DID YOU KNOW?

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Understanding G6PD Deficiency

Background[1,2]

Glucose-6-Phosphate-Dehydrogenase (G6PD) Deficiency is the most common inherited genetic condition, affecting over 5% of the world's population. For people with G6PD deficiency, slight changes or "mutations" in the G6PD enzyme results in the destruction of red blood cells when exposed to infection or inciting substances. As **red blood cells (RBCs)** are responsible for transporting oxygen throughout the body, their breakdown can leave individuals feeling short of breath, lightheaded and fatigued.

Signs and Symptoms[2]

G6PD deficiency is an often overlooked condition, as most people are generally asymptomatic until a reaction is provoked. However, once the breakdown of RBCs begins, individuals may start to display one or more of the following signs and symptoms:

- Jaundice (yellowing of the skin and eyes)
- Pallor (pale skin color)
- Shortness of breath
- Fatigue
- Dark urine
- Rapid heart rate
- Dizziness or lightheadedness
- Back or abdominal pain

Treatment[3,4]

Naturally, the body creates new RBCs in response to low oxygen levels. This holds true for individuals with G6PD deficiency, with management primarily focusing on the avoidance of inciting substances known to induce RBC breakdown. These substances, or often referred to as "triggers," can include foods such as fava beans, commercial products like hair dye, and frequently prescribed urinary anti-infectives including nitrofurantoin.

Though no definitive list of medications to avoid in G6PD deficiency has been established, professional organizations such as the Clinical Pharmacogenetics Implementation Consortium (CPIC), have identified medications that are "probably safe" and "likely unsafe" based on available scientific evidence. Example medications and their probability to trigger G6PD reactions have been highlighted in the table below for reference.

Medications that are ...	
Probably safe	**Likely unsafe**
✓ Ascorbic acid (Vitamin C)	× Dabrafenib (Taflinar®)
✓ Ciprofloxacin (Cipro®)	× Dapsone
✓ Diphenhydramine (Benadryl®)	× Glimepiride (Amaryl®)
✓ Hydroxychloroquine (Plaquenil®)	× Glipizide (Glucotrol®)
✓ Ofloxacin	× Glyburide (Glynase®)
✓ Phytonadione (Vitamin K)	× Methylene Blue (ProvayBlue®)
✓ Quinidine	× Nitrofurantoin (Macrobid®)
✓ Sulfadiazine	× Pegloticase (Krystexxa®)
✓ Sulfamethoxazole (Bactrim®)	× Phenazopyridine (Pyridium®)

References

1. G6PD Deficiency Foundation. "G6PD Fast Facts." 2025.
2. G6PD Deficiency Foundation. "What is G6PD Deficiency?" 2025.
3. Glader, B. "Glucose-6-phosphate dehydrogenase (G6PD) deficiency." Wolter's Kluwer; UpToDate. January 2026.
4. Gammal, R., Pirmohamd, M., et al. Guideline for Medication Use in the Context of G6PD Genotype. Clinical Pharmacogenetics Implementation Consortium. August 2022.