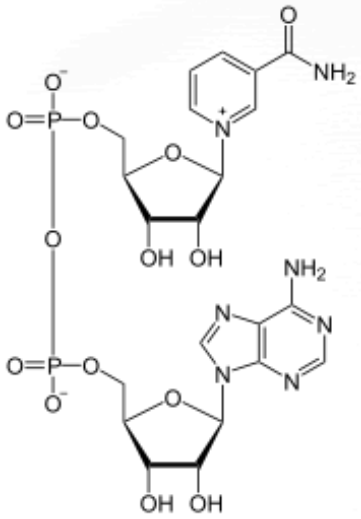
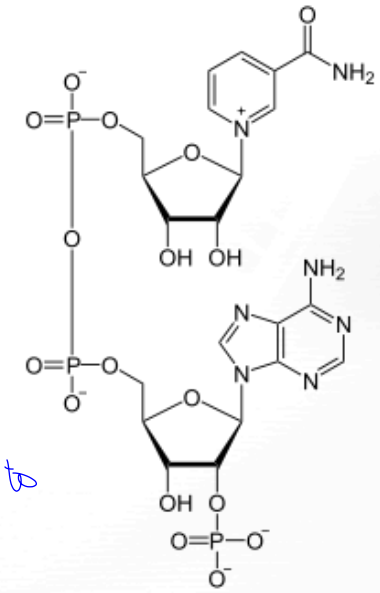
Pentose phosphate pathway

- To produce NADPH, a different set of reactions is used that constitute the pentose phosphate pathway
  - The pentose phosphate pathway consists of three stages, in which NADPH is produced, pentoses undergo isomerization, and glycolytic intermediates are recovered
  - The pathway provides NADPH for reductive biosynthesis and ribose-5-phosphate for nucleotide biosynthesis in the quantities that the cell requires
- Cells can maintain different ratios of [NAD]/[NADH] and [NADP]/[NADPH]





- for glycolysis to work forward, NAD^+ is necessary to stay at high concentrations to act as H^+ acceptors.

- however, NADPH stays at the higher concentration to allow for greater metabolic regulation.