4.6 Fermentation

KEY CONCEPT

Fermentation allows the production of a small amount of ATP without oxygen.

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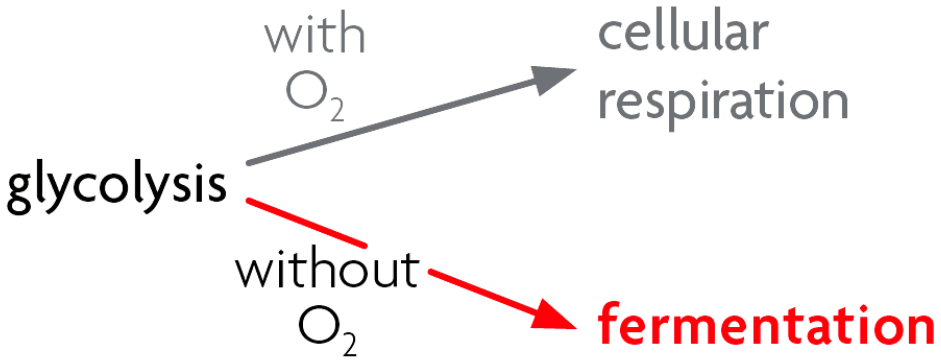
Fermentation allows glycolysis to continue.

- Fermentation allows glycolysis to continue making ATP when oxygen is unavailable.
- Fermentation is an anaerobic process.
  - occurs when oxygen is not available for cellular respiration
  - does not produce ATP

Fermentation is an anaerobic process that allows glycolysis to continue.



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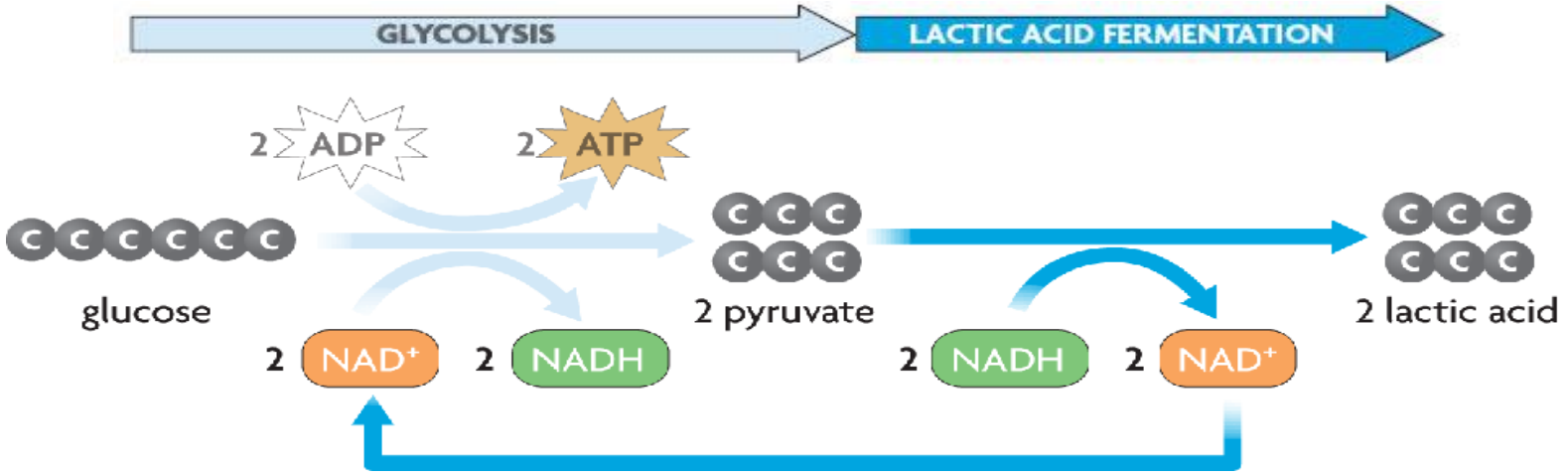
- Fermentation allows glycolysis to continue making ATP when oxygen is unavailable.
- NAD^+ is recycled to glycolysis
- Lactic acid fermentation occurs in muscle cells.
  - glycolysis splits glucose into two pyruvate molecules
  - pyruvate and NADH enter fermentation
  - energy from NADH converts pyruvate into lactic acid
  - NADH is changed back into NAD^+



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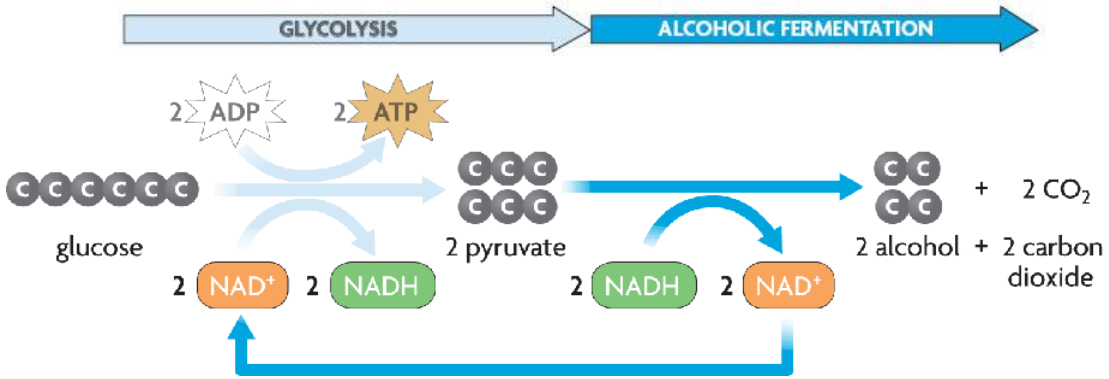
- **Fermentation and its products are important in several ways.**
  - Alcoholic fermentation is similar to lactic acid fermentation.
    - glycolysis splits glucose and the products enter fermentation
    - energy from NADH is used to split pyruvate into an alcohol and carbon dioxide
    - NADH is changed back into NAD^+
    - NAD^+ is recycled to glycolysis



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- Fermentation is used in food production.
  - yogurt
  - cheese
  - bread