G6PD Genotyping Algorithm for Therapeutic Drug Recommendations

G6PD / Glucose-6-Phosphate Dehydrogenase (G6PD) Full Gene Sequencing*

Male (hemizygous)
- WHO Class I Variant†
  ■ Positive
  ■ Deficient with CNSHA phenotype

Female (heterozygous)
- WHO Class I/II/III Variant†
  ■ Positive
  ■ Deficient with CNSHA phenotype

Female (homozygous/compound heterozygous)
- WHO Class IV and I, II, or III Variants†
  ■ Normal

Female (heterozygous)
- WHO Class IV and I, II, or III Variants†
  ■ Indeterminate phenotype

Indeterminate-G6PD enzyme assay needed
Order: G6PD / Glucose-6-Phosphate Dehydrogenase (G-6-PD), Quantitative, Erythrocytes

<60% G6PD activity
symptomatic G6PD deficiency carrier

>60% G6PD activity
unaffected G6PD deficiency carrier

G6PD Deficiency Diagnosis
- Therapeutic Recommendation:
  Contraindication for drugs associated with hemolytic anemia in G6PD-deficient patients
  See: Pharmacogenomic Associations Tables

G6PD Normal
- Therapeutic Recommendation:
  No G6PD-related contraindication of drugs/compounds

CNSHA: Congenital nonspherocytic hemolytic anemia

*Variants of Uncertain (VUS) significance may be identified. If a VUS is identified, a WHO Class will not be assigned and enzyme studies are recommended.

†WHO Class I Variant: Severe G6PD enzyme deficiency (<10% activity) and chronic nonspherocytic hemolytic anemia (CNSHA)
WHO Class II/III Variant: Deficient G6PD enzyme activity (10%-60% activity)
WHO Class IV Variant: Normal G6PD enzyme activity