Papillary CA   |
| Tracheoesophageal Fistula                        | 547. Lower esophagus joins trachea / upper esophagus - blind pouch - polyhydramnios association     |
| Tumor in men <20                                 | 548. Germ cell tumor  |
| Tumor of Infancy                                 | 549. Benign vascular tumor = port wine stain = Hemangioma   |
| Tumor of the Stomach >50 years of age            | 550. CA of stomach (adeno CA)   |
| Type of Hodgkin's                                | 551. Mixed Cellularity (versus: lymphocytic predominance, lymphocytic depletion, nodular sclerosis) |
| Type of Non-Hodgkin's                            | 552. Follicular, small cleaved  |
| Type of Portal Cirrhosis                         | 553. Micronodular   |
| Type of Soft Tissue Tumor of Childhood           | 554. Rhabdomyosarcoma   |
| Vasculitis (of medium & small arteries)          | 555. Temporal Arteritis (branch of Carotid Artery)  |
| Viral Encephalitis                               | 556. HSV  |
| Worm Infection in US                             | 557. Pinworm (2 <sup>nd</sup> - Ascaris)  |

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| Worst Prognosis in Thyroid Cas          | 558. Follicular CA   |
| Cause of Lobar Pneumonia                | 559. Strep. Pneumoniae   |
| Cause of Death b/t 24-44 yoa            | 560. AIDS  |
| Cause of Pneumonia in Cystic Fibrosis   | 561. Pseudomonas   |
| Cause of Osteomyelitis in IV Drug Users | 562. Pseudomonas   |
| Cause of Infection in Burn Pts          | 563. Pseudomonas   |
| Mental Problem in Males                 | 564. Specific phobia   |
| Intelligence Test                       | 565. Stanford Binet (ages 6 & under)<br>566. WIPSI (ages 4-6)<br>567. WISK-R (for ages 6-17)<br>568. WAIS-R (for > 17 yoa)                           |
| Paraphilia                              | 569. Pedophilia  |
| Metabolite seen w/ Pheochromocytoma     | 570. VMA: vanillylmandelic acid (NE metabolite)  |
| Severe Shigella                         | 571. Dysenteriae   |
| Bug in Otitis Media & Sinusitis in Kids | 572. Strep. Pneumoniae   |
| Cause of a Solitary Brain Abscess       | 573. A. Israeli  |
| Cause of Bacterial Diarrhea in U.S.     | 574. Campylobacter jejuni  |
| Shigella Type                           | 575. S. Sonnei   |
| Cause of Non-Gonococcal Urethritis      | 576. Chlamydia trichomonas   |
| Pneumonia                               | 577. Strep. Pneumoniae   |
| Urethritis                              | 578. N. gonorrrhea   |
| Cause of Glomerulonephritis             | 579. IgA Nephropathy = Berger's Disease  |
| Cause of Viral Pneumonia                | 580. RSV - infants<br>581. Parainfluenza - kids<br>582. Influenza virus - adults<br>583. Adeno virus - military recruits                             |
| Complication of COPD                    | 584. Pulmonary infections  |
| Cause of Death w/ SLE                   | 585. Renal failure   |
| Atrial Septal Defect                    | 586. Ostium Secundum Type  |
| Warm Antibody                           | 587. Most common form of immune hemolytic anemia<br>588. IgG auto antibodies to RBC<br>589. See spherocytosis; (+) Coombs' test; complication to CLL |
| Immunodeficiency                        | 590. IgA Deficiency  |
| Congenital GIT Anomaly                  | 591. Meckel's Diverticulum: persistence of vitelline duct/yolk sac stalk   |
| Cause of Congenital Malformation        | 592. Fetal Alcohol Syndrome  |

## Pharmacology

### Autonomic Nervous System

|                |   |
|----------------|---|
| Epinephrine    | 1. $\alpha_1$ , $\alpha_2$ , $\beta_1$ , $\beta_2$                            |
| Norepinephrine | 2. $\alpha_1$ , $\alpha_2$ , $\beta_1$ (no $\beta_2$ activity)                |
| GABA           | 3. Causes an inhibitory cell hyperpolarization                                |
| Muscarinic-r   | 4. Uses DAG & IP3 as 2 <sup>nd</sup> messengers<br>5. Parasympathetic control |

|                       |   |
|-----------------------|---|
| Bethanechol           | 6. Cholinergic. ↑ GI & Bladder motility. <b>Txt atonic bladder post-op</b>  |
| Pilocarpine           | 7. Cholinergic. Pupillary constrictor= miosis. Ciliary constriction= accommodation.<br>8. <b>Txt acute glaucoma</b>                                     |
| Isoflurophate         | 9. Organophosphate. Irreversible acetylcholinesterase (-)r  |
| Pralidoxime           | 10. "2PAM". Reverses organophosphate binding to acetylcholinesterase  |
| Neostigmine           | 11. Reversible acetylcholinesterase (-)r<br>12. <b>Txt Myasthenia Gravis</b>  |
| Myasthenia Gravis     | 13. Antibodies to Ach-r. ↑g muscular weakness due to Ach's weak postsynaptic effect @ NMJ. Inactivates-r  |
| Tubocurium            | 14. Nondepol. Competitive cholinergic N-r (-)r.<br>15. Prevents Ach binding but does not activate NMJ<br>16. ↑ Histamine release= ↓ BP & ↑ bronchospasm |
| Trimethaphan          | 17. Nonselectively binds N-r of the PS- and SNS   |
| Pancurium             | 18. More potent than tubocurium w/o histamine release   |
| Succinylcholine       | 19. Depol. Non competitive (-)r of muscle aciton<br>20. Opens Na Ch.= fasciculations. Closes Na Ch.= paralysis. Continuous infusion.                    |
| α1 & Eye              | 21. Mydriasis due to norepinephrine. Prazosin (-).  |
| M-r & Eye             | 22. Miosis due to Ach. Atropine (-).  |
| Sympathetic           | 23. Post ganglionic sympathetic fibers releases norepinephrine  |
| Parasym.              | 24. Post ganglionic parasympathetic fibers release Ach  |
| M3-r & Eye            | 25. Contracts sphincter = miosis. Contracts ciliary = accommodation.  |
| M2-r & Heart          | 26. Negative chronotropy: ↓ HR = vagal arrest<br>27. Negative inotropy: ↓ contractility   |
| M3-r & Lung           | 28. Bronchospasm ↑ secretions   |
| M3-r & GI             | 29. ↑ motility (cramps & diarrhea). Involuntary defecation  |
| Tacrine               | 30. Acetylcholine esterase (-)r. <b>Txt Alzheimer's</b>   |
| Atropine              | 31. <b>DOC w/ vagal arrest</b>  |
| Glycopyrrolate        | 32. M-r(-). Antispasmodic. Txt peptic ulcers.   |
| Pirenzepine           | 33. M-r(-). Antispasmodic. Txt peptic ulcers.   |
| Doxacurium            | 34. Most potent competitive non-depol NMJ (-)r. No cardiovascular side effects. No Histamine release.   |
| β bungarotoxin        | 35. Prevent the release of Ach from vesicles @ the pre synaptic nerve ending  |
| α bungarotoxin        | 36. Irreversible N-r (-)r = ↓ action potentials   |
| α1 & Eye              | 37. Contracts radial muscle = mydriasis (pupil dilation)  |
| α1 & Arterioles       | 38. Constriction: ↑TPR = ↑ Diastolic pressure = ↑ Afterload   |
| α1 & Venules          | 39. Constriction: ↑ Venous return = ↑ Preload   |
| α1 & Sex Function     | 40. Ejaculation   |
| ↑ Diastolic           | 41. ↑ α1 = ↑TPR   |
| ↓ Diastolic           | 42. ↑ β2; Direct acting vasodilators; (+)Cholinergics   |
| β1 & Heart            | 43. (+)chronotropism = ↑HR.<br>44. (+)inotropism = ↑ contractility; ↑SV; ↑CO; ↑O <sub>2</sub> consumption.<br>45. ↑ conduction velocity                 |
| Phenylephrine         | 46. α1 (+) Nasal decongestant.  |
| β2(+) Asma Drugs      | 47. Metaproterenol; Albuterol; Terbutaline; Ritodrine; Salmeterol   |
| Ritodrine/Terbutaline | 48. Relaxes myometrium used in pre-mature labor pains   |
| Phentolamine          | 49. Epi reversal. Blocks α, vasodilation occurs. Pt goes from HyperTN to HypoTN.<br>50. Txt pheochromocytoma = ↓BP                                      |
| Terazosin             | 51. Txt BPH   |
| Yohimbine             | 52. ↑ sympathetic outflow = α2 (-). Txt impotence.  |
| Cardioselective NMJ   | 53. Pancuronium = ↑HR due to atropine-like anti muscarinic vagolytic effect & Gallamine (-)r  |
| Ecothiophate          | 54. Irreversible cholinesterase (-)r.   |
| Pyridostigmine        | 55. Cholinomimetic that ↑s M & N-r effects. (-) acetylcholinesterase & plasma cholinesterase<br>56. <b>DOC for the oral Txt of MG</b>                   |

# Cardio

|               |   |
|---------------|---|
| Digoxin       | 1. ↓ AV nodal conduction/ inh. Na/K/ATPase = inc. Ca conc. in heart cells = inc. contraction force  |
| Diltiazem     | 2. Txt black men. Txt AV nodal re entrance  |
| Quinidine     | 3. ↓ AV nodal conduction. Cinchonism. Anticholinergic= aggravate MG. Hypotension= α block   |
| Verapamil     | 4. ↓ AV nodal conduction. ↓ BP. Negative inotrope= no CHF use   |
| Propranolol   | 5. ↓ AV nodal conduction. ↓ BP. Negative inotrope(= β block) Aggravates Asthma and Diabetes Mellitus via β2 block.  |
| Diazoxide     | 6. Balanced vasodilator.  |
| Nitroprusside | 7. Balanced vasodilator. Unloads heart. ↑s cyanide= pre-txt w/ thiosulfate. Txt Acute HTN/v Crisis  |
| Reserpine     | 8. <b>Txt severe &amp; resistant HTN.</b> Depletes CA. See stuffy nose. No to pts w/ peptic ulcers.   |
| Dobutamine    | 9. At high doses β2(+) offsets α1 = β1 ↑ CO w/o systemic vascular resistance  |
| Dopamine      | 10. At low doses Txt Shock= dilates renal and mesenteric aa= maintain urine output  |
| Esmolol       | 11. Short acting β(-)   |
| Captopril     | 12. Balanced vasodilator. Txt Outpt. CHF see dry cough(bradykinin induced)  |
| Digoxin       | 13. <b>Txt CHF &amp; Atrial Flutter</b> - inotropic - ↓ K+ levels= dig. Toxicity  |
| Dig. Toxicity | 14. Fatal ventricular arrhythmias w/ sever AV block   |
| Quinidine     | 15. ClassIa anti arrhythmic. Moderate Na Ch. Block  |
| Lidocaine     | 16. ClassIb anti arrhythmic. Normalizes conduction. Txt initial MI= control arrhythmias   |
| Flecainide    | 17. ClassIc anti arrhythmic. Marked conduction slowing  |
| Amiodarone    | 18. Long t1/2= need potent doses to obtain desired level for action. See blue skin, ocular deposits, Pulmonary Fibrosis.  |
| NE            | 19. ↑ AV nodal conduction via β1. Metoprolol(-) β1  |
| Ach           | 20. ↓ AV nodal conduction via M receptor. Atropine(-) M-r   |
| Atenolol      | 21. Controls catecholamine induced arrhythmias  |
| Bretylium     | 22. <b>Txt Malignant Ventricular Arrhythmias</b> but causes passing catecholamine release that can aggravate arrhythmias briefly  |
| Nimodipine    | 23. <b>Txt Acute subarachnoid hemorrhage</b> by preventing post hemorrhagic vasospasm   |
| Atropine      | 24. ↓ excess vagal tone as seen in Sinus Bradycardia  |
| Nitrates      | 25. ↓ preload= venous pooling. ↓ MVO2= reflex tachy. ↑ ventr work= dec O2 demand  |
| Propranolol   | 26. Blocks reflex tachy but causes excess brady= ↑ diastole time= ↑ EDV   |
| Verapamil     | 27. ↑ O2 supply via ↓ in vasospasm Txt Prinzmetal's variant angina  |
| Aspirin       | 28. Prevents arterial platelet adhesion (not DVThrombi). Inactivates COX= ↓ platelet production of TxA2, a potent vasoconstrictor   |
| Warfarin      | 29. (-)Vit. K dependent gamma carboxylation of clotting factors= anticoagulation state  |
| Heparin       | 30. Dependent on Antithrombin III activation  |
| TPA           | 31. Binds to fibrin clots & activates plasminogen on the spot. Short t1/2, given IV.<br>32. Does not discriminate b/t fibrin-based clots= bleeding & stroke complications arise |
| Streptokinase | 33. From bacteria= allergies arise. Can see excess bleeding in post-op pts.   |
| Urokinase     | 34. Human source. ↑ plasmin. Can see excess bleeding in post-op pts.  |
| Colestipol    | 35. Bile acid sequestrants. Interrupt bile acid reabsorption= ↑↑ LDL uptake. Cholestyramine same MOA.   |
| Lovastatin    | 36. HMGCoA reductase(-)= ↑ LDL-r synthesis. Pravastatin/ Mevastatin same MOA.   |
| Losartan      | 37. ↓ Aldosterone. ↑ Renin 2-3x's   |
| Diazoxide     | 38. <b>Txt insulinomas.</b> Not balanced vasodilator= onlt dilates arterial smooth muscle   |
| Clonidine     | 39. Central α2(+). ↓ TPR via ↓ symapthetic effect   |
| Methyldopa    | 40. Central α2(+). (++) Coombs= Hemolytic anemia  |
| Phenytoin     | 41. ClassIb. Reverses mild AV block due to digitoxin toxicity   |
| Procainamide  | 42. ClassIa. SLE like syndrome.   |
| Indopamide    | 43. Only Thiazide that will have no effect on cholesterol levels  |

|                        |  |
|------------------------|--|
| Thiazides              | 44. Older black men w/ HTN due to ↑ Renin.   |
| β(-)                   | 45. Young white men w/o asthma (cause bronchospasm)  |
| ACEIs                  | 46. (-) change AI → AII. (-) Bradykinin inactivation. Captopril/ Enalapril<br>47. Cause renal failure = use w/ caution in the elderly            |
| Epinephrine            | 48. ↑ contraction rate & force via β1.<br>49. ↑ systolic but ↓ diastolic BP.<br>50. ↓ peripheral resistance via β2 vasodilation                  |
| Norepi.                | 51. ↑ heart rate and ↑ systolic and diastolic BP<br>52. ↑ peripheral blood vessel resistance   |
| Methyldopa             | 53. DOC for pregnancy induced HTN  |
| Quinidine pre-txt      | 54. Atrial arrhythmia pretxt w/ a drug that will ↓ ventricular response: Dig.;β(-); Ca Ch.(-)  |
| ClassII                | 55. β(-) ↓ risk fo reinfarction & sudden death following MI  |
| "Gray man"             | 56. Amiodarone: ClassIII antiarrhythmia  |
| Bepiridil              | 57. Ca Ch(-). Limited clinical use due to Torsades de Pointes  |
| ACEIs                  | 58. Vasodilate renal efferents > than afferent arterioles: ↓GFR & Filtration pressure<br>59. ↓ Diabetic renal failure progression                |
| Adenosine              | 60. Its receptor is blocked by Methylxanthines (ie... Theophylline)<br>61. Favored for the <b>Txt of Reentrant Supra Ventricular Tachycardia</b> |
| Enoxaparin             | 62. Low molecular weight heparin = Oral anticoagulant  |
| Isoproterenol          | 63. ↑HR & ↓MAP   |
| Variant angina         | 64. Use Ca Ch. (-) r ie... Nifedipine  |
| Contraindicated in CHF | 65. β (-) r = you don't want to ↓ the heart's pumping strength   |

## CNS

|                 |  |
|-----------------|--|
| "TOM"           | 1. Short -acting BDZs:<br>2. Triazolam<br>3. Onazepam<br>4. Midazolam  |
| Butyrophenone   | 5. Haloperidol & Droperidol  |
| Atypical D4     | 6. Clozapine - Thioridazine - Olanzapine - Risperidone = Do not cause EPS  |
| Flumazenil      | 7. BDZ antidote for OD   |
| Methylphenidate | <b>8. Txt attention deficit disorder</b>   |
| Phenytoin       | 9. Causes aplastic anemia/ gingival hyperplasia/ cleft lip & palate  |
| Thiopental      | 10. Short acting Barb  |
| Carbamazepine   | 11. <b>DOC trigeminal neuralgia.</b> Txt lennox gestaut seizures in kids   |
| Atypical D4-r   | 12. Thioridazine; Olanzapine; Clozapine  |
| Pimozide        | <b>13. Txt Tourette's</b>  |
| Risperidone     | 14. Good for negative symptoms   |
| Thioridazine    | 15. Most anti cholinergic neuroleptic  |
| Haloperidol     | 16. Neuroleptic malignant hyperthermia due to chronic D2 block. give Dantrolene and Bromocriptine  |
| Imipramine      | 17. Enuresis   |
| Clomipramine    | 18. <b>Txt OCD</b> See aggressive behavior w/ use  |
| Trazadone       | 19. Priapism   |
| Bupropion       | 20. Helps to quit smoking  |
| SSRIs           | 21. Primarily used for OCD   |
| Fluoxetine      | 22. Good for negative symptoms   |
| Phenelzine      | 23. Irreversible MAOI  |
| Lithium         | 24. Txt manic phase of Bipolar Disorder<br>25. Causes goiter by (-) conversion of T4 to T3<br>26. Nephrogenic diabetes insipidus<br>27. Low salt diet will lead to Li toxicity |
| Alprazolam      | 28. DOC stage fright   |



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|---------------------------|--|
| Propranolol               | 29. Social phobia  |
| $\kappa$ -r               | 30. Spinal analgesia. Euphoria. ++euphoria. ++sedation. Constipation.  |
| $\mu$ -r                  | 31. Supraspinal analgesia. Dysphoria. +respiratory depression. +sedation.  |
| Morphine & O <sub>2</sub> | 32. Admin. is contraindicated to pts on morphine sedation= ↓ CO <sub>2</sub> sensitivity and O <sub>2</sub> admin. can stop breathing. |
| Morphine                  | 33. ↑ ICP = do not give to pt. with head trauma  |
| Morphine OD               | 34. 1.pinpoint pupils 2.↓'d respiraiton 3.coma   |
| Meperidine                | 35. Anesthetic used during labor   |
| Hydromorphone             | 36. $\mu$ (+) used in renal failure  |
| Tramadol                  | 37. Ambulatory txt for mod. to severe pain   |
| Naloxone                  | 38. <b>Txt opioid OD.</b> Reverses respiratory depression  |
| Pentazocine               | 39. Part $\kappa$ (+) & part $\mu$ (-)   |
| Butorphenol               | 40. Part $\kappa$ (+) & part $\mu$ (-)   |
| Nalbuphene                | 41. Part $\kappa$ (+) & part $\mu$ (-)   |
| ↓ GABA                    | 42. ↓ seizure focus= Barbs & BDZs  |
| ↓ Fast Na Ch.             | 43. ↓ electrical activity spread = Phenytoin & Carbamazepine   |
| Methoxyflurane            | 44. Can be nephrotoxic. Needs low MAC for anesthetic induction.  |
| Enflurane                 | 45. Can cause tonic/clonic muscle spasms   |
| Isoflurane                | 46. Can cause bronchospasm   |
| Halothane                 | 47. Can cause ventricular extrasystoles & Malignant hyperthermia & Hepatitis   |
| Nitric Oxide              | 48. No effect on HR. Needs high MAC for anesthetic induction.  |
| Thiopental                | 49. Short acting Barb.   |
| Ketamine                  | 50. Dissociative anesthetic  |
| Droperidol                | 51. Can be used in combo w/ Fentanyl for neuroleptoanalgesic effect<br>52. Neuroleptic tranquilizer. Has mild alpha block              |
| Fentanyl                  | 53. Can be used on combo w/ Droperidol for neuroleptoanalgesic effect<br>54. Used transdermally for chronic pain                       |
| Midazolam                 | 55. Pre anesthetic. Induces amnesia  |
| Primidone                 | 56. Biotransformed to Phenobarb.   |
| C & A delta Fibers        | 57. First fibers to be blocked w/ anesthesia   |
| Esters                    | 58. Procaine, Tetracaine, Benzocaine<br>59. Broken down and make PABA (allergen)   |
| Amides                    | 60. Lidocaine, Mepivacaine, Bupivacaine, Etidocaine= "i" before "caine" always an amide<br>61. Metabolized in the liver                |
| Amphetamine               | 62. DA reuptake (-)r. MAOI. Parkinson's txt  |
| Bromocriptine             | 63. D2(+). Used w/ L-Dopa for "on-off" phenomenon of Parkinson's   |
| Benzotropine              | 64. Ant M w/ some DA reuptake (-). Parkinson's txt   |
| Amantidine                | 65. ↓ DA reuptake. Can cause livido reticularis= skin mottling.  |
| Diphenhydramine           | 66. Txt early Parkinson's stages   |
| Pergolide                 | 67. > Effective & longer acting than Bromocriptine   |
| Ethosuximide              | 68. DOC for Absence seizures   |
| Tranylcypromine           | 69. MAOI = antidepressant  |
| SSRI & MAOI               | 70. Fatal combo, especially seen with the use of Paroxetine or Fluoxetine (SSRIs) and Tranylcypromine (MAOI)                           |
| Labor opioids             | 71. Meperidine & Nalbuphine  |
| Desipramine causes        | 72. Sudden cardiac death in children   |

## Anti-Infective

|                                       |  |
|---------------------------------------|--|
| Primaquine                            | 4. Malaria prophylaxis<br>5. Used for extraerythrocytic forms Plasmodium vivax or P. ovale   |
| Ciporfloxacin                         | 6. Quinolone derivative  |
| Sulfonamides                          | 7. PABA structural analogs<br>8. Inhibit Folic acid synthesis  |
| Tetracyclines, anuria & the exception | 9. Should not be used in anuric pt due to production of (-) Nitrogen balance & ↑d BUN levels.<br>10. Doxycycline is the exception  |
| Ceftriazone                           | 11. 3 <sup>rd</sup> generation cephalosporin<br>12. DOC for bacterial meningitis in kids (ie... HiB)<br>13. One dose txt of gonorrhea  |
| Hepatic coma DOC                      | 14. Neomycin (aminoglycoside) - it suppresses the normal flora = ↓g NH <sub>4</sub> production = ↓g free nitrogen levels in the bloodstream.   |
| Clavulanic acid                       | 15. Irreversible (-) of β lactamases, but ot of transpeptidase = use w/ α β lactamase sensitive penicillin   |
| Piperacillin                          | 16. Txt Pseudomonas aeruginosa & Klebsiella<br>17. Broad spectrum antibiotic   |
| Streptomycin (aminoglycoside)         | 18. Txt Mycobacterium tuberculosis   |
| Isoniazid                             | 19. Most commonly used drug for TB.<br>20. Usually combined w/ Rifampin and/or Ethambutol<br>21. Pre Txt w/ Pyridoxine (Vit B6) can prevent peripheral neuritis'   |
| Pyrantel Pamoate                      | 22. Txt of Hookworm disease<br>23. Depolarizing NMJ (-)r   |
| Buy "AT" 30, "CELL" at 50             | 24. A = Aminoglycosides<br>25. T = Tetracyclines<br>26. C = Chloramphenicol<br>27. E = Erythromycin (macrolide)<br>28. L = Clindamycin<br>29. L = Lincomycin   |
| Cefoxitin                             | 30. Txt intraabdominal infections (ie... w/ Bacteroides fragilis)<br>31. Traditional txt has been Clindamycin & Gentamycin   |
| Chloramphenicol                       | 32. Broad spectrum antibiotic<br>33. Bone marrow depression (common) - Aplastic anemia (rare)<br>34. Gray baby syndrome (chloramphenicol cannot be conjugated)<br>35. DOC Typhoid Fever (symptomatic Salmonella infection)<br>36. DOC HiB meningitis in kids - especially resistant strain to ampicillin |
| Nifurtimox                            | 37. Txt trypanosomiasis  |
| Metronidazole                         | 38. Txt Leishmaniasis & Amebiasis<br>39. Good for anaerobic bacteria = Bacteroides fragilis<br>40. DOC Trichomoniasis<br>41. DOC Giardia lamblia   |
| Txt P. carinii                        | 42. TMP-SMX & Pentamidine  |
| Tetracycline                          | 43. Txt of Brucellosis & Cholera<br>44. Txt Rocky Mountain Spotted Fever<br>45. Txt spirochete infections = Lyme disease (Borrelia burgdorferi)  |
| TMP-SMX                               | 46. (-) dihydrofolate reductase activity   |
| Benzathine Penicillin G               | 47. Long duration of action = given once every 3-4 weeks for Txt of Syphilis   |
| Praziquantel                          | 48. Txt Schistosomiasis (trematode [fluke] infections)   |
| Melarsoprol                           | 49. Txt Trypanosomiasis that has neurological symptoms   |
| Stibogluconate                        | 50. Txt Leishmaniasis  |
| Fluconazole                           | 51. Txt fungal encephalitis  |
| Amphotericin B                        | 52. Polyene antifungal   |
| Ketoconazole MOA                      | 53. (-) fungal ergosterol synthesis = disrupts membrane  |
| Griseofulvin MOA                      | 54. Accumulates in keratinized layers of the skin = used in dermatomycoses infections  |

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|---------------------------|---|
| Mefloquine                | 55. Anti malarial<br>56. Txt Chloroquine resistant strains = P. falciparum  |
| Chloroquine               | 57. Txt for Malaria when inside RBC   |
| Nifurtimox                | 58. DOC Chagas disease due to Trypanosoma cruzi   |
| Erythromycin              | 59. Used in pts allergic to penicillins   |
| Nystatin                  | 60. Topical txt of superficial mycotic infections = Candidiasis   |
| Acyclovir                 | 61. Guanine analog<br>62. Txt Herpes infections   |
| Imipenem                  | 63. Used w/ Cilastatin<br>64. Can cause seizures  |
| Cefoperazone side effects | 65. Bleeding due to vit K level alterations<br>66. Contraindicated in pts w/ bleeding disorders                             |
| Vancomycin                | 67. Used for MRSS (methicillin resistant Staph. Aureus)<br>68. "Red neck": due to histamine release causes facial flushing  |
| Meropenem                 | 69. used w/ Cilastatin<br>70. Does not cause seizures (cf w/ Imipenem)  |
| Nafcillin                 | 71. Only penicillin that does not need dose adjustment in renal impairment  |
| Peripheral neuropathy     | 72. Seen w/ use of:<br>73. Metronidazole - Isoniazid - Vincristine - ddI - AZT - Allopurinol                                |
| Sulfonamides & newborns   | 74. Kernicterus can occur   |
| "O.N.E." for gonorrhea    | 75. Fluoroquinolones used in a one dose deal for gonorrhea:<br>76. O = Ofloxacin<br>77. N = Norfloxacin<br>78. E = Enoxacin |
| Ribavirin                 | 79. Txt RSV (Respiratory Syncytial Virus)   |

## Anti-Neoplastics

|                        |   |
|------------------------|---|
| Cyclosporine           | 80. Protects against rejections from organ transplants<br>81. Does not induce bone marrow depression  |
| Cyclophosphamide       | 82. Alkylating agent of both purine & pyrimidine bases of DNA<br>83. Txt CLL  |
| Cisplatin's toxicities | 84. Nephro- & Ototoxicity   |
| Methotrexate           | 85. Antimetabolite of folic acid: (-)dihydrofolate reductase  |
| Leucovorin Rescue      | 86. Can block/reduce Methotrexate = ↑ folic acid via a reduced folate   |
| Bleomycin toxicities   | 87. Pneumonitis & pulmonary fibrosis  |
| Azathiorine            | 88. Used in organ transplantation = kidney allografts<br>89. Allopurinol can ↑ its activity by (-) its biotransformation to xanthine oxidase  |
| MOPP                   | 90. Chemotherapy used in the txt of Hodgkin's disease<br>91. M = Mechlorethamine - nitrogen mustard<br>92. O = Oncovin (Vincristine) - prevents microtubule assembly<br>93. P = Procarbazine<br>94. P = Prednisone - glucocorticoid, inducing apoptosis |
| Tamoxifen              | 95. (-) estrogen receptor<br>96. Txt of breast tumors, can see associated endometrial CA  |
| Flutamide              | 97. Antiandrogenic<br>98. Used w/ Leuprolide (LH-RH analog)<br>99. Txt prostatic CA   |
| Megestrol              | 100. (-) progesterone receptor<br>101. Txt endometrial CA   |
| Fluoxymesterone        | 102. Androgenic steroid<br>103. Txt mammary CA in postmenopausal women  |
| Methotrexate           | 104. Folic acid analog that (-) tetrahydrofolate synthesis by (-) dihydrofolate reductase<br>105. Txt of ALL<br>106. Txt of Psoriasis   |
| Brain tumor Txt        | 107. Lomustine<br>108. Carmustine - Causes pulmonary fibrosis   |

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|-------------------|--|
| Streptozocin      | 109. Attaches to $\beta$ cells<br>110. Txt of pancreatic insulinomas |
| Cytarabine (AraC) | 111. Pyrimidine analog<br>112. DOC for AML                           |
| Dactinomycin      | 113. Used for Wilms tumor & rhabdomyosarcoma                         |
| Etoposide         | 114. Used for oat cell CA  |
| Paclitaxel        | 115. Used for ovarian CA   |
| Amifostine        | 116. Can $\downarrow$ nephrotoxicity due to chronic use of Cisplatin |

## Pathology

|  |  |
|--|--|
| Mobitz I                                 | 117. Usually due to inferior MI. Rarely goes into 3 <sup>rd</sup> degree block.<br>118. Txt w/ Atropine or Isoproterenol.  |
| Mobitz II                                | 119. BBB association. Often goes to 3 <sup>rd</sup> degree AV block. Usually due to anterior MI.   |
| P wave                                   | 120. Atrial depol.   |
| a wave                                   | 121. LA contraction  |
| T wave                                   | 122. Ventricular repol.  |
| Wavy fibers                              | 123. Eosinophilic bands of necrotic myocytes. Early sign of MI.  |
| Janeway's lesions                        | 124. Acute bacterial endocarditis.<br>125. Nontender, erythematous lesions of palms & soles.   |
| Osler's nodes                            | 126. Subacute bacterial endocarditis.<br>127. Tender lesions of fingers & toes.  |
| Thiamine defcy                           | 128. Wet Beri Beri heart. Dilated (congested) cardiomyopathy due to chronic alcohol consumption<br>129. Dry Beri Beri = peripheral neuropathy<br>130. Wernicke-Korsakoff = ataxia; confusion; confabulation; memory loss |
| Fibrinous Pericarditis                   | 131. Associated w/ MI: Dressler's  |
| Serous Pericarditis                      | 132. Associated w/ nonbacterial; viral (Coxsackie) infection; immunologic reaction.  |
| Friction Rub                             | 133. Pericarditis association  |
| Hemorrhagic Pericarditis                 | 134. Associated w/ TB or neoplasm  |
| Restrictive Cardiomyopathy               | 135. Aka infiltrative cardiomyopathy that stiffens the heart<br>136. Due to amyloidosis in the elderly<br>137. Due to , also see schaumann & asteroid bodies in young (<25 yoa).   |
| PML's infectious agent                   | 138. JC Virus (Papovavirus = dsDNA, naked icosahedral capsid)  |
| Edema                                    | 139. $\uparrow P_c$ (more seeps out)<br>140. $\downarrow \pi_c$ (less reabsorbed)<br>141. $\uparrow$ permeability<br>142. Block lymphatic drainage   |
| Adult Polycystic Kidney Disease          | 143. Commonly see liver cysts & Berry aneurysms along w/ kidney cysts. Hematuria & HTN also present.<br>144. 3 cysts in ea. Kidney w/ + family history confirms diagnosis  |
| Malignant HTN & Kidneys                  | 145. Petehial hemorrhages are seen on kidney surfaces = Flea-Bitten surface = young black men  |
| Nephritic signs                          | 146. Hematuria; RBC casts; HTN   |
| Nephrotic signs                          | 147. Proteinuria; Hypoalbuminemia; Edema   |
| Podocyte Effacement seen w/              | 148. Minimal Change (Lipoid nephrosis) disease   |
| ASO seen in                              | 149. Acute post-streptococcal GN (due to $\beta$ HGASrtep)<br>150. Anti streptolysin O   |
| Crescentic GN                            | 151. Rapidly progressive GN - nephritic syndrome<br>152. Associated w/ multi system disease or post-strep/post infectious glomerular nephritis   |
| Hereditary Nephritis                     | 153. Alport's syndrome. X linked<br>154. Renal disease w/ deafness & ocualr abnormalities  |
| Membranoproliferative GN                 | 155. Can be secondary to complement deficiency; chronic infections; CLL<br>156. See tram tracking  |
| TypeI Membrano Proliferative GN deposits | 157. C3 & IgG deposits   |
| TypeII Membrano Proliferative            | 158. Only C3 deposits  |

|   |   |
|---|---|
| GN deposits                                 | 159. Aka Dense deposit disease  |
| Focal segmental glomerulosclerosis deposits | 160. IgM & C3 deposits  |
| Cold agglutinins                            | 161. Seen in atypical pneumonia<br>162. It is IgM Ab with specificity for I Ag on adult RBCs  |
| Scrofula                                    | 163. TB in the lymph nodes  |
| Aspirin-Asthma Triad                        | 164. Nasal polyyps - Rhinitis - bronchoconstriction   |
| Ferruginous bodies                          | 165. Hemosiderin (pigment w/ $Fe^{3+}$ ) covered macrophages that have been phagocytised  |
| Pancoast's tumor causes                     | 166. Ulnar nerve pain & Horner's syndrome   |
| Fatty degeneration                          | 167. Made up primarily of triglycerides<br>168. Most commonly due to alcoholism which commonly leads to hepatic cirrhosis<br>169. Associated w/ $CCl_4$   |
| Cloudy swelling                             | 170. Failure of cellular Na pump<br>171. Seen in Fatty degeneration of the liver and in Hydropic (Vacuolar) degeneration of the liver   |
| Hydropic degeneration                       | 172. Severe form of cloudy swelling<br>173. Seen with hypokalemia induced by vomiting/diarrhea  |
| Liquefaction necrosis                       | 174. Rapid enzymatic break down of lipids<br>175. Seen commonly in Brain & Spinal cord (CNS) injuries<br>176. Seen in suppurative infections = pus formation  |
| Coagulation necrosis                        | 177. Result of sudden ischemia<br>178. Seen in organs w/ end arteries limited collateral circulation) = heart, lung, kidney, spleen   |
| Caseation necrosis                          | 179. Combination of both coagulation & liquefaction necrosis<br>180. Seen w/ M. tuberculosis & Histoplasma capsulatum infection   |
| Fibrinoid necrosis                          | 181. Seen in the walls of small arteries<br>182. Associated w/ malignant hypertension, polyarteritis nodosa, immune mediated vasculitis   |
| Fat necrosis                                | 183. Result of lipase actions liberated from pancreatic enzymes<br>184. Seen w/ Acute pancreatitis = saponification results   |
| Hemoptysis                                  | 185. Blood in sputum  |
| Pulmonary embolism                          | 186. Most commonly thrombus from lower extremity vein   |
| Phlebothrombosis                            | 187. From a vein of lower extremities, of a pregnant uterus, in Congestive heart failure, bed ridden pt,<br>188. As a complication in a pt w/ Pancreatic CA due to $\uparrow$ d blood coagulability   |
| Saddle embolus                              | 189. Embolus lodged in bifurcation of pulmonary trunks<br>190. $\uparrow\uparrow$ RV strain = RV & RA dilate = Acute cor Pulmonale  |
| Paradoxical embolism                        | 191. Right to Left shunt allows a venous embolism to enter arterial circulation<br>192. Patent ovale foramen or Atrial septal defect  |
| Tuberculoid granuloma                       | 193. Collection of macrophages w/o caseation<br>194. Seen w/ Sarcoidosis (non-caseating); Syphilis; Brucellosis and Leprotic infections   |
| Cellulitis                                  | 195. Spreading infection due to streptococcus   |
| PSA   | 196. Prostate Specific Antigen = elevated in prostatic CA   |
| $\uparrow\uparrow$ 5-HT                     | 197. In cases of metastatic carcinoid, txt w/ Methysergide (5HT antagonist)   |
| $\uparrow$ $\alpha$ Feto Protein            | 198. Hepatocarcinoma<br>199. Neural tube defects  |
| CEA   | 200. Carcinoembryonic Antigen = elevated in Colon CA  |
| Chromosome 13                               | 201. Retinoblastoma   |
| Chromosome 11p                              | 202. Wilms tumor of the kidney  |
| Vinyl Chloride                              | 203. Associated w/ Angiosarcoma of the liver  |
| Agent Orange                                | 204. Contains dioxin<br>205. Implicated as a cause of Hodgkin's disease, non-Hodgkin's lymphoma & soft tissue sarcomas  |
| Parasites & CA                              | 206. Schistosoma haematobium = Urinary bladder CA<br>207. S. mansoni = Colon CA<br>208. Aspergillus flavus = potent hepatocarcinogen  |
| Ochronosis                                  | 209. Alkaptonuria<br>210. Error in tyrosine metabolism due to Homogentisic acid (oxidizes tyrosine)<br>211. Involving intervertebral disks = Ankylosing Spondilitis = Poker spine<br>212. See dark urine; dark coloration of sclera, tendons, cartilage |

|                                 |   |
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| Lead poisoning                  | 213. Acid fast inclusion bodies<br>214. ↑ urinary coproporphyrin<br>215. Anemia: microcytic/ hypochromic<br>216. Stippling of the basophils<br>217. Gingival line & lead line in bones: x-ray<br>218. Mental retardation  |
| Heroin OD, clinically           | 219. Massive pulmonary edema w/ frothy fluid from the nostrils  |
| Fetal alcohol syndrome          | 220. Small head, small eyes, funnel chest, ASD, mental deficiency, and hirsutism  |
| Atypical mycobacterium          | 221. <i>M. kansasii</i> & <i>M. avium intracellulare</i>  |
| Cold abscesses                  | 222. Liquefied TB lesions similar to pyogenic abscesses but lacking acute inflammation  |
| Actinomyces israelii            | 223. Farmers infection<br>224. Lumpy jaw (from chewing grain) & PID (IUD), but most common is due to saprophytic  |
| Congenital Syphilis             | 225. Saddle nose, Saber shin, Hutchinson's teeth, nerve deafness, interstitial keratitis  |
| Warthin-Finkeldey cells         | 226. Reticuloendothelial giant cells on tonsils, lymph nodes, spleen<br>227. Seen with Rubeola (measles) due to paramyxovirus   |
| Diphyllobothrium latum          | 228. Tapeworm infection causing megaloblastic anemia by consuming large amount of vit B12 in the host   |
| Subacute Bacterial Endocarditis | 229. α Hemolytic Streptococci ( <i>S. viridans</i> ) = usually in pt w/ pre-existing heart problem  |
| Acute Bacterial Endocarditis    | 230. Staph aureus, β Hemolytic Streptococci, <i>E. coli</i><br>231. Common among drug addicts & diabetics   |
| Mitral Insufficiency            | 232. Ruptured papillary muscle  |
| Left Anterior Descending branch | 233. Branch of the Left Coronary artery<br>234. Highest frequency of thrombotic occlusion<br>235. MI = anterior wall of the LV, especially in apical part of interventricular septum  |
| Left Circumflex branch          | 236. Branch of the Left Coronary artery<br>237. Occlusion = MI of posterior/lateral wall of the LV  |
| Dissecting Aneurysm             | 238. False aneurysm: it is splitting of the media of the aorta<br>239. Usually accompanied w/ long history of severe hypertension, also seen w/ familial hyperlipidemia, atherosclerotic disease, Marfan's Collagen disease<br>240. Zones of medial necrosis +/- slitlike cysts = Medial Cystic Necrosis of Erdheim |
| Cor Pulmonale                   | 241. Right ventricular strain, associated w/ right ventricular hypertrophy  |
| Acute Cor Pulmonale             | 242. Sudden right ventricular strain due to a massive pulmonary embolism  |
| Bronchopneumonia                | 243. Lobular (rather than lobar)<br>244. Due to Staph aureus; <i>Pseudomonas aeruginosa</i> ; <i>Klebsiella</i> ; <i>E. coli</i><br>245. Abscess formation is common  |
| Lobar pneumonia                 | 246. Due to Strep. Pneumoniae infection (5% due to <i>Klebsiella</i> )<br>247. Red Hepatization: days 1-3 of the pneumonia<br>248. Gray Hepatization: days 3-8 of untreated pneumonia<br>249. Complications: pleural effusion; atelectasia; fibrinous pleuritis; empyema; fibrinous pericarditis; otitis media      |
| Bronchiectasis                  | 250. Permanent dilatation of the bronchi - predisposed by chronic sinusitis and post nasal drip<br>251. Suppuration associated<br>252. Lower lobe > than upper lobe involvement   |
| Cold Agglutinins                | 253. Found w/ <i>Mycoplasma pneumoniae</i>  |
| Panlobular Emphysema            | 254. α1 - antitrypsin deficiency, causing elastase ↑ = ↑ compliance in the lung   |
| Bulla                           | 255. Associated w/ Emphysema = "Bleb" = outpouching - If it ruptures causes Pneumothorax  |
| Farmer's Lung                   | 256. Due to <i>Micropolyspora faeni</i> (thermophilic actinomycetes)  |
| Bagassosis                      | 257. Due to <i>M. vulgaris</i> (actinomycetes)<br>258. Inhalation of sugar cane dust  |
| Silo-Filler's Lung              | 259. Due to Nitrogen dioxide from nitrates in corn  |
| G6PDH Deficiency                | 260. Sex-linked chronic hemolytic anemia w/o challenge or after eating fava beans<br>261. Heinz Bodies appear in RBCs   |
| HbF ↑↑                          | 262. Sickle Cell Anemia   |
| Multiple Myeloma                | 263. Lytic lesions of flat bones ("salt & pepper lesions") = vertebrae, ribs, skull; Hypercalcemia; Bence-Jones protein casts   |
| Hodgkin's Disease               | 264. Malignant neoplasm of the lymph nodes causing pruritis; fever = looks like an acute infection<br>265. Reed Sternberg cells   |

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| Polyarteritis Nodosa              | 266. Immune complex disease of Ag-Ab complexes on blood vessel wall<br>267. Half of the immune complexes have Hepatitis B Ag<br>268. Can see fever; abd.pain; ↓ wt; HTN; muscle aches   |
| Sprue                             | 269. Celiac disease due to a gluten-induced enteropathy = small intestine villi are blunted<br>270. High titers of anti-gliadin Abs & ↑ IgA levels  |
| Regional Enteritis                | 271. Crohn's Disease<br>272. Association w/ Arthritis; Uveitis; Erythema Nodosum  |
| Whipple's Disease                 | 273. Intestinal Lipodystrophy = malabsorption syndrome  |
| Kulchitsky cells                  | 274. Neural crest cells from which carcinoids arise = of the Bronchi; GIT; Pancreas   |
| Ulcerative Colitis                | 275. Inflammatory disease of the colon w/ ↑ colon CA incidence<br>276. Crypt abscess in the crypts of Lieberkuhn<br>277. Pseudopolyps when ulcers are deep<br>278. Not transmural involvement                                 |
| Vaginal Adenosis                  | 279. Women exposed to DES (Diethylstilbesterol) in utero before the 18 <sup>th</sup> week of pregnancy<br>280. Some develop clear cell adenocarcinoma of the vagina & cervix  |
| Scirrhus Carcinoma                | 281. Infiltrating Duct Carcinoma w/ fibrosis - most common type of breast carcinoma   |
| Hofbauer Cells                    | 282. Lipid laden macrophages seen in villi of Erythroblastosis Fetalis  |
| Retinopathy of Prematurity        | 283. Retrolental Fibroplasia = cause of blindness in premies due to high O <sub>2</sub> concentrations  |
| IgA deficiency                    | 284. Pt has recurrent infections & diarrhea w/ ↑ respiratory tract allergy & autoimmune diseases<br>285. If given blood w/ IgA = develop severe, fatal anaphylaxis reaction   |
| Primary Sjogren's                 | 286. Dry eyes & dry mouth, arthritis. ↑ risk for B cell lymphoma. HLA-DR3 frequent. Autoimmune disease.   |
| Secondary Sjogren's               | 287. Rheumatoid arthritis, SLE, or systemic sclerosis association<br>288. RA association shows HLA-DR4  |
| LDH1 & LDH2                       | 289. Myocardium. LDH1 higher than LDH2 = Myocardial Infarction  |
| LDH3                              | 290. Lung tissue  |
| LDH4 & LDH5                       | 291. Liver cells  |
| Keratomalacia                     | 292. Severe Vit A deficiency. See Bitot's spots in the eyes = gray plaques = thickened, keratinized ET  |
| Metabisfite Test                  | 293. Suspending RBCs in a low O <sub>2</sub> content solution<br>294. Can detect Hemoglobin S, which sickles in low O <sub>2</sub>  |
| Microangiopathic Hemolytic Anemia | 295. Can be due to Hemolytic Uremic Syndrome & Thrombotic Thrombocytopenic Purpura (TTP)<br>296. See Helmet cells   |
| Wright's stain                    | 297. Stain for Burkitt's lymphoma   |
| Mononucleosis                     | 298. Due to EBV infection<br>299. If Mono is treated w/ Ampicillin, thinking that it is a strep pharyngitis, a rash will occur.   |
| T(8;14)                           | 300. Burkitt's lymphoma = c-myc oncogene overexpression   |
| T(9;22)                           | 301. CML = c-abl/bcr gene formation = Philadelphia translocation  |
| Langerhan Cell Histiocytosis      | 302. Letter Siwe syndrome; Hand Schuller Christian Disease; Eosinophilic Granuloma<br>303. Birbeck granules are present = tennis racket shape   |
| Myeloid Metaplasia                | 304. Alkaline phosphatase ↑/normal compare to CML = low to absent<br>305. Anemia; splenomegaly; platelets > 1 million = extensive extra-medullary hematopoiesis   |
| Multiple Myeloma                  | 306. Weakness; wt. loss; recurrent infection; proteinuria; anemia; ↑ proliferation of plasma cells in BM = plasma cell dx<br>307. Serum M protein spike - most often of IgG or IgA<br>308. Hypercalcemia (↑ bone destruction) |
| T(14;18)                          | 309. NHL Lymphoma = bcl2 proto-oncogene overexpression seen w/ <i>Small Cleaved Cell (Follicular) Lymphoma</i>  |
| Focal Segmental GN exs            | 310. IgA Focal GN = Berger's disease; SLE; PAN; Schonlein-Henoch purpura (anaphylactoid purpura)  |
| Nephrotic Syndrome exs            | 311. Focal (Segmental) GN; Membranous GN; Lipoid (Minimal Change) GN; Membranoproliferative GN; Hep B; Syphilis; Penicillamine  |
| Schistosoma Haematobium           | 312. Infection is associated w/ Squamous cell CA of the Bladder (most common Bladder CA is transitional cell type)<br>313. Associated w/ portal HTN due to intrahepatic obstruction   |
| Penicillin Resistant PID          | 314. PID is usually due to N. Gonorrhoeae, but if unresponsive to penicillin think of Bacteroides species   |

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| Duret Hemorrhages           | 315. Severe ↑ in ICP w/ downward displacement of cerebellar tonsils into Foramen Magnum causing a compression on the brainstem w/ hemorrhaging into the pons & midbrain<br>316. Nearly always associated w/ death due to damage to the vital centers in these areas  |
| Hypertensive Hemorrhage     | 317. Predilection for lenticulostriate arteries = putamen & internal capsule hemorrhages   |
| Cerebral Embolism from      | 318. MI w/ Mural Thrombi; Atrial Fib Thrombi = Marantic thrombi; L-sided Bacterial Endocarditis; Paradoxical Embolism of septal defect   |
| Neurosyphilis               | 319. Tabes Dorsalis = ↓ joint position sensation, ↓ pain sensation, ataxia, Argyll Robertson pupils<br>320. Syphilitic meningitis<br>321. Paralytic neurosyphilis  |
| 5p-                         | 322. Cri di Chat: mental retardation; small head; wide set eyes; low set ears; cat-like cry  |
| Trisomy 13                  | 323. Patau's: small head & eyes; cleft lip & palate; many fingers  |
| Acute Cold Agglutination    | 324. Abs to I blood group Ag. Mediated by IgM Abs<br>325. Complication of EBV or Mycoplasma pneumoniae infections  |
| Chronic Cold Agglutination  | 326. Associated w/ lymphoid neoplasms. See agglutination & hemolysis in tissue exposed to cold. IgM Abs  |
| RBC Osmotic Fragility       | 327. Hereditary Spherocytosis  |
| Non-Hodgkin's Lymphomas     | 328. Small Lymphocytic: low grade B cell lymphoma of the elderly. Related to CLL.<br>329. Small Cleaved cell (Follicular): low grade B cell lymphoma of the elderly. T(14;18) bcl-2 oncogene<br>330. Large Cell<br>331. Lymphoblastic: high grade T cell lymphoma of kids progressing to T-ALL<br>332. <b>Small Non Cleaved</b> = Burkitt's: high grade B cell lymphoma. EBV infection. <i>Starry sky</i> histo appearance. T(8;14) c-myc proto-oncogene. Related to B-ALL |
| Singer's Nodules            | 333. Benign laryngeal polyps associated w/ smoking & overuse of the voice  |
| Paraseptal emphysema        | 334. Associated w/ blebs (large subpleural bullae) that can rupture and cause pneumothorax   |
| Superior Vena Cava Syndrome | 335. Obstructed due to bronchogenic carcinoma. Causing swollen face & cyanosis.  |
| Betel nuts                  | 336. Associated to oral cancer.  |
| Fundal (Type A) Gastritis   | 337. Antibodies to parietal cells; pernicious anemia; autoimmune diseases  |
| Antral (Type B) Gastritis   | 338. Associated w/ Helicobacter (Campylobacter) pylori infection. 90% of duodenal ulcer  |
| Primary Biliary Cirrhosis   | 339. Autoimmune origin; middle aged women; anti-mitochondrial Abs<br>340. Jaundice; itching; hypercholesterolemia (can see cutaneous xanthomas)  |
| Acute Pancreatitis          | 341. ↑ pancreatic enzymes = fat necrosis; saponification = hypocalcemia; ↑ serum amylase<br>342. Severe epigastric ab pain; prostration; radiation to the back   |
| Radiating Back Pain         | 343. Chronic pancreatitis  |
| Complete Hydatidiform Mole  | 344. No embryo. Paternal derivation only. 46XX   |
| Partial Hydatidiform Mole   | 345. Embryo. 2 or more sperms fertilized 1 ovum: triploidy/tetraploidy occurs  |
| Cold Nodules                | 346. Hypoplastic Goiter nodules that do not take up radio active iodine. [Opposite: hot & do take up iodine]   |
| Acidophils                  | 347. Mammotrophs = Prolactin<br>348. Somatotrophs = GH   |
| Basophils                   | 349. Thyrotrophs = TSH<br>350. Gonadotrophs = LH<br>351. Corticotrophs = ACTH & FSH  |
| Lacunar Strokes             | 352. Small/focal aa occlusions. Purely motor or sensory.<br>353. Sensory: lesion of thalamus<br>354. Motor: lesion of internal capsule   |
| CSF of Bacterial Meningitis | 355. ↓ Glucose; ↑ Protein; ↑ Neutrophils; ↑ Pressure   |
| CSF of Viral Meningitis     | 356. Normal Glucose; +/- ↑ Protein; ↑ Lymphocytes  |
| Marble Bone Disease         | 357. Osteoporosis: Albers-Schonberd Disease = inspite of ↑d bone density, many fractures = ↓ osteoclasts   |
| C5a                         | 358. Involved in Chemotaxis (for Neutrophils)  |
| C3b                         | 359. Involved in Opsonization (& IgG)  |
| Anaphylotoxins              | 360. C3a & C5a (mediate Histamine release from Basophils & Mast cells)   |
| Vasoactive Mediators        | 361. <u>Vasoconstriction</u> : TxA <sub>2</sub> ; LTC <sub>4</sub> ; LTD <sub>4</sub> ; LTE <sub>4</sub> ; <b>PAF</b><br>362. <u>Vasodilation</u> : PGI <sub>2</sub> ; PGD <sub>2</sub> ; PGE <sub>2</sub> ; PGF <sub>2α</sub> ; Bradykinin; <b>PAF</b><br>363. <u>↑d Vascular Permeability</u> : Hist.; 5HT; PGD <sub>2</sub> ; PGE <sub>2</sub> ; PGF <sub>2α</sub> ; LTC <sub>4</sub> ; LTD <sub>4</sub> ; LTE <sub>4</sub> ; Bradykinin; <b>PAF</b>                    |



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|-----------------------------------|---|
| Platelet Aggregation              | 364. ADP; Thrombin; TxA <sub>2</sub> ; collagen; Epinephrine; PAF   |
| Platelet Antagonist               | 365. Prostacyclin (PGI <sub>2</sub> )   |
| Intrinsic Pathway                 | 366. F XII (Hagman): APTT   |
| Extrinsic Pathway                 | 367. F VII: PT  |
| Lines of Zahn                     | 368. Arterial thrombi = pale red colored (dark red is venous thrombi)   |
| Currant Jelly appearance          | 369. Post mortem clots  |
| Emigration: Chemotaxis            | 370. Margination<br>371. Pavementing<br>372. Adhesion<br>373. Chemotaxis<br>374. Phagocytosis<br>375. Intracellular microbial killing   |
| Transudate                        | 376. Specific gravity < 1.012 - low protein   |
| Exudate                           | 377. Specific gravity > 1.020 - high protein  |
| Hurler's                          | 378. Lysosomal storage disease $\alpha$ L Iduronidase - Heparan/Dermatan Sulfate accumulation   |
| Galactosemia                      | 379. Deficiency of Galactose 1 Phosphate Uridyl Transferase. $\uparrow$ Galactose 1 Phosphate   |
| Phenylketonuria                   | 380. Deficiency: Phenylalanine Hydroxylase. $\uparrow$ Phenylalanine & degradation products<br>381. Mousy body odor   |
| Autosomal Dominant Diseases       | 382. Adult Poly Cystic Kidney Disease<br>383. Familial Hypercholesterolemia Disease<br>384. Hereditary Hemorrhagic Telangiectasia (Osler-Weber-Rendu)<br>385. Hereditary Spherocytosis<br>386. Huntington's Disease (chromosome 4p)<br>387. Marfan's Syndrome<br>388. Neurofibromatosis (von Recklinghausen's)<br>389. Tuberous Sclerosis<br>390. Von Hippel Lindau Disease   |
| Autosomal Recessive Diseases      | 391. Tay-Sachs<br>392. Gaucher's<br>393. Niemann-Pick<br>394. Hurler's<br>395. Von Gierke's<br>396. Pompe's<br>397. Cori's<br>398. McArdle's<br>399. Galactosemia<br>400. PKU<br>401. Alcaptonuria  |
| X Linked Recessive Diseases       | 402. Hunter's Syndrome (L-Iduronosulfate Sulfatase deficiency, $\uparrow$ Heparan/Dermatan Sulfate)<br>403. Fabry's Disease ( $\alpha$ Galactosidase A deficiency, $\uparrow$ Ceramide Trihexoside)<br>404. Classic Hemophilia A (Factor VIII deficiency, F8 Gene on X chromosome is bad, $\uparrow$ Ceramide Trihexoside)<br>405. Lisch-Nyhan Syndrome (HGPRT deficiency, $\uparrow$ Uric acid)<br>406. G6Phosphatase deficiency (G6PDH deficiency, $\uparrow$ Ceramide trihexoside)<br>407. Duchenne's Muscular Dystrophy (Dystrophin deficiency, $\uparrow$ Ceramide Trihexoside)  |
| Hypersensitivity Reactions "ACID" | 408. <b>Type I</b> (Anaphylactic): IgE mediated. Exs: Hay Fever; Allergic asthma; Hives<br>409. <b>Type II</b> (Cytotoxic): Warm Ab autoimmune hemolytic anemia; hemolytic transfusion reactions; Erythroblastosis Fetalis; Grave's Disease; Goodpastures<br>410. <b>Type III</b> (Immune Complex): Insoluble complement bound aggregates of Ag-Ab complexes. Exs: Serum sickness; Arthus Reaction; Polyarteritis Nodosa; SLE; Immune Complex Mediated Glomerular Disease<br>411. <b>Type IV</b> (Delayed = Cell mediated immunity): Delayed hypersensitivity. Involves memory cells. Exs: Tuberculin reaction; Contact dermatitis; Tumor cell killing; Virally infected cell killing |
| Transplant Rejections             | 412. Hyperacute Rejection = occurs w/in minutes of transplant. Ab mediated.<br>413. Acute Rejection = occurs w/in days to months of transplant. Lymphocytes & macrophages. Only rejection type that can be treated w/ therapy.<br>414. Chronic Rejection = occurs months to years of transplant. Ab mediates vascular damage.   |
| Blood Metastasis                  | 415. Sarcoma, exception - renal cell CA: early venous invasion  |
| Lymph Metastasis                  | 416. Carcinoma, exception - renal cell CA: early venous invasion  |

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| Aflatoxin                      | 417. Seen w/ Aspergillus. ↑ risk for Hepatocellular CA   |
| Cleft Lip                      | 418. Incomplete fusion of maxillary prominence w/ median nasal prominence  |
| Cleft Palate                   | 419. Incomplete fusion of lateral palatine process w/ each other & median nasal prominence & medial palatine prominence                          |
| Craniopharyngioma              | 420. Pituitary tumor - usually calcified   |
| Lateral Geniculate Nucleus     | Involved in Vision relay   |
| Medial Geniculate Body         | Involved in Hearing relay  |
| Lung Development               | Glandular: 5-17 fetal weeks<br>Canalicular 13-25 fetal weeks<br>Terminal Sac 24 weeks to birth<br>Alveolar period birth-8yoa                     |
| Heart's 1 <sup>st</sup> Beat   | 21-22 days   |
| Foregut                        | Mouth → Common Bile Duct - supplied by Celiac Artery   |
| Midgut                         | Duodenum, just below Common Bile Duct → Splenic flexure of the Colon supplied by Superior Mesenteric artery                                      |
| Hindgut                        | Splenic Flexure → Butt crack → supplied by Inferior Mesenteric Artery  |
| Hypnagogic Hallucinations      | Narcolepsy   |
| Type I Error                   | $\alpha$ : "Convicting the innocent" - accepting experimental hypothesis/rejecting null hypothesis   |
| Subdural Hematoma              | Ruptured cerebral bridging veins   |
| Epidural Hematoma              | Ruptured middle meningeal artery "intervals of lucidness", 2 <sup>ry</sup> to Temporal bone fracture   |
| Type II Error                  | $\beta$ : "Setting the guilty free" - fail to reject the null hypothesis when it was false   |
| Power                          | 1 - $\beta$  |
| Sensitivity                    | TP/TP + FN   |
| Specificity                    | TN/TN + FP   |
| Positive Predictive Value      | TP/TP + FP   |
| Negative Predictive Value      | TN/TN + FN   |
| Odds Ratio                     | ad/bc  |
| d-Dimers                       | DIC  |
| Delusion                       | Disorder of thought content  |
| Loose Association              | Skip from topic to topic   |
| 5 Stages of Death              | Denial - Anger - Bargaining - Depression - Acceptance  |
| 1 <sup>st</sup> Branchial Arch | Meckel's cartilage - gives rise to incus/malleus bones of ear  |
| 2 <sup>nd</sup> Branchial Arch | Reichert's cartilage - gives rise to stapes bone of ear  |
| Median nerve lesion            | No pronation   |
| Radial nerve lesion            | Wrist drop - seen w/ humerus fracture  |
| Common peroneal lesion         | Foot drop. No dorsiflexion or eversion of the foot   |
| Direct inguinal hernia         | Goes through superficial inguinal ring.<br>Medial to inferior epigastric artery<br>Seen in older men   |
| Indirect inguinal hernia       | Goes through deep & superficial inguinal ring<br>Lateral to inferior epigastric artery<br>Seen in young boys - processus vaginalis did not close |
| @ Diaphragm T8, T10, T12       | T8 = Inferior vena cava<br>T10 = Esophagus/ Vagus<br>T12 = Aorta/ Thoracic duct/ Azygous vein  |
| Hemiballism                    | Wild flailing of 1 arm. Lesion of the sub thalamic nucleus   |
| O Linked Oligosaccharide       | In the Golgi   |
| N Linked Oligosaccharide       | In the RER   |
| MLF Syndrome                   | Internuclear Ophthalmoplegia: medial rectus palsy on lateral gaze; Nystagmus on abducting eye.<br>Seen w/ MS                                     |
| ADA Deficiency                 | SCID   |
| Raphe Nucleus                  | Initiation of sleep via 5HT predominance   |

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|--------------------------------------|---|
| $\beta$ waves                        | Alert; Awake; Active mind - also seen in REM, therefore we say "paradoxical sleep"  |
| Irreversible Glycolysis Enzymes      | Hexokinase<br>PhosphoFructo Kinase = Rate Limiting Step<br>Pyruvate Kinase<br>Pyruvate Dehydrogenase  |
| Irreversible Gluconeogenesis Enzymes | PyruvateCarboxy Kinase<br>PEPCarboxyKinase<br>Fructose 1,6 BiPhosphatase<br>Glucose 6 Phosphatase<br>**muscle dose not take part in Gluconeogenesis, only takes place in the liver, kidney & GI epithelium  |
| Pellagra                             | Diarrhea, Dermatitis, Dementia<br>Niacin Deficiency (Vit B3 deficiency)<br>Hartnup's Disease<br>Malignant Carcinoid Syndrome<br>INH use   |
| TLCFN                                | Needed as co-factor for Pyruvate DH complex & $\alpha$ Ketoglutarate DH complex   |
| LCAT or PCAT                         | Esterification of cholesterol: lecithin cholesterol acetyltransferase<br>Lecithin = Phosphatidylcholine, therefore phosphotidylcholine acetyltransferase  |
| HMGCoA Reductase                     | Rate limiting step in cholesterol synthesis<br>Changes HMGCoA $\rightarrow$ Mevalonate<br>(-) by Lovastatin   |
| Ketogenic amino acids                | Leucine & Lysine  |
| Glucogenic amino acids               | Methionine, Threonine, Valine, Arginine, Histadine  |
| Keto & Gluco amino acids             | Phenylalanine, Tryptophan, Isoleucine   |
| Carnitine Shuttle                    | Feeds FA into the mitochondria for their consumption  |
| Cori Cycle                           | Keeps muscles working anaerobically.<br>Transfers lactate to the liver to make glucose which is sent back into the muscles for energy use   |
| (-) Na <sup>+</sup> Pump (ATPase)    | Ouabain [(-) K <sup>+</sup> pump]<br>Vanadate [(-) phosphorylation]<br>Digoxin [ $\uparrow$ heart contractility]  |
| TCA Cycle Products                   | "Citric Acid Is Krebs Starting Substrate For Mitochondrial Oxidation"<br>Citrate $\rightarrow$ Aconitate $\rightarrow$ Isocitrate $\rightarrow$ $\alpha$ Ketoglutarate $\rightarrow$ Succinyl $\rightarrow$ Succinate $\rightarrow$ Fumarate $\rightarrow$ Malate $\rightarrow$ OAA |
| Cones                                | Color vision. Contain Iodopsin = Red-Blue-Green specific pigment. For acuity.   |
| Rods                                 | Contain Rhodopsin pigment. High sensitivity. Concentrated in the fovea. Night vision.   |
| Gastrula                             | Seen @ 3 <sup>rd</sup> week: Ecto, Meso & Endo  |
| Epiblast                             | @ 2 <sup>nd</sup> week: forms the primitive streak, from which Meso & Endo come from. Directly gives rise to Ecto.  |
| Sydenham's Chorea                    | Post streptococcal infection. Necrotizing arteritis of the caudate, putamen, thalamus   |
| (+) Frei Test                        | Chlamydia trachomatis types L1, L2, L3 = Lymphogranuloma venereum   |
| Sabouraud's Agar                     | Culture for all Fungi ie...Culture Cryptococcus neofromans which is found in pigeon droppings   |
| FMR1 Gene Defect                     | Fragile X Syndrome: macro-orchidism; long face; large jaw; large everted ears; autism, mental retardation   |
| Barr Body                            | Present in Klinefelters: Male: XXY<br>Not present in Turner's: Female: XO   |
| Aortic Insufficiency Signs           | Traube Sign = Pistol shot sound over the femoral vessels<br>Corrigan pulse = water hammer pulse over coratid artery = aortic regurgitation  |
| Scleroderma : "CREST"                | Calcinosis; Raynauds; Esophageal; Sclerodactyl; Telangiectasis  |
| Cretinism                            | Sporadic: bad T4 phosphorylation or developmental failure of thyroid formation<br>Endemic: no Iodine in diet: protruding belly & belly button   |
| Hemochromatosis Triad                | Micronodular pigment cirrhosis; Bronze Diabetes; Skin pigmentation = due to $\uparrow$ Fe <sup>3+</sup> deposition  |

# Signature Drug Toxicities

|                                     |  |
|-------------------------------------|--|
| Agranulocytosis                     | 421. Clozapine, Chloramphenicol  |
| Aplastic Anemia                     | 422. Chloramphenicol<br>423. NSAIDs<br>424. Benzene  |
| Atropine-like Side Effects          | 425. Tricyclics  |
| Cardiotoxicity                      | 426. Doxorubicin<br>427. Daunorubicin  |
| Cartilage Damage in Children        | 428. Fluoroquinolones (Ciprofloxacin & Norfloxacin)  |
| Cinchonism                          | 429. Quinidine   |
| Cough                               | 430. ACE Inhibitors  |
| Nephrogenic Diabetes Insipidus      | 431. Lithium (T <sub>xt</sub> w/ Amiloride)  |
| Disulfiram-like Effect              | 432. Metronidazole<br>433. Sulfonylureas (1 <sup>st</sup> generation)  |
| Extrapyramidal Side Effects         | 434. Antipsychotics (Thioridazine, Haloperidol, Chlorpromazine)  |
| Fanconi's Syndrome                  | 435. Tetracycline  |
| Fatal Hepatotoxicity (necrosis)     | 436. Valproic Acid<br>437. Halothane<br>438. Acetaminophen   |
| Gingival Hyperplasia                | 439. Phenytoin   |
| Gray Baby Syndrome                  | 440. Chloramphenicol   |
| Gynecomastia                        | 441. Cimetidine<br>442. Azoles<br>443. Spironolactone<br>444. Digitalis  |
| Hemolytic Anemia in G6PD-deficiency | 445. Sulfonamides<br>446. Isoniazid<br>447. Aspirin<br>448. Ibuprofen<br>449. Primaquine   |
| Hepatitis                           | 450. Isoniazid   |
| Hot Flashes, Flushing               | 451. Niacin<br>452. Tamoxifen<br>453. Ca <sup>++</sup> Channel Blockers  |
| Induce CP450                        | 454. Barbiturates - Phenobarbital<br>455. Phenytoin<br>456. Carbamazepine<br>457. Rifampin   |
| Inhibit CP450                       | 458. Cimetidine<br>459. Ketoconazole   |
| Interstitial Nephritis              | 460. Methicillin<br>461. NSAIDs (except Aspirin)<br>462. Furosemide<br>463. Sulfonamides   |
| Monday Disease                      | 464. Nitroglycerin Industrial exposure → tolerance during week → loss of tolerance during weekend → headache, -<br>ach, dizziness upon re-exposure |
| Orange Body Fluids                  | 465. Rifampin  |
| Osteoporosis                        | 466. Heparin<br>467. Corticosteroids   |
| Positive Coombs' Test               | 468. Methyldopa  |
| Pulmonary Fibrosis                  | 469. Bleomycin<br>470. Amiodarone  |
| Red Man Syndrome                    | 471. Vancomycin  |
| Severe HTN with Tyramine            | 472. MAOIs   |

|                    |  |
|--------------------|--|
| SLE-like Syndrome  | 473. Procainamide<br>474. Hydralazine<br>475. INH  |
| Tardive Dyskinesia | 476. Antipsychotics (Thioridazine, Haloperidol, Chlorpromazine) Clozapine: only antipsychotic to not give you tardive dyskinesia |
| Tinnitus           | 478. Aspirin<br>479. Quinidine   |

## Microbiology

|   |  |
|---|--|
| Lactose formers                                 | 1. "CEEK"<br>2. Citrobacter<br>3. Enterobacter<br>4. E.Coli (K1 capsule most important)<br>5. Klebsiella   |
| Non lactose formers                             | 6. "SHYPS"<br>7. Shigella<br>8. Yersinia enterocolitica (AKA Pestis)<br>9. Proteus<br>10. Salmonella   |
| May lack color                                  | 11. "These rascals may microscopically lack color":<br>12. Treponema<br>13. Ricksetta<br>14. Mycobacterium<br>15. Mycoplasma<br>16. Legionella<br>17. Chlamydia  |
| ↑ cAMP  | 18. "CAPE"<br>19. Cholera<br>20. Anthracis (Poly D glutamate capsule)<br>21. Pertusis (via Gi)<br>22. E.coli (LT enterotoxin)  |
| Have Capsules [ie... are Quellung Reaction (+)] | 23. "Some killers have pretty nice capsules"<br>24. Strep. Pneumoniae<br>25. Klebsiella<br>26. HiB<br>27. Pseudamona Aeroginosa<br>28. Neisseria meningitis<br>29. Cryptococcus neoformans (only encapsulated fungal pathogen) |
| Dimorphic Fungi                                 | 30. "Can Also Have Both Shapes"<br>31. Cocciodes<br>32. Aspergillus<br>33. Histolpasma<br>34. Blastomyces<br>35. Sprothrix schenkii  |
| Have β Prophage                                 | 36. "OBED"<br>37. O = Salmonella<br>38. B = Botulinum<br>39. E = Erythrogeic strep<br>40. D = Diphtheria   |
| Spore Forming Bacteria                          | 41. Bacillus & Clostridium (have calcium di-picolinate)  |
| IgA Proteases                                   | 42. Neisseria, Haemophilus, S. pneumoniae  |
| Widal Test                                      | 43. Salmonella (Salmonella begins in the ileocecal region) agglutination indicates Abs to O, H, Vi Salmunella Ags  |
| Wayson's Stain                                  | 44. Yersinia   |
| Pneumonic Plaque Transmission                   | 45. Person to person cf w/ Bubonic plaque that was via infected flea   |
| Splenectomy                                     | 46. Predisposes to septicemia  |
| Invasins  | 47. Yersinia pseudotuberculosis  |
| Fusiform  | 48. Vincent's trench mouth   |

Motile: make H2S

Non Motile: noH2S

|                                      |  |
|--------------------------------------|--|
| S. viridans                          | 49. Dextran mediated adherence   |
| Obligate Aerobes                     | 50. Pseudomonas & Mycobacterium  |
| Obligate Anaerobes                   | 51. Clostridium, Actinomyces, Bacteroides  |
| Staph aureus                         | 52. A Protein, Catalase +/- Coagulase +  |
| Spirochetes                          | 53. Treponema, Borrelia, Leptospira  |
| Non Motile Gram (+) Rods             | 54. Corynebacterium D & Nocardia   |
| Acid Fast Organisms                  | 55. Mycobacterium; Cryptosporidium; Nocardia (partially); Legionella micdadei; Isospora  |
| Pigment Producing Bacteria           | 56. Serratia - red (can cause pseudohepoptysis)<br>57. Pseudomonas A - pyocyanin blue/green<br>58. Staph Aureus - yellow - Protein A<br>59. Mycobacteria - photo/scoto chromogenic - carotinoid - yellow/orange<br>60. Corynebacterium D - black/gray - pseudomembrane plaque in throat<br>61. Bacteroides (Porphyromonas) melaninogenicus - black (heme)<br>62. E. coli - irredescent green sheen |
| Bacterial Morphology                 | 63. Pneumococci - lancet shaped diplococci<br>64. Neisseria - kidney bean shaped diplococci<br>65. Campylobacter - gulls' wings/comas<br>66. Vibrio Cholera - comma shaped<br>67. Corynebacterium D - club shaped (nonmotile, G+Rod)<br>68. Yersinia - safety pin seen in Wayson's stain   |
| Inclusion Bodies                     | 69. Rabies - Negri bodies - intracytoplasmic<br>70. Pox virus - Guarnieri - intracytoplasmic & acidophilic<br>71. CMV - Owl's eyes - intracytoplasmic & intranuclear<br>72. HSV - Cowdry bodies - intranuclear   |
| Schistosoma Japonicum Monsoni        | 73. Intestinal - contact w/ bad water  |
| Schistosoma Haematolium              | 74. Vesicular - contact w/ bad water   |
| Non Human Schistosom                 | 75. Swimmer's itch - contact w/ bad water  |
| Clonorchichis                        | 76. Chinese liver fluke - eating raw fish. Txt: Praziquantel   |
| Fasciola Hepatica                    | 77. Sheep - eating raw fish. Txt: Praziquantel   |
| Fasciola Biski                       | 78. Giant intestinal flukes - eating raw fish. Txt: Praziquantel   |
| Paragonimus Westermani               | 79. Lung fluke - eating raw fish. Txt: Praziquantel  |
| Oxidase (+)                          | 80. Neisseria and most Gram (-)S   |
| Micro Aerophilic                     | 81. Campylobacter & Helicobacter   |
| Urease (+)                           | 82. All Proteus - can cause Staghorn/Struvite calculi (NH <sub>4</sub> <sup>-</sup> Mg <sup>2-</sup> stones): alkaline urine<br>83. Ureaplasma<br>84. Campylobacter pylori (Helicobacter)<br>85. Cryptococcus<br>86. Nocardia  |
| Coagulase (+)                        | 87. Staph A & Yersenia pestis  |
| Obligate Intracellular Bacteria      | 88. Chlamydia Pistacci (Chlamydia do not make own ATP); Mycobacterium Leprae; all Rickettsia except Roachalimea (make sufficient ATP to survive)   |
| Protozoa                             | 89. Plasmodium; Toxoplasma ghondi; Babesin; Leishmania; Trypanosoma Cruzi  |
| Obligate Non Intracellular Parasites | 90. Treponema palidum & Pneumocystis Carinii (cannot be cultured on inert media but can be found extra cellularly in the body)   |
| Haemophilus Factors                  | 91. X = Protoporphyrin & V = NAD   |
| All cocci are                        | 92. Gram (+) except for Neisseria & Moraxella  |
| "Eaton Fried Eggs"                   | 93. Mycoplasma pneumoniae has fried egg colonies on Eaton agar (needs cholesterol)   |
| Mycoplasma                           | 94. No cell wall. Membrane has cholesterol. Smallest living bacteria.<br>95. P1 protein inh ciliary action<br>96. Fried egg colonies<br>97. Atypical pneumonia - young adults  |
| Sabrands                             | 98. Fungal media   |
| Malassazia furfur                    | 99. Spaghetti & meat ball  |
| Measles' 3C's                        | 100. Cough - Coryza - Conjunctivitis. Can also have photophobia<br>101. May lead to subacute Sclerosing Panencephalitis  |

|  |  |
|--|--|
| Non Motile Bacilli & Clostridium                             | 102. B. Anthracis & C. Perfringens   |
| Bloody diarrhea agents                                       | 103. EIEC - EHEC - Shigella - Yersenia enterocolitica - Entamoeba histolytica - Salmonella - Campylobacter jejuni  |
| YW-135CA   | 104. N. meningitidis vaccine capsular polysaccharide strains   |
| Indian Ink   | 105. Cryptococcus neoformans   |
| Naegleria causes   | 106. Colonization in the nasal passages after swimming   |
| Need Cysteine for growth                                     | 107. "Ella likes cysteine":<br>108. Francisella<br>109. Brucella<br>110. Legionella<br>111. Pasturella   |
| Endotoxins, G(+) or G(-)                                     | 112. Gram (-): N. meningitidis   |
| Ecthyma Gangrenosum, seen w/                                 | 113. Pseudomonas aeruginosa. Target shaped skin lesions w/ a black center and red ring surrounding the lesion  |
| Endospores G(+)  | 114. Gram (+): Bacillus & Clostridium - made up of dipicolinate & Keratin  |
| Multi Brain Abscess  | 115. Nocardia  |
| Single Brain Abscess   | 116. Actinomyces israelii  |
| ↑ risk for Strep pneum Infection                             | 117. Asplenic; Sickle cell anemia; immunocompromising illness  |
| α Hemolysis/Optochin Sensitive                               | 118. Strep. Pneumoniae   |
| α Hemolysis/Optochin Resistant                               | 119. Strep. Viridans (Subacute Endocarditis)   |
| Staph. Saprophyticus   | 120. Novobiocin Resistant (UTIs)   |
| Staph. Epidermidis   | 121. Novobiocin sensitive (Endocarditis in IVDUs)  |
| β Hemolysis/Bacitracin Sensitive                             | 122. <b>Strep. Pyogenes</b> (pharyngitis; Scarlet fever; cellulitis; impetigo; Rheumatic fever))<br>123. Hyaluronic capsule; non-motile; M proteins; Endotoxin A |
| β Hemolysis/Bacitracin Resistant                             | 124. Strep. Agalactiae (Diabetes predisposes to infection)   |
| EFII Ribosylation  | 125. Diphtheria toxin & Pseudomonas exotoxin A   |
| Bacillus Anthracis: 3 toxins<br>(work via adenylate cyclase) | 126. Protective Antigen (PA)<br>127. Lethal Factor = toxic to macrophages<br>128. Edema Factor = ↑ cAMP  |
| Woolsorter's Disease   | 129. Bacillus anthracis. <b>DOC</b> : Penicillin   |
| Grows in Rice  | 130. Bacillus Cereus   |
| Clostridium Perfringens                                      | 131. Double Zone β Hemolysis (test)<br>132. Lecithinase: α toxin = lyses RBCs<br>133. 80% of gas gangrene (myonecrosis) cases                                    |
| Clostridium Difficile  | 134. 2 Toxins: Enterotoxin (Exotoxin A) & Cytotoxin (Exotoxin B)<br>135. Pseudomembranous colitis (can be precipitated by clindamycin/ampicillin)                |
| Spastic Paralysis toxin                                      | 136. Clostridium Tetani toxin  |
| Clostridium Botulinum  | 137. Bad canned foods have neurotoxin = flaccid paralysis (block Ach release)  |
| Infant Botulinum   | 138. Floppy Baby Syndrome. Pre formed toxin in honey   |
| Thayer Martin Agar   | 139. Neisseria ID  |
| DOC for N. gonorrhoeae                                       | 140. Ceftriazone   |
| K1 E. Coli Capsular Ag                                       | 141. Related w/ neonatal meningitis  |
| The A's of Klebsiella  | 142. Alcoholics<br>143. Aspiration pneumonia<br>144. Abscesses in the lungs  |
| Rice H <sub>2</sub> O Diarrhea                               | 145. Vibrio Cholera: metabolic acidosis  |
| Raw seafood intoxication                                     | 146. Vibrio parahaemolyticus   |
| Helicobacter Txt   | 147. Bismuth salts; Metronidazole; Tetracycline (or amoxicillin)   |
| ↑ risk of P. aeruginosa infection                            | 148. Burn patients & Cystic fibrosis   |
| Contact lens' infection                                      | 149. Pseudomonas aeruginosa  |
| Cat Bites  | 150. Pasteurella multocida   |
| Undulant Fever   | 151. Brucella  |
| Bordet Gengou Agar   | 152. Bordetella pertusis ID  |

|                                  |  |
|----------------------------------|--|
| Lowenstein-Jensen medium         | 153. <i>M. tuberculosis</i> ID   |
| Cat Scratch Disease              | 154. <i>Bartonella henselae</i> . Leion can resemble Kaposi's sarcoma.<br>155. Toxoplasmosis   |
| Pink Eye                         | 156. Adenovirus (type 8)   |
| True Hemaphrodite                | 157. Testes & Ovaries are present  |
| Pseudo Hemaphrodite              | 158. External genitalia does not coincide w/ gonads  |
| Male Pseudo Hemaphrodite         | 159. Testicular Feminization   |
| HLA Genes Location               | 160. 6p  |
| Parvovirus B19                   | 161. Fifth Disease: Erythema Infectiosum (ssDNA). Linked w/ sickle cell anemia   |
| Interferon MOA                   | 162. Inhibits viral replication (translation or transcription)   |
| Acute Hemorrhagic Conjunctivitis | 163. Seen w/ infections from Enterovirus & Coxsackie A   |
| Parainfluenza Causes...          | 164. Croup (Laryngotracheobronchitis)  |
| Swimming Pool Conjunctivitis     | 165. Adenovirus (types 3 & 4)  |
| RSV                              | 166. Bronchiolitis in infants  |
| Removed tonsils, find what virus | 167. In 80%, Adenovirus. In the immunosuppressed, activation can occur   |
| Bone Fever                       | 168. Dengue: Group B Togavirus, from the Arbovirus, transmitted by mosquitos   |
| HbsAg                            | 169. Appears in blood soon after infection, before onset of acute illness<br>170. Disappears w/in 4-6 months after the start of clinical illness   |
| HbeAg                            | 171. Appears early acute phase, indicates higher risk of transmitting the disease<br>172. Disappears before HbsAg is gone  |
| Anti-Hbc                         | 173. Present in beginning of clinical illness<br>174. Seen in the "window phase"   |
| Filamentous Bacteria             | 175. Actinomycetes = <i>Nocardia</i> ; <i>Actinomyces</i> ; <i>Streptomyces</i>  |
| Listeria contaminates            | 176. Milk, cheese, vegetables (coleslaw) in recent infections  |
| Shiga like Toxin                 | 177. <i>E. Coli</i> O157/H7: Hemorrhagic colitis & Hemorrhagic uremic syndrome   |
| Necrotizing Fasciitis            | 178. Group A Streptococci  |
| Relapsing Fever                  | 179. <i>Borrelia recurrentis</i>   |
| Löffler's Medium                 | 180. <i>Corynebacterium diphtheriae</i>  |
| Chlamydiae Developmental Cycle   | 181. Elementary Body: infectious particle that enters the cell<br>182. Reticulate Body: made from elementary body. Replicates, differentiates and releases elementary bodies to infect other cells<br>183. W/ infection you will see Glycogen containing inclusions<br>184. Cell wall lacks muramic acid |
| Trench Fever                     | 185. <i>Rochalimaea quintana</i>   |
| "Spotted Fever" Members          | 186. <i>Rickettsia rickettsii</i> (RMSF) & <i>R. akari</i> (rickettsial pox) in the U.S.<br>187. <i>R. sibirica</i> (tick typhus in China) & <i>R. australis</i> (typhus in Australia)   |
| Thrush Txt                       | 188. Nystatin txts candidiasis of the mouth  |
| Rose Bush Thorns                 | 189. Have <i>Sporothrix schenckii</i>  |
| Contact lens solution infection  | 190. <i>Acanthamoeba</i>   |
| Filiariasis Causant              | 191. <i>Wucheria bancrofti</i> (infection aka elephantitis & wucheriasis)  |
| Freshwater lake infection        | 192. Causes amebic meningoencephalitis due to <i>Naegleria fowleri</i>   |
| Reduviid bug bite                | 193. Transmits <i>Trypanosoma cruzi</i> (Chagas' disease): Romana's Sign   |
| Schistosoma Haematobium causes   | 194. Bladder calcification & cancer  |
| Schistosoma Mansoni causes       | 195. Presinusoidal HTN, splenomegaly, esophageal varices   |
| Snail, intermediate host of...   | 196. Schistosomiasis   |
| Ixodes scapularis transmits      | 197. Babesia (clinically resembles malaria) & <i>Borrelia burgdorferi</i>  |
| Nantucket Protozoa               | 198. <i>Babesia microti</i>  |
| Infection by Reduviid Bug        | 199. <i>Trypanosoma cruzi</i> : Chagas' Disease  |
| Infection by Tsetse Fly          | 200. <i>Trypanosoma brucei gambiense</i> & <i>rhodiense</i> : African Sleeping Sickness  |
| Infection by Sandfly             | 201. Leishmaniasis: Mucocutaneous Diseases by <i>L. braziliensis</i> & Visceral Disease by <i>L. donovani</i> & Dermal Leishman by <i>L. tropica</i> , <i>mexicana</i> , <i>peruviana</i>  |
| Infection by Ixodes Tick         | 202. <i>Babesia microti</i> : Babesiosis & <i>Borrelia burgdorferi</i> : Lyme Disease  |



|  |  |
|--|--|
| Infection by Anopheles Mosquito        | 203. Malaria   |
| Trophozoites w/ "Face-Like" Appearance | 204. Giardia lamblia   |
| Nonseptate Hyphae                      | 205. Zygomycosis: Rhizopus & Mucor. Only mycosis w/o septate. Infect Ketoacidotic Diabetics.   |
| Histoplasmosis Geography               | 206. Ohio, Mississippi, Missouri River valleys   |
| Coccidioidomycosis Geography           | 207. Southwestern deserts, California  |
| Blastomycosis Geography                | 208. States east of Mississippi River  |
| Paracoccidioidomycosis Geography       | 209. Latin America   |
| Roseola Infection, aka                 | 210. Exanthema Subitum: "Sixth Disease" (Human Herpes Virus-6 dsDNA, enveloped)  |
| Herpangina                             | 211. "Hand-Foot-and-Mouth" Disease: Coxsackie A (Picornavirus +ssRNA)  |
| Orthomyxovirus                         | 212. -ssRNA, enveloped virus.<br>213. Spike Glycoproteins (peplomers): HA = Hemagglutinin & NA = Neuraminidase. These peplomers are what give the virus antigenic variation<br>214. Influenza A & B    |
| Paramyxovirus                          | 215. -RNA, enveloped. Most common cause of respiratory infections in kids<br>216. Mumps<br>217. Croup(Parainfluenza virus)<br>218. Rubeola(Measles virus)<br>219. RSV                                  |
| Togavirus                              | 220. +ssRNA, enveloped<br>221. 3 Day Measles: German Measles: Rubella/ Rubivirus<br>222. Encephalitis viruses: Alphaviruses: Eastern (more severe) and Western Equine Encephalitis                     |
| Flaviviris                             | 223. Dengue Fever - icterus & hemorrhage w/ black vomit<br>224. Yellow fever<br>225. St. Louis Encephalitis - no hepatitis or hemorrhage   |
| Bunyavirus                             | 226. -ssRNA, enveloped<br>227. California Encephalitis - severe bifrontal headaches<br>228. Hantavirus - hemorrhagic fever w/ acute resp. distress syndrome  |
| IgA Protease Activity                  | 229. H. Influenzae (needs factors V & X for growth)<br>230. Strep. Pneumoniae<br>231. N. meningitidis<br>232. N. gonorrhoeae<br>233. W/ this activity these bugs are able to colonize the oral mucosa. |
| Diphtheria: ABCDEFG                    | 234. Adenopathy<br>235. $\beta$ Prophage encodes the exotoxin<br>236. Corynebacteria is Club shaped<br>237. Diphtheria<br>238. Elongation Factor II<br>239. Granules (metachromatic)                   |
| Only ssDNA                             | 240. Parvovirus: "Part of a virus"   |
| Only dsRNA                             | 241. Reovirus, "RepeatOvirus"  |
| Naked RNA                              | 242. "Naked for CPR": Calcivirus; Picornavirus; Reovirus   |
| 2 circular DNAs                        | 243. Papovavirus & Hepadnavirus  |
| BK                                     | 244. Papovavirus. Seen in kidney transplant patients (causes renal disease)  |
| Hepadna, Retrovirus?                   | 245. No, but has reverse transcriptase   |
| Picornovirus: "PERCH"                  | 246. Poliovirus; Echo; Rhino; Coxsackie; Hep A   |
| Hemorrhagic Fevers                     | Filovirus & Bunyavirus (Hantavirus)  |
| Segmented viruses                      | All are RNA: Orthomyxo; Arena; Bunya; Reo  |
| Eclipse Phase                          | No internal virus. 1 total virus per cell  |
| Latent Phase                           | No external virus. Extracellular virus found   |
| Naked Capsid Virus                     | Nucleocapsid. DNA or RNA + Structural proteins   |
| Enveloped Virus                        | Membrane. Nucleocapsid + Glycoprotein  |
| Interferon                             | Non virus specific. Works by RNA endonuclease = digests viral DNA + inh viral prot synth   |
| AIDS structural prots                  | Gag, pol, env  |

|                                   |   |         |       |       |        |
|-----------------------------------|---|---------|-------|-------|--------|
| AIDS regulatory prots             | Tat, rev, nef   |         |       |       |        |
| AIDS gp41 env prot                | Transmembrane   |         |       |       |        |
| AIDS gp120 env prot               | Surface   |         |       |       |        |
| AIDS p17 gag prot                 | Matrix  |         |       |       |        |
| AIDS p24 gag prot                 | Capsid  |         |       |       |        |
| AIDS p7p9 gag prot                | Nucleocapsid  |         |       |       |        |
| DNA Viruses                       |   |         |       |       |        |
| (+) RNA Viruses                   |   |         |       |       |        |
| (-) RNA Viruses                   |   |         |       |       |        |
| Hepatitis Window Period           | After HbsAg disappears & Before HbsAb appears   |         |       |       |        |
| Hepatitis                         | A   | B       | C     | D     | E      |
|                                   | Picorna   | Hepadna | Flavi | Delta | Calici |
| Downey Type II cells              | EBV   |         |       |       |        |
| Infection by Aedes Mosquito       | Yellow Fever: Flavivirus: Black vomit, jaundice, high fever   |         |       |       |        |
| "Hot T-Bone stEAK": ILs           | IL1 = ↑ Temp: <b>HOT</b><br>IL2 = stimulate T cells<br>IL3 = stimulate <b>Bone</b> Marrow stem cells' growth & differentiation (GM CSF)<br>IL4 = stimulate IgE (& IgG)<br>IL5 = stimulate IgA (& eosinophils) |         |       |       |        |
| ILs Secreted by CD4s              | IL2, IL4, IL5, IFN gamma  |         |       |       |        |
| ILs Secreted by Macrophages       | IL1 & TNF α   |         |       |       |        |
| C5a                               | Neutral chemotaxis.<br>When it is w/ C3a, participates in anaphylaxis   |         |       |       |        |
| C5 Convertase                     | When both Alternative and Classic pathways come together<br>Alternative: C3b, Bb, C3b + C3a → C5<br>Classic: 2b, 3b, C3a + C4b → C5   |         |       |       |        |
| Only Rickettsia not Intracellular | Quintana  |         |       |       |        |

|                            |  |             |                                |
|----------------------------|--|-------------|--------------------------------|
| Plasmodium Life Cycle      | Sporozoites: from blood to liver<br>Primary tissue schizont<br>Trophozoites: in RBC<br>Erythrocytic schizont<br>Merozoite: ruptured RBC<br>Gametozyte<br>Zygote: inside the mosquito |             |                                |
| Acanthamoeba               | Star shaped cysts  |             |                                |
| Mucor, Rhizopus, Absidia   | Nonseptate, filamentous, 90 degree branching, indian in, capsular halos  |             |                                |
| Cryptococcus Neoformans    | Monomorphic  |             |                                |
| Candida                    | Yeast normally, pseudo & true hyphae in tissue infections  |             |                                |
| Aspergillus Fumigatum      | 45 degree branching point, asoc'd w/ cystic fibrosis & burns pt  |             |                                |
| Coccidioides               | Hyphae in wild. Arthroconidia. Arthrocondida & Hyphae. Spherules w/ endospores   |             |                                |
| Histoplasma Cap            | Hyphae in wild. Microcondida w/ tuberculate macrocondida. Fac intracellular. In the tissue it's a yeast w/ a small neck.   |             |                                |
| Blastomycosis              | Hyphae in wild   |             |                                |
| Sporothrix Schenkii        | Hypahe in wild. Potas iodide in milk. Pneumonia in alcoholics.   |             |                                |
| PCP                        | Obligate parasite. Kills type I pneumo cells. Ground glass   |             |                                |
| Gram (-) Bugs w/ Exotoxins | E. Coli; V. Cholera; Bordetella Pertussis  |             |                                |
| Dermatophytes              | Trichophyton: SHN<br>Microsporium: SH<br>Epidermophyton: SN<br>Tinea tavus: permanent hair loss  |             |                                |
|                            | <i>Transmission</i>  |             | <i>Diagnosis</i>               |
| E. Histolitica             | Cysts  |             | Trophozoites or cysts in stool |
| Giardia                    | Cysts  |             | Trophozoites or cysts in stool |
| Cryptosporidium            | Cysts  |             | Acid fast oocysts              |
| Balantium C.               | Cysts  |             | Trophozoites or cysts in stool |
| Trichomonas V.             | Trophozoites   |             | Motile trophozoites            |
|                            | <i>Fever</i>   |             | <i>Fever Spike</i>             |
| Vivax                      | Benign 3 degrees   | 48h         | Enlarged Host Cell             |
| Ovale                      | Benign 3 degrees   | 48h         | Oval/Jagged                    |
| Malariae                   | 4 degrees of Malarial  | 72hrregular | Crescent                       |
| Falciparum                 | Malignant 3 degrees  |             |                                |

## Miscellaneous

1. Fastest growing tumor - Burkitt's
2. PE's are found in half of all autopsies
3. Courvoisier's Law: tumors that obstruct the common bile duct cause enlarged gallbladders, but obstructing gallstones do not (too much scarring), so if you can palpate the gallbladder you're probably looking at cancer.
4. Only DNA virus to replicate in cytoplasm: Pox
5. Only RNA virus to replicate in nucleus: Influenza
6. *Bacillus anthracis* has the only protein capsule
7. *Bordetella pertussis* (Whooping Cough) elicits lymphocytosis rather than granulocytosis
8. Bronchioalveolar carcinomas grow without destroying the normal architecture of the lung
9. *Cryptococcus neoformans* often lacks a capsule and, when stained with GMS, looks just like *Pneumocystis carinii*, except that *Cryptococcus* lacks the prominent nucleoli.
10. Weil Felix reaction: (+)R. rickettsii & (+)Proteus vulgaris & P. mirabilis
11. Treponema pallidum (Syphilis) tests: 1)VDRDL 2)FTA-Abs: most widely used 3)TPI (immobilization test - most expensive but the Gold Standard)

| Cytokine  | Source                        | Function   |
|-----------|-------------------------------|--|
| IL 1      | 12. Monocytes, macrophages    | Stimulates T cell proliferation & IL2 production   |
| IL 2      | 13. Macrophages, T & NK cells | Stim proliferation of B, T & NK cell               |
| IL 3      | 14. T cells                   | GF of tissue mast cells & hematopoietic stem cells |
| IL 4      | 15. T cells                   | ↑ growth of B & T cells/ ↑ HLA II Ags              |
| IL 5      | 16. T cells                   | Maturation of B → plasma cell                      |
| IL 6      | 17. T cells, monocytes        | Maturation of B & T cell/ (-) fibroblasts          |
| IFN α     | 18. B cells, macrophages      | Antiviral activity                                 |
| IFN β     | 19. Fibroblasts               | Antiviral activity                                 |
| IFN gamma | 20. T & NK cells              | Antiviral activity, (+) macrophages, ↑ HLA II Ags  |
| TNF α     | 21. Macrophages, T & NK cells | T cell prolifer, IL 2 prod, cytotoxicity           |
| TNF β     | 22. T cells                   | T cell prolifer, IL 2 prod, cytotoxicity           |

## Tumor Suppressor Genes

| Genes  | Chrom. | Associated Tumors                                     |
|--------|--------|---|
| VHL    | 3p     | Von Hippel Lindau, Renal Cell CA                      |
| APC    | 5p     | Familial adenomatous polyposis, Colon CA              |
| WT-1   | 11p    | Wilm's tumor  |
| Rb     | 13q    | Retinoblastoma, Osteosarcoma                          |
| BRCA-2 | 13q    | Breast CA   |
| p53    | 17p    | Most human CAs  |
| NF-1   | 17q    | Neurofibromatosis type 1                              |
| BRCA-1 | 17q    | Breast CA, Ovarian CA                                 |
| DCC    | 18q    | Colon & Stomach CA                                    |
| DPC    | 18q    | Pancreatic CA   |
| NF-2   | 22q    | Neurofibromatosis type 2 = bilateral acoustic neuroma |

## Physio Equations:

Resistance in Series: Add all

Resistance in Parallel: Invert the answer

**RENAL:**

$$\text{Filtration Fraction} = \frac{GFR}{RPF} \quad \text{GFR: Glomerular Filtration Rate} \quad \text{RPF: Renal Plasma Flow}$$

$$\text{Filtered Load} = GFR \times [\text{Conc}] \quad \text{Excretion Rate} = [\text{Urine}] \times \text{Vel}_{\text{Urine}}$$

$$\text{Clearance} = \frac{[\text{Urine}] \times \text{Vel}(\text{Urine})}{[\text{Plasma}]} \quad \text{or} \quad \frac{\text{Excretion}}{[\text{Plasma}]} \quad \text{Clearance of PAH} = [\text{ERPF}] \quad \text{ERPF: Eff renal plasma flow}$$

$$\text{Renal Blood Flow} = \frac{ERPF}{1 - Hct}$$

$$\text{Free Water Clearance} = \text{Vel}_{\text{Urine}} - \frac{\text{Urine}(\text{osm}) \times \text{Vel}(\text{urine})}{P(\text{osm})}$$

### CARDIO:

$$CO = HR \times SV$$

$$CO = \frac{O_2(\text{consumed})}{\text{Pulmonary } A - VO_2 \text{ difference}}$$

$$\text{Pulse Pressure} = \text{Systolic} - \text{Diastolic}$$

$$\text{MAP} = \text{Diastolic} + 1/3 \text{ Pulse Pressure}$$

$$CO = \frac{MAP}{TPR}$$

$$\text{MAP} = TPR \times CO$$

$$F = \frac{P_1 - P_2}{R}$$

### LUNGS:

$$P_{A}O_2 = (760 - 47) FO_2 - \frac{P_{ACO_2}}{R}$$

Where:

$$FO_2 = [O_2] \quad P_{A}CO_2 = \text{Alv. Press. Of } CO_2 \quad R = \text{Resp. Exchange Ratio} \frac{CO_2 \text{ produced}}{O_2 \text{ consumed}} \cong .8 \text{ or } 1$$

$$\text{Flow} = \frac{O_2 \text{ consumed}}{A \text{ to } VO_2 \text{ difference}}$$

$$\text{Vel}_{\text{gas}} \text{ Diffusion} = \frac{\text{Area}}{\text{Thickness}} \times \text{Gas Diffusion Constant} \times \text{Difference of Partial Press}$$

$$\text{Vent}_{\text{Tot}} = \text{Vent}_{\text{Tidal}} \times \# \text{ of Respirations}$$

$$\text{Vent}_{\text{Alv}} = (\text{Vent}_{\text{Tidal}} - \text{Vent}_{\text{Dead}}) \times \# \text{ of Respirations}$$

$$\text{Compliance} = \frac{\text{Vol}}{\text{Press}}$$

$$P = \frac{\text{Tension}}{\text{Radius}}$$

$$1.0 = V_a / Q$$

$$\text{Diffusing Capacity} = \frac{CO_{\text{uptake}}}{P_{ACO_2}}$$

Resp Doubles: 150mmHg & 40mmHg

New  $PCO_2 = 20$

New  $PO_2 = 170$