NADH

NAD* as an electron shuttle

\[ \text{NAD}^* \rightarrow \text{H}^+ + 2\text{H}^+ \text{ (from food)} \]

\[ \text{Eq}^\circ = -0.320 \text{ V} \]

\[ F = \text{Faraday constant} \]

\[ n = \text{number of electrons} \]

The sites of electron transfer that form NADH and FADH\textsubscript{2} in glycolysis and the citric acid cycle.
Mitochondria. (a) An electron micrograph of an animal mitochondrion.

Mitochondria. (b) Cutaway diagram of a mitochondrion.
Freeze-fracture and freeze-etch electron micrographs of the inner and outer mitochondrial membranes.

Electron microscopy–based three-dimensional image reconstruction of a rat liver mitochondrion.

The glycerophosphate shuttle.

昆虫の飛翔筋
The oxygen electrode.

Electron micrographs of mouse liver mitochondria.

(a) in the actively respiring state.  (b) In the resting state.
The mitochondrial electron-transport chain.

X-ray structures of cytochrome bc₁.

The dimeric bovine complex is viewed perpendicular to its 2-fold axis and parallel to the membrane with the matrix below.

The yeast enzyme in complex with cytochrome c and the inhibitor stigmatellin viewed with a ~90° rotation about its 2-fold axis.
X-ray structure of fully oxidized bovine heart cytochrome c oxidase.

The proton-translocating channels in bovine complex IV

X-Ray structure of fully oxidized bovine heart cytochrome c oxidase. The complex as viewed from the top

The intricacies of complex II