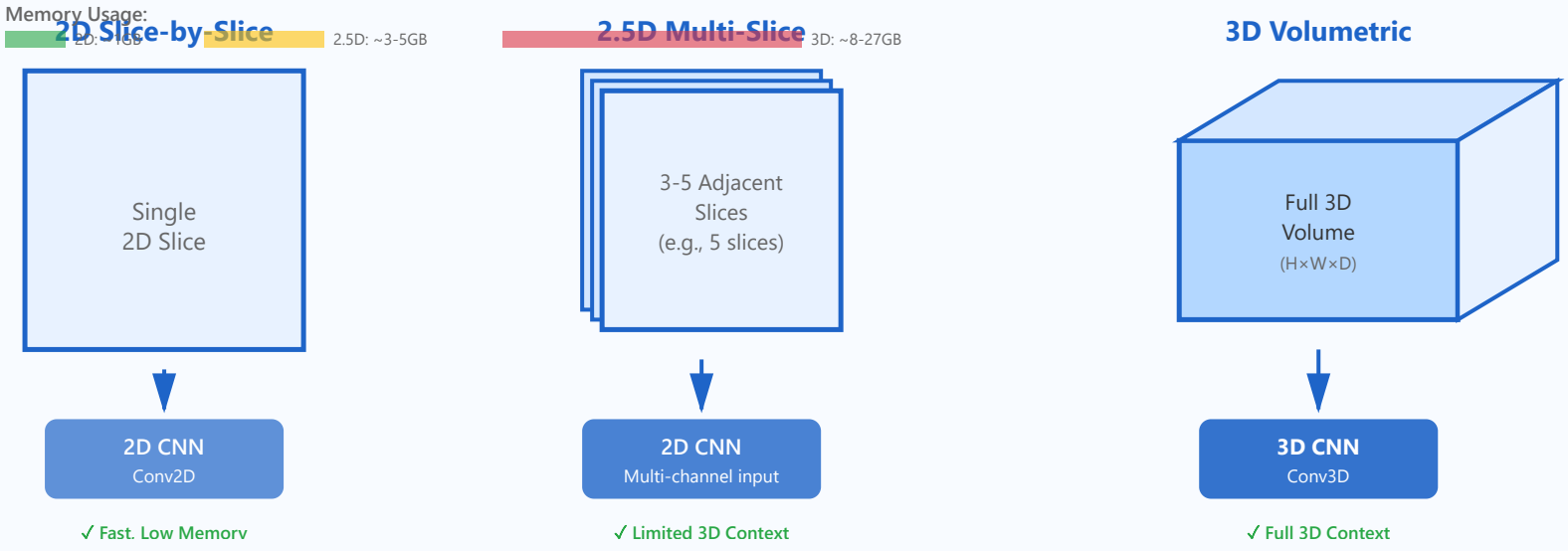
3D Medical Imaging

2D vs 2.5D vs 3D Approaches



2.5D vs 3D Approaches

2.5D: Multi-slice input. 3D: Full volumetric processing. Tradeoffs in memory and context

Memory Constraints

3D convolutions require 8-27x more memory. Careful batch size and patch size selection

Patch-Based Methods

Process small overlapping 3D patches. Enables processing of large volumes

Sliding Window

Inference strategy for large volumes. Overlapping predictions with smoothing

Volumetric Networks

3D ResNet, V-Net, 3D U-Net. Leverage full 3D context for better accuracy