

Related Pathways

- Organisms are able to metabolize nutrients other than carbohydrates during times of starvation
- Once broken down, these monomers are able to feed into various parts of glycolysis or the Krebs cycle (Fig.1, p.117)

Protein Catabolism

- Through a process called deamination, proteins remove amino groups from the amino acids converting the group to ammonia, NH_3 (urea is expelled from the body in urine)

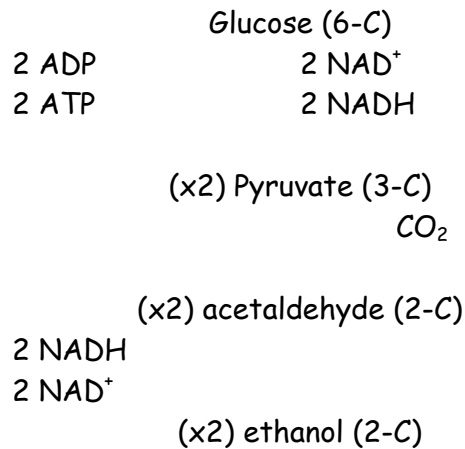
Lipid Catabolism

- Glycerol can be converted to glucose through a process called gluconeogenesis
- Fatty acids undergo beta-oxidation where 2-C acetyl groups are removed
- Fats can produce 20% more ATP than carbohydrates

Anaerobic Pathways (does not require oxygen)

- Mainly used by bacteria and protists that live in oxygen-free settings, although lactate fermentation can occur in multicellular organisms

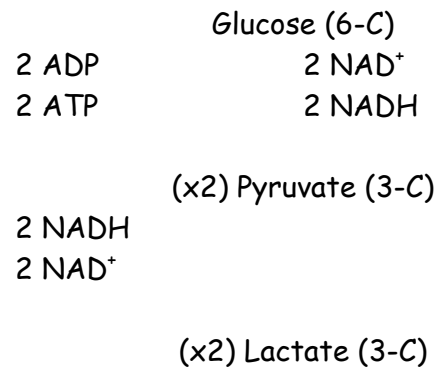
1. Ethanol Fermentation (through glycolysis) (Fig.2, p.119)



- Ex/when yeast consumes sugar and releases CO_2 , it causes bread to rise)

2. Lactate Fermentation (through glycolysis)

(Fig.4, p.120)



- Ex 1/ Lactic acid builds up in muscle cells
- Ex 2/ Producing yogurt from milk