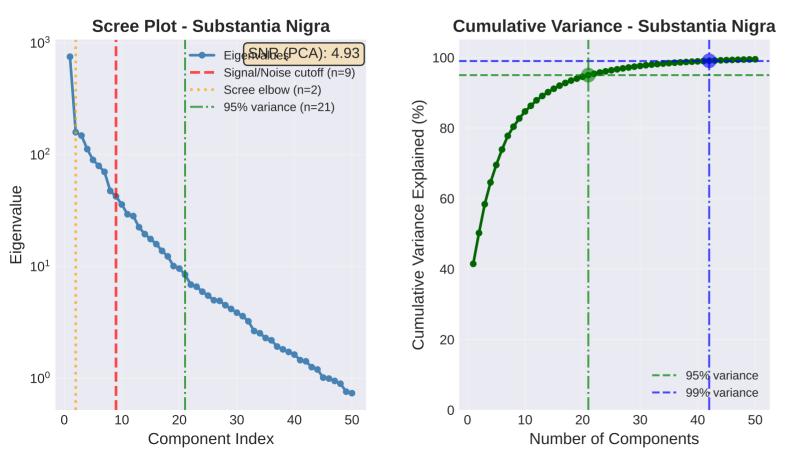
Signal-to-Noise Ratio Analysis - Substantia Nigra



```
SNR Analysis Summary
Signal Quality:
  Moderate (SNR 3-10): Adequate signal, moderate noise
SNR Estimates:
  PCA-based: 4.93
  Variance-based: 0.00
Effective Dimensionality:
  95% variance: 21 PCs
  99% variance: 42 PCs
  Scree elbow: 2
Recommendations:
  K range: 2-2 (moderate signal)
  Prior strength:
    MODERATE priors (SNR 2-5): Use \tau_0 floor (current: 0.3)
Convergence:
  MODERATE: May need longer chains or stronger priors
```