GLUCOSE

1. making glucose from non-carbohydrate sources
2. breakdown of glucose for energy.
3. Making glycogen from glucose for storage
4. breakdown of glycogen for energy
5. glycogen :: liver (75g), muscle (400g)
6. glucagon and insulin
7. islets of Langerhans (alpha) :: promote release of glucose from glycogen
8. islets of Langerhans (β) :: uptake of glucose into tissues, lipid & carbohydrate storage, protein synthesis
9. pre-formed insulin are released 10 -- 15 minutes after ingestion + a prolonged formed release
10. two hours
11. immediate release stimulated by increased ATP to ADP ratio
12. Prolonged release stimulated by increased concentrations of acetyl CoA in cells
13. suppresses lipolysis, stimulate lipogenesis in creating VLDL in the liver
14. glucagon
15. glycolysis and glycogen synthesis
16. Glycogenolysis, gluconeogenesis, and ketogenesis
17. Hypoglycemia
18. glucose (for stressful events)
19. different binding sites
20. cortisol, return blood glucose levels to normal post stress
21. non-insulin-dependent diabetes mellitus
22. autoimmune reaction , genetics :: most commonly around 12 years of age
23. lifestyle, genetics, most commonly in +40 year olds
24. insulin injections, diet and exercise :: diet and exercise
25. increased glycosylated hemoglobin :: B6
26. during hyperglycemic condition
27. eye lens (cataracts) :: nerve tissue (diabetic neuropathy)
28. vitamin C
29. high blood sugar, acidosis, potassium depletion, dehydration
30. IV fluids for dehydration with potassium supplement and insulin
31. deamination of aminos for energy
32. high levels of acetyl-CoA :: ↓ lipogenesis with ↑lipolysis
33. alcohol dehydrates and blocks first step of gluconeogenesis
34. ketosis
35. Insulin dep. of glucose into fat & muscle ↓, Insulin indep. In muscle ↑ (TNF big here)

36. Increased catabolism and decreased anabolism
37. Cytokines (IL-6 is big here)
38. insulin resistance (too much cortisol), adrenal exhaustion, hypoglycemia, eventual hyperglycemia
39. along cytokine inflammation affecting islets of Langerhans

NUCLEOTIDES

40. nitrogenous base and a 5 carbon sugar (ribose or deoxyribose)
41. nitrogenous base, 5 carbon sugar, and a phosphate group
42. multiple nucleotide structures
43. cellular energy
44. protein synthesis energy
45. activation energy for glucose and galactose
46. Glycerophospholipid synthesis and glycosylation of protein metabolism
47. RNA synthesis during transcription
48. Cytosine, uracil, thymine
49. uracil, guanine, adenine, and cytosine
50. Thymine, cytosine, guanine, and adenine
51. Thymine
52. Nucleus :: mRNA from DNA
53. Cytoplasm :: tRNA from mRNA
54. Triplet :: codon :: anticodon
55. Gout, Lesch-Nyhan syndrome, Von Gierke
56. excess purine breakdown, block XO with colchicine or allopurinol
57. red meats, alcohol, processed foods
58. X-linked disease with high urea asset levels in tissue, mental and physical impairment, self-mutilation
59. glycogen storage disease, lack G6p resulting in fat deposits, retarded growth, poor muscle development
60. isoleucine, leucine, lysine, methionine, phenylalanine, histidine, threonine, tryptophan, and valine
61. Arginine
62. neutral molecule bearing equal numbers of positive and negative charges (glycine & alanine)
63. serotonin, melatonin, niacin
64. iodine
65. absorb UV rays
66. alertness, reduce feeling of hunger, antidepressant, improved memory
67. suppression of viral replication of herpes
68. Homocysteine
69. Methionine

70. B6, B12, and folate
71. histamine, mast cells
72. arginine
73. glutamate
74. amino donor
75. amino acid sequence
76. Beta pleated sheets with alternating alpha carbons
77. three-dimensional structure of the protein
78. two or more polypeptide chains such as hemoglobin

LIPIDS

79. Sphingomyelins
80. Liver, scavenge excess cholesterol
81. carry cholesterol to tissues
82. liver, they transport lipids to tissues
83. transport dietary triglycerides from the intestines to tissues
84. even chain fatty acid degradation by sequential removal of two carbon acetyl-CoA
85. odd chain fatty acid and branched chain fatty acid degradation
86. transport Acyl groups during beta oxidation
87. From lysine or Methionine with Vitamin C
88. Saturated fat, 12, [breast milk, palm oil, cocoa butter]
89. Palmitoleic, oleic, linoleic, linolenic, and arachidonic
90. Butyric (4) & Caproic Acid (6) :: butter
91. Oleic Acid :: olives, peanuts, canola, avocado oils
92. Neiman-Pick (lack ASM-acid sphingolyelinase) & Tay Sachs (lack β-hexosaminidase for gangliosides)
93. Fatty accumulation in nerves (death by 4)
94. Gaucher's (glucocerebrosides in organs) & Krabbe's (enzyme deficiency resulting in myeline destruction)
95. enzymes
96. liver, spleen, bone marrow, lungs, & brain
97. iodine number
98. shorter
99. Acetyl-CoA with Biotin
100. Its energy consumptive (endothermic/endergonic)
101. 1. Acetyl CoA → 2. HMG CoA → Mevalonate → 3. Squalene → Cholesterol :: Cytoplasm
102. HMG CoA into Mevalonate :: Statins attack HMG reductase
103. 4 (n6) to 1 (n3)

104. Delta-6-desaturase
105. Elongase
106. Loss of a hydrogen
107. EPA, anti-inflammatory prostaglandin
108. Vitamin C + Niacin + Zinc :: Asthmatics
109. Zinc (overworked soils)
110. Flaxseed, DHA & EPA oil, leafy greens, wild game, fatty fish

WATER

111. Hard
112. Source, mineral content, processing
113. De-ionized
114. Flow freely from the source, minerals/gases/elements :: often used therapeutically
115. Filtered, mineral content
116. Any source
117. Minor dehydration
118. Lactic acid buildup

WATER SOLUBLE VITAMINS

119. As a complex with food in morning :: never from coal tar or brewer's yeast
120. Thiamine :: Beri Beri (impaired nervous system)
121. Riboflavin :: Ariboflavinous (dry mouth corners, eye infections, dermatitis
122. Vitamin A, gut mucosa
123. Niacin :: Pellagra (glossitis, diarrhea, dermatitris, dementia)
124. Introduction of WHITE BLEACHED grains
125. Niacinamide, niacin flush
126. Pantothenic Acid :: fatigue, nausea, burning in hands and feet (neurological symptoms)
127. Vitamin C :: antibodies & adrenal hormones
128. Pyridoxine :: Impaired healing, trauma irresolution, arthritis, convulsions
129. Homocysteine
130. folate
131. B5
132. Pyridoxine B6
133. folic acid
134. neural tube defects (spina bifida)
135. Cyanocobalamin :: calcium mal-absorption , pernicious & megaloblastic anemia, poor RBC formation

136. Homocysteine
137. Vegans :: kelp, soy, kombu
138. Cumidin
139. Vitamin C
140. Humans, guinea pigs, chimps, and fruit bats
141. Scurvy (bleeding gums, poor wound healing, weakness,) death
142. Vitamin E & Beta Carotene
143. ↓ LDL, ↑ HDL, protects against abnormal clotting
144. Reduces blood sorbitol levels
145. Steriods, BCP, alcohol, analgesics, SSRI, smoking
146. Reduce inflammation/pain, anti-bacterial, lower cholesterol, & prevents cataracts
147. Quercetin
148. Vitamin C & Bromelain
149. White material of citrus fruits
150. Anti oxidant, cellular energy
151. Age, oil, vitamin E
152. Periodontal disease, diabetes, muscular dystrophy
153. Cold water fish
154. Strength heart, counteract chemo, reduce symptoms of MS