

Pentose phosphate pathway

- Cells use 2 different currencies to carry out actions: high-energy phosphate bonds and reducing power
 - ATP is used at the first currency, as the second currency, **NADH** and **NADPH** are used
 - **[nicotinamide adenine dinucleotide]**
 - NADH and NADPH are structurally similar but not metabolically interchangeable
 - NAD is reduced during glycolysis and during TCA cycle, and its energy is used in **oxidation** reaction to produce ATP in electron transport chain
 - NADPH is not used to produce ATP, rather it is used as co-factor in **reductive** biosynthesis of fatty acids and other reactions

