Respiratory Electron Transport Chains

- A series of carrier molecules that undergo sequential reduction and oxidation
- The first carrier is reduced with electrons obtained by oxidation of an electron carrier such as NADH
- The last carrier is oxidized by transfer of electrons to a terminal electron acceptor such as O₂

Chemiosmosis

- Some electron carriers actively pump protons (H⁺) across the membrane
- The resulting proton gradient is a source of potential energy - protonmotive force
- Transport of protons through a membrane-bound ATP synthase can be coupled to ADP phosphorylation
Summary of Aerobic Respiration

Fermentation

- Without an ETS or terminal electron acceptor, an alternate way to oxidize NADH must be used
- Fermentation products are reduced derivatives of pyruvic acid
Lactic Acid and Ethanolic Fermentations

Assorted Fermentation End-Products