Introduction

• Alternative route for the metabolism of glucose
• Also known as Hexose Monophosphate (HMP) shunt
• More complex pathway than glycolysis
• It helps in
  – formation of NADPH for synthesis of fatty acids, steroids,
  – maintaining reduced glutathione for antioxidant activity
  – synthesis of ribose for nucleotide and nucleic acid formation
CLINICAL ASPECTS

• Genetic defects of glucose-6-phosphate dehydrogenase
• Impairment of the generation of NADPH - X chromosome
• Mediterranean and Afro-Caribbean origin
• Red cell hemolysis (hemolytic anemia)
• Subjected to oxidative stress
  – Infection
  – Drugs such as the antimalarial primaquine, and sulfonamides
  – Fava beans - favism