

Drug Interaction Reasoning with CoT

Interaction Types

- Pharmacokinetic (absorption, metabolism)
- Pharmacodynamic (additive, antagonistic)
- Disease-drug interactions
- Food-drug interactions

Reasoning Steps

- Identify all medications
- Check known interactions
- Assess severity and mechanism
- Plan dose adjustment or alternative

Example: Warfarin Interactions

Patient on: Warfarin 5mg daily (INR target 2-3)

New Rx: Azithromycin for pneumonia

Reasoning: Azithromycin inhibits CYP3A4 → ↑ warfarin levels → ↑ bleeding risk

Action: Use alternative antibiotic (amoxicillin) OR ↓ warfarin dose + close INR monitoring

Safety First: CoT catches potential harms before they occur