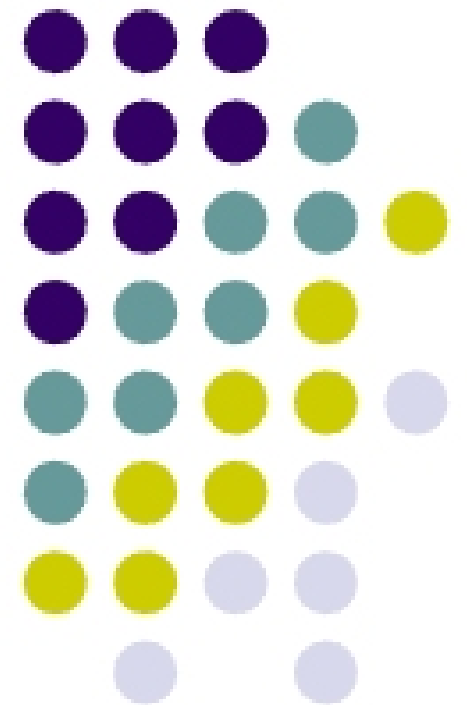


Cell Respiration & Fermentation

Chapter 9



4 Major Steps in Metabolism



- Step 1
 - Glycolysis – glucose to 2 pyruvate
 - Production of 2 ATP & 2 NADH
 - Remember if no oxygen is present then steps 2 to 4 do not occur and fermentation takes place
- Step 2
 - Pyruvate Dehydrogenase Complex
 - Production of Acetyl CoA, NADH & CO₂
- Step 3
 - Krebs cycle
 - Complete oxidation of your food
 - Production of 1 ATP, 3NADH, 1FADH₂ & 2 CO₂
- Step 4
 - Electron Transport Chain – ETC
 - Production of proton gradient by electron “hot potato”
 - Production of ATP by ATP synthase
 - Consumption of O₂ and production of H₂O

Glycolysis



- Cellular location
 - Cytoplasm
- Two Phases
- Preparatory phase
 - Invest 2 ATP
- Payoff phase
 - Get out 4 ATP
 - Get out 2 NADH
 - End with two molecules of pyruvate
- Ancient pathway evolved before photosynthesis
- Anaerobic pathway
- Most heterotrophic organism on earth use this pathway
 - Same 10 steps
 - Same enzymes