

Quantum Computing in Biomedicine



Quantum Principles

- Superposition and entanglement
- Quantum gates and qubits
- Exponential speedup potential

Drug Discovery Applications

- Molecular simulations
- Chemical reaction modeling
- Target identification optimization

Protein Folding

- Complex structure prediction
- Energy landscape exploration
- Disease mechanism insights

Optimization Problems

- Treatment planning
- Clinical trial design
- Resource allocation

Timeline Expectations: Practical biomedical applications expected in 5-10 years as error correction improves