

Concept 7.6

Some cells can harvest energy without oxygen.

Fermentation in Human Muscle Cells:

- When oxygen can't be supplied fast enough to meet muscle needs for ATP, muscle cells use **fermentation**. Which is the production of ATP without using oxygen.
- Cellular respiration still continues, but it is not the main source of ATP while fermentation is occurring

Fermentation:

- Makes ATP entirely from glycolysis.
- Produces a net of two molecules of ATP from each molecule of glucose consumed.
- By burning glucose fermentation can regenerate enough ATP for short bursts of activity.
- Fermentation in muscle cells produces a waste product called lactic acid.

Fermentation in Microorganisms:

- Yeast is capable of both cellular respiration and fermentation.
- In an **anaerobic** environment they are forced to ferment sugar and other foods.
- **Alcoholic fermentation** in yeast produces alcohol, instead of lactic acid, as a waste product along with carbon dioxide.