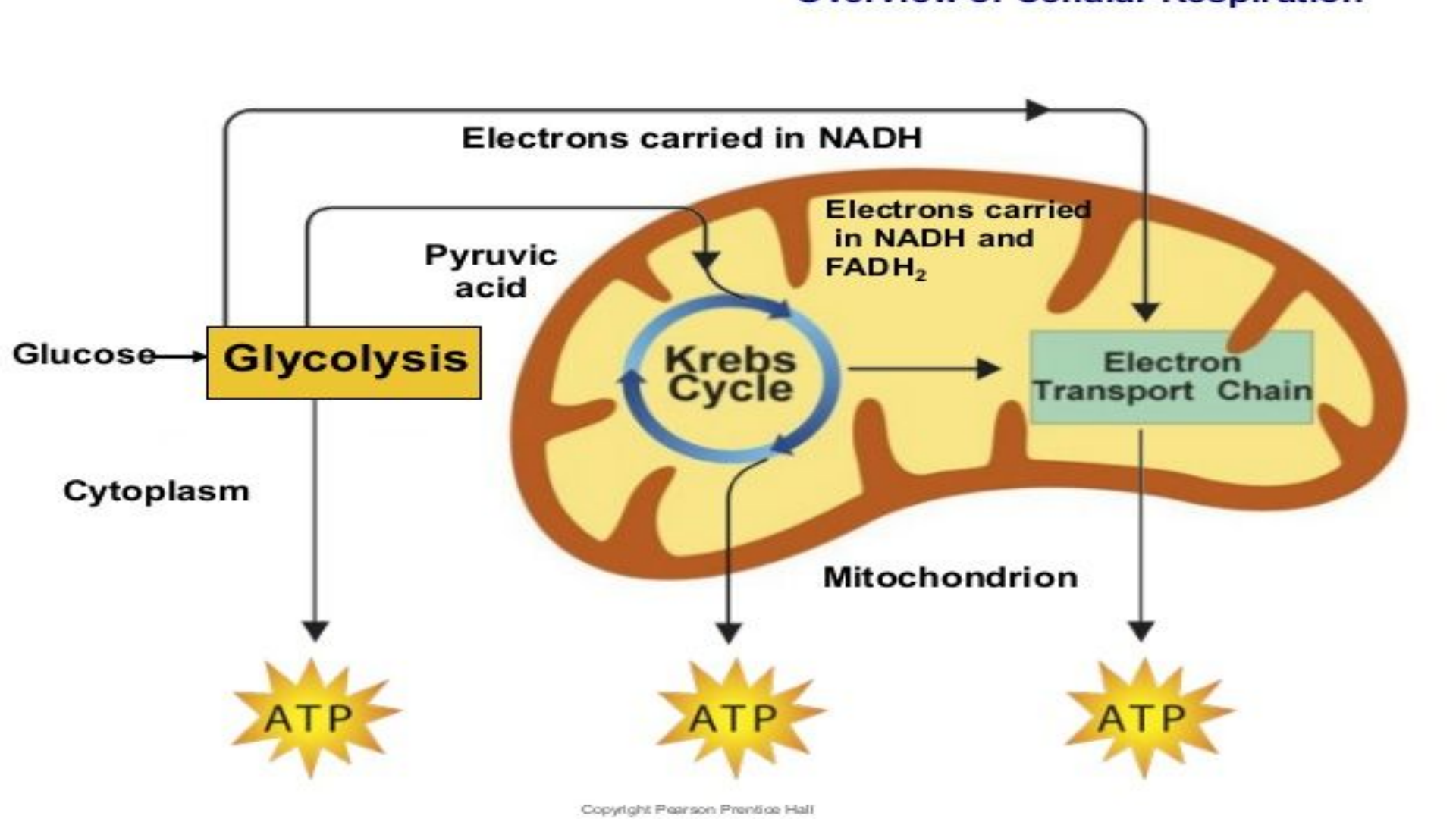
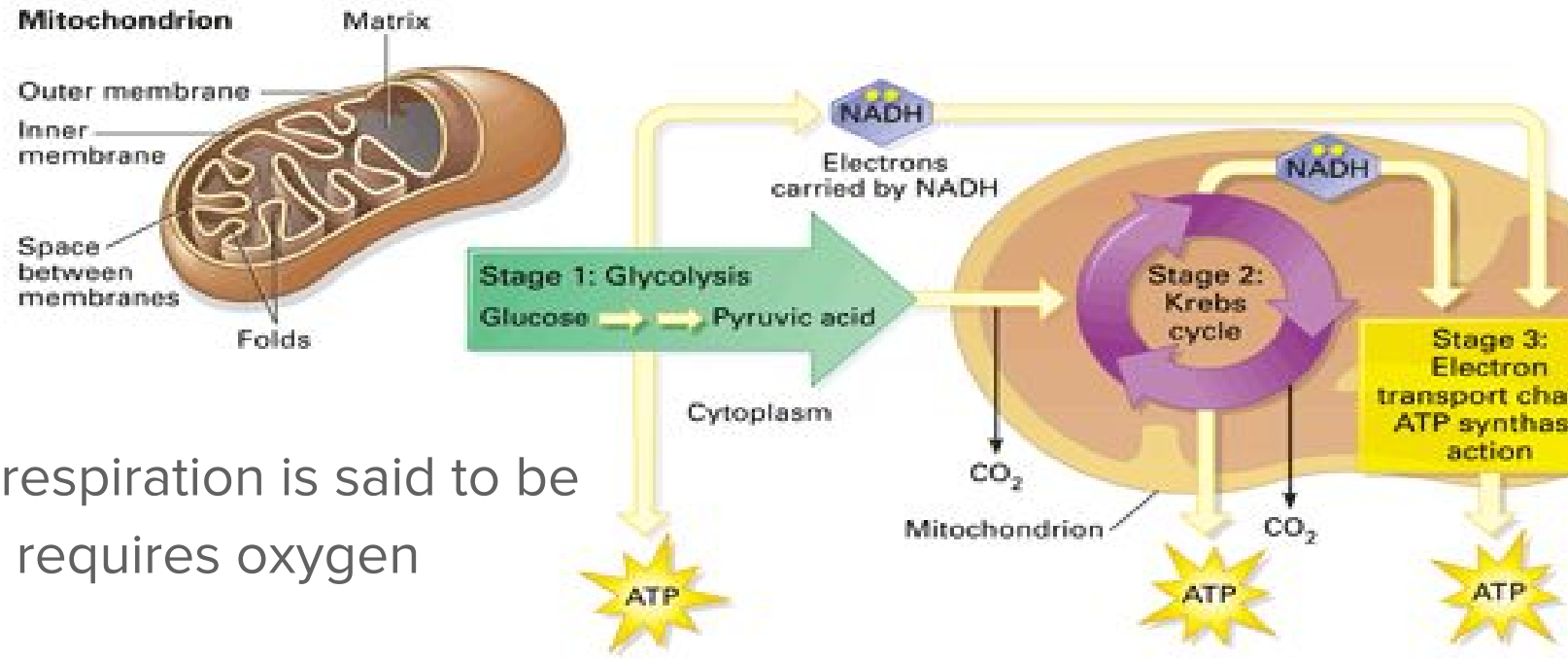


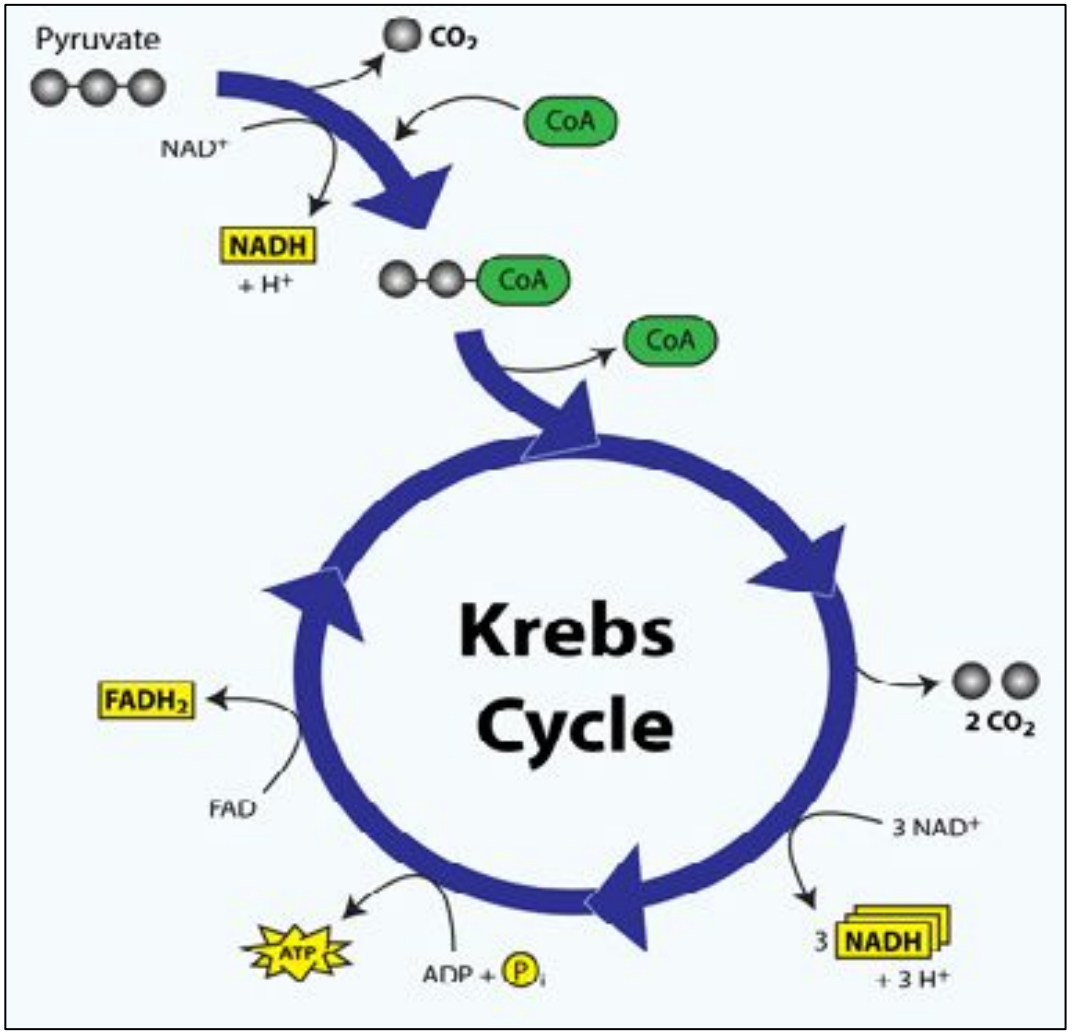
9.2 The Krebs Cycle



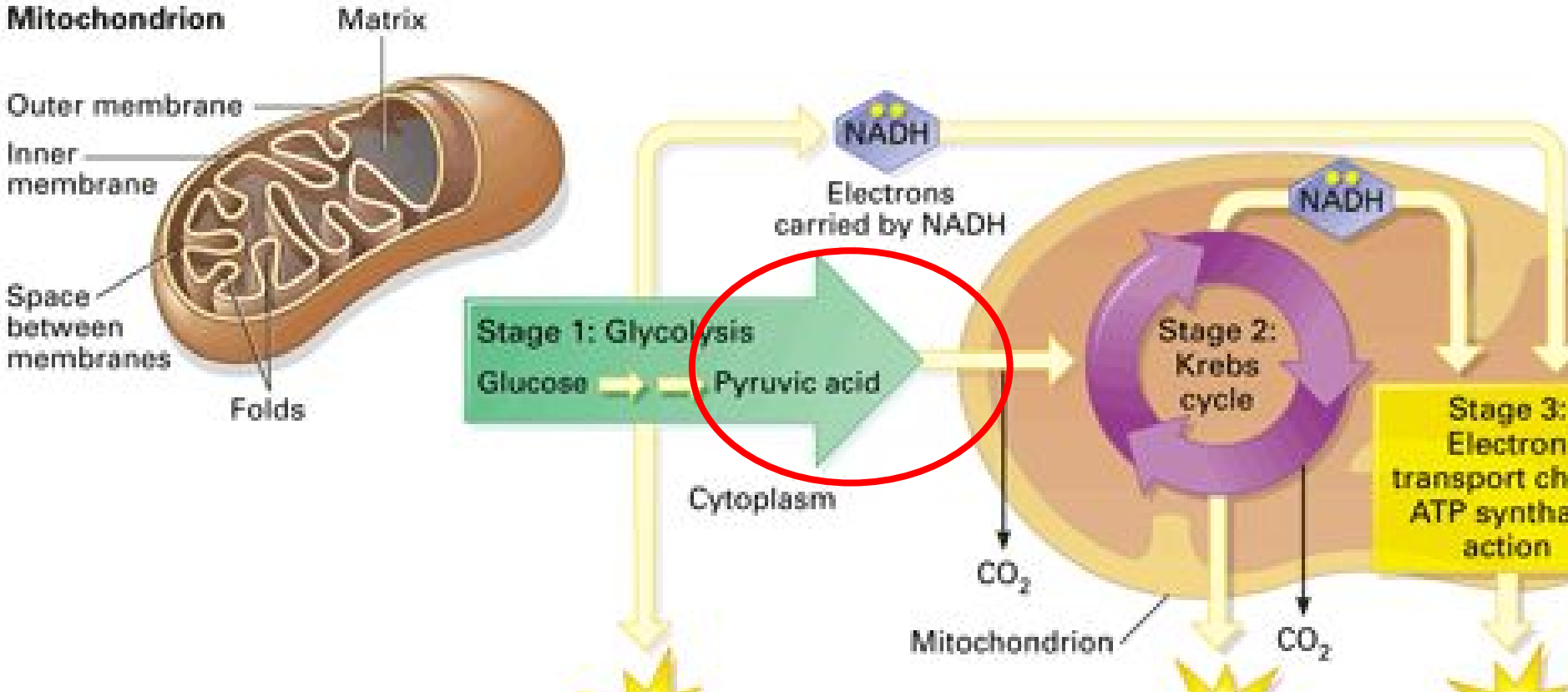
Cellular respiration is said to be **aerobic**: requires oxygen

If oxygen is present, pyruvic acid will pass into the second stage of respiration called the **Krebs cycle**

The Krebs cycle is named after Hans Krebs, a British biologist who discovered its existence in 1937.



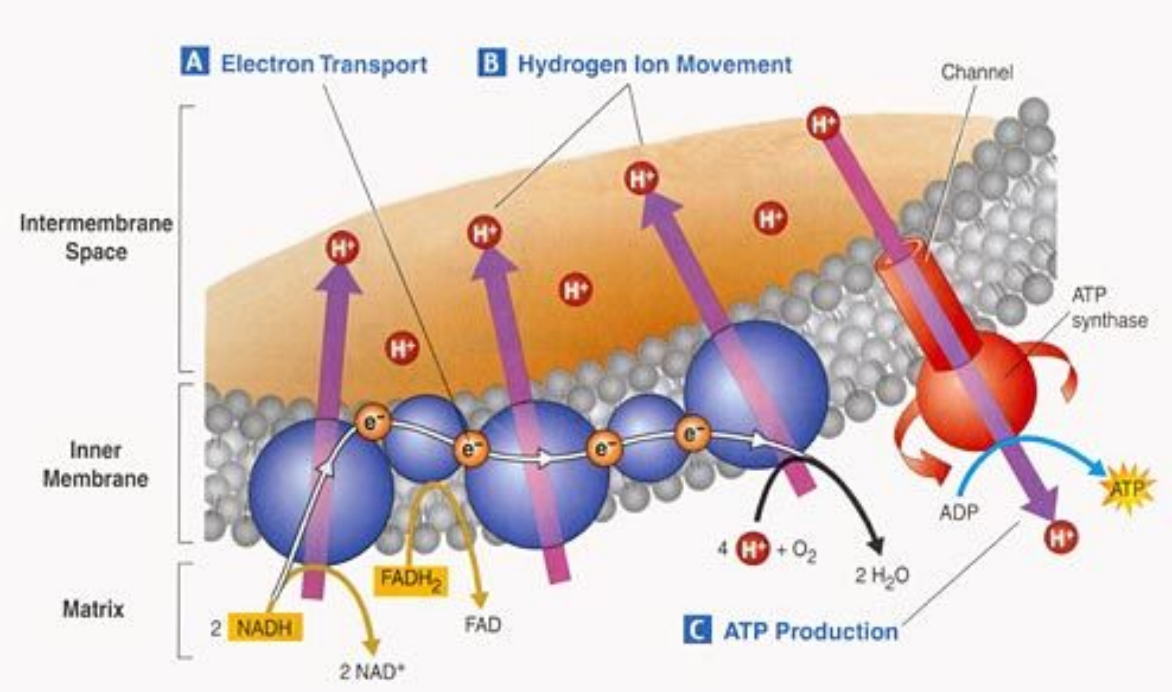
During the Krebs cycle, pyruvic acid is broken down into carbon dioxide in a series of energy-extracting reactions.



The Electron Transport Chain

High energy electrons produced in the Krebs cycle are transported by NADH and $FADH_2$ to the electron transport chain in the matrix membrane.

The electron transport chain uses the high-energy electrons to convert ADP to ATP.



Glycolysis produces only 2 molecules of ATP per molecule of glucose

The complete breakdown of cellular respiration results in the production of **36 molecules** of ATP.

This represents about 38% of the total energy of glucose.