1. **NADH** (from glycolysis, pyruvate oxidation & Krebs cycle) **transfer their electrons** to **NADH dehydrogenase** and **NADH** is **oxidized** to **$NAD^+$**

2. **$FADH_2$** (from Krebs cycle) transfer their electrons to **succinate dehydrogenase** and **$FADH_2$** is **oxidized** to **FAD**

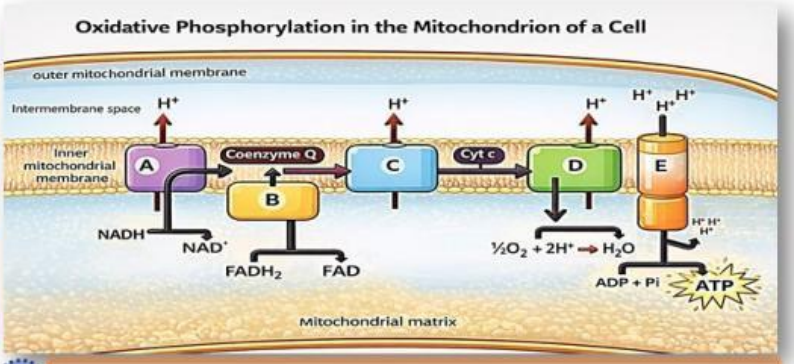
3. These electrons are transferred to **coenzyme Q** and then to a series of ETC which consist of **cytochrome c reductase**, **cytochrome c** and **cytochrome c oxidase** through a **redox reaction**

4. Electrons are then transferred to **$O_2$** which act as **final electron acceptor** in aerobic respiration

5. **½ $O_2$** combine with **2 electrons** and **$2H^+$** forming a **water molecule**

6. Movement of electrons along the electron transport chain releases **energy**

7. The energy is used to **pump $H^+$** from matrix of mitochondria into intermembrane space via **proton pumps** which are **NADH dehydrogenase, cytochrome c reductase and cytochrome c oxidase**




8. causes accumulation of $H^+$ in the intermembrane space that leads to production of **proton gradient** and generates **proton-motive force**

9. $H^+$ from intermembrane space diffuse back into **matrix of mitochondria** down its concentration gradient through **ATP synthase**

10. **ATP synthase** catalyze the **phosphorylation** of **ADP** to **ATP** by oxidative phosphorylation

11. One molecule of **NADH** produces **three ATP** and one molecule of **$FADH_2$** produces **two ATP**.