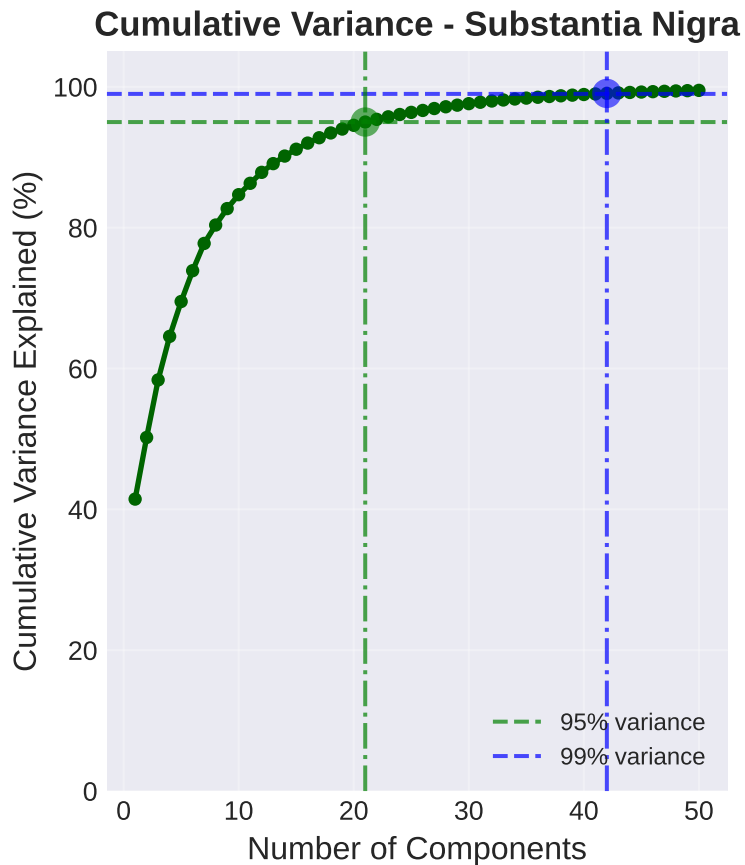
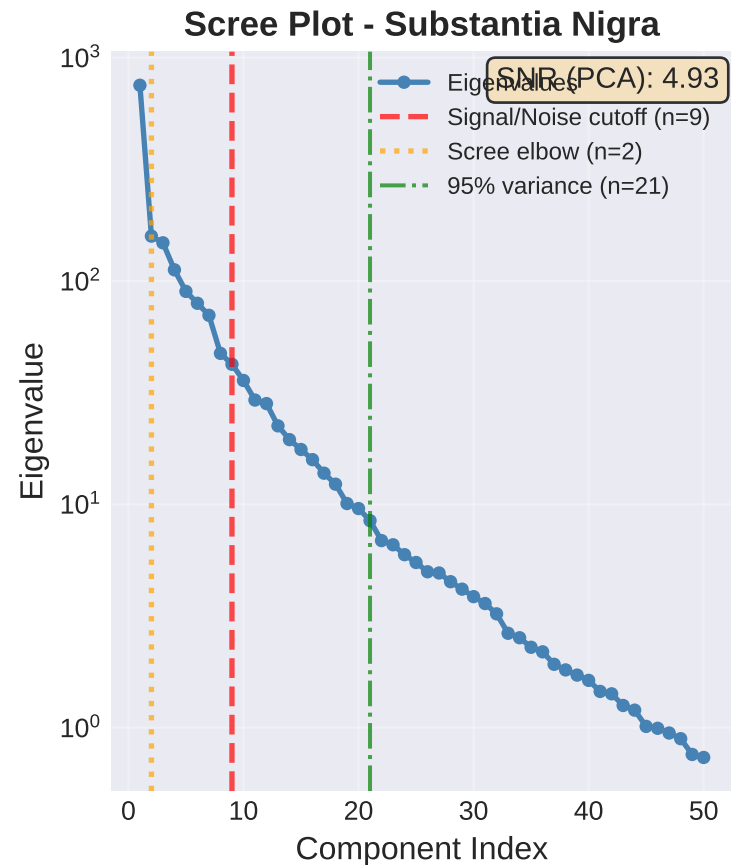


# Signal-to-Noise Ratio Analysis - Substantia Nigra



SNR Analysis Summary

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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