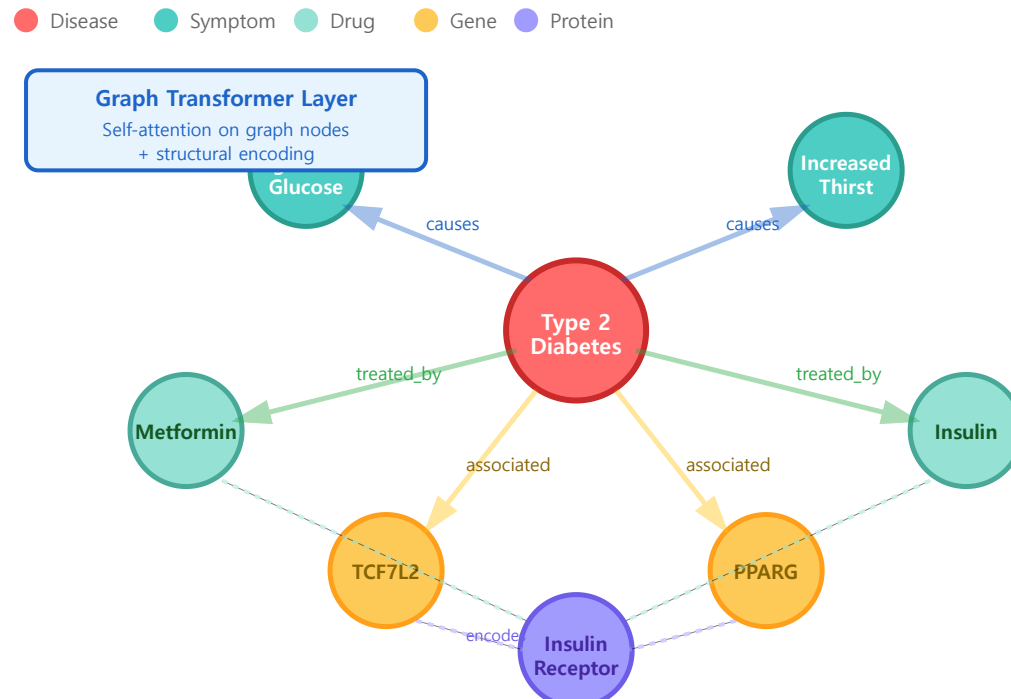# Graph Transformers for Medical Relationship Modeling

Medical Knowledge Graph Example

Graph Structure
- Nodes: entities (diseases, genes)
- Edges: relationships
- Message passing learning

Transformer on Graphs
- Self-attention mechanism
- Structural position encoding
- Long-range dependencies

Applications
- Drug repurposing
- Comorbidity prediction
- Biomarker discovery

Knowledge Graphs
- Disease-symptom networks
- Drug-protein interactions
- Gene regulatory pathways

🕸 Relational Intelligence

Graph Transformers excel at modeling complex medical relationships, achieving **25-40% better performance** on tasks involving entity interactions compared to sequence-based models.