OUTLINE:	BI/CH 422
Introduction and review Transport Glycogenolysis Glycocysis Other sugars Pasteur: Anderobic vs Aerobic Fermentrations Exam-1 material	ANABOLISM II: Biosynthesis of Fatty Acids and Lipids
Pyruvate Exam-2 material Krebs' Cycle Oxidative Phosphorylation Electron transport Chemicsmotic theory: Phosphorylation	Fatty Acids Triacylglycerides Membrane lipids Glyceraphaspholipids
Fat Catabolism Exam-3 material Fatty acid Catabolism Exam-3 material Mobilization from tissues (mostly adipose) Activation of fatty acids Activation of fatty acids Transport; carnitine Oxidation; E-oxidation, 4 steps: Protein Catabolism Amino-Acid Degradation Dealing with the carbon; seven Families Nucleic Acid & Nucleotoric Borg adation Nucleic Acid & Nucleotoric Borg adation	Sphingolipids Isoprene lipids: Cholesterol Ketone body synthesis Mevalonate Cholesterol
ANABOLISM I: PHOTOSYNTHESIS: Overview and key experiments: Light Reactions energy in a photon/pigments Reaction center &Photosystems (PSII & PSI) Proton Motive Force - ATP Carbon Assimilation - Calvin Cycle Rubisco/Oxygenase (Glycolate cycle) ender Data Sta	steroids metabolism control of cholesterol biosynthesis ANABOLISM III:
Verview and regulation C4 versus C3 plants Komberg cycle – glyoxylate Carbohydrate Blosynthesis in Animals pupercursors/Carl cycle Gluconeogenesis Hirreversible steps – four Glycogen Synthesis UD9_E/clycogen synthase/branching Pentose-Phosphate Pathway oxidative-NADPH Regunary State State Metabolism Anaplerotic reactions to the Metabolism	Biosynthesis of Amino Acids and Nucleotides Nitrogen fixation nitrogenase Nitrogen assimilation Amino-acid Biosynthesis Nucleotide Biosynthesis
Biosynthesis of Fatty Acids Contraits of Fatty Acids Contraits transport synthesis FAS, ACP priming; 4 steps Contraits 4 steps	Biosynthesis of secondary products of amino acids Exam-5 materia























ANABOLISM II: Biosynthesis of Fatty Acids & Lipids



ANABOLISM II: Biosynthesis of Fatty Acids & Lipids

- 1. Biosynthesis of fatty acids
- 2. Regulation of fatty acid degradation and synthesis
- 3. Diversification of fatty acids
 - a. Elongation/desaturation
 - b. Eicosanoids (Prostaglandins and Thromboxane)
- 4. Assembly of fatty acids into triacylglycerol and phospholipids
- 5. Metabolism of isoprenes
 - a. Ketone bodies and Isoprene biosynthesis
 - b. Isoprene polymerization
 - i. Cholesterol
 - ii. Steroids & other molecules
 - iii. Regulation
 - iv. Role of cholesterol in human disease



















