

# Transfer Learning

## ImageNet Pretraining

Large-scale pretraining on natural images. Features transfer surprisingly well to medical domain

## Fine-tuning Strategies

Full fine-tuning vs. feature extraction. Layer-wise learning rate scheduling for optimal transfer

## Domain Adaptation

Techniques to bridge domain gap between natural and medical images. Adversarial and statistical methods

## Medical Pretraining

Self-supervised learning on medical data. Models like MedCLIP and BioViL trained on radiology reports

## Few-shot Learning

Learning from limited labeled data. Meta-learning and prototypical networks for rare diseases