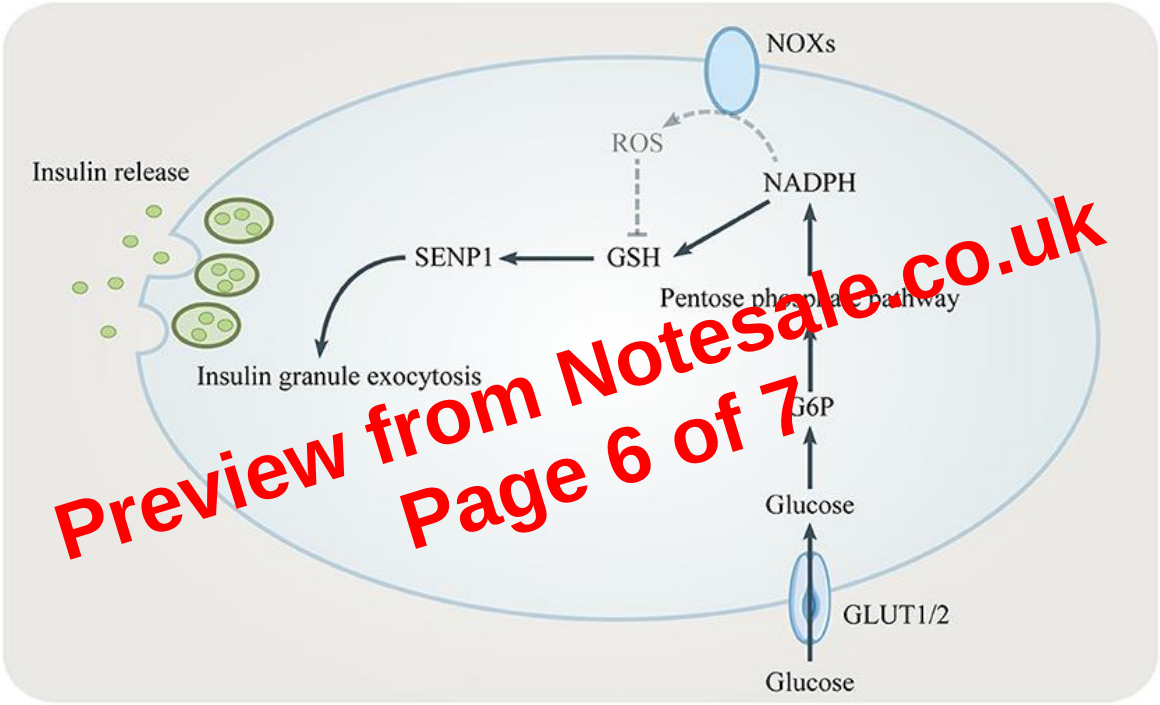
- **Function depends on the cell's needs:**

1. Creation of ribose 5-phosphate from ribulose 5-phosphate (used for nucleotide synthesis)
2. Create sugars that can be exchanged between the pentose phosphate pathway and glycolysis

- **Main reactions include:**

1. Ribulose 5-phosphate ⇄ ribose 5-phosphate (isomerization reaction) via ribose 5-phosphate isomerase
2. Ribulose 5-phosphate ⇄ xylulose 5-phosphate (epimerization reaction) via ribulose 5-phosphate epimerase (phosphopentose epimerase)
3. Ribose 5-phosphate + xylulose 5-phosphate ⇄ fructose 6-phosphate + glyceraldehyde 3-phosphate via transketolase (requires thiamine pyrophosphate) and transaldolase



- **<u>Glycogenolysis</u> :**

Glycogenolysis and Gluconeogenesis are two different types of mechanisms that raise blood glucose levels.

The major points of differences between glycogenolysis and gluconeogenesis are as follows:

1. Glycogenolysis is the breakdown of glycogen occurring in the liver when blood glucose levels drop, whereas gluconeogenesis is the synthesis of glucose from non-