Fig3. Methods pipeline: 12 domestic cats (6 hearing, 6 perinatally deafened) were scanned using 7T MRI. Data included diffusion-weighted imaging (DWI) for white matter tract reconstruction and T1-weighted MP2RAGE for anatomical reference. Structural connectomes were reconstructed and analyzed with network control theory to assess differences in energy efficiency between groups.

MRI Acquisition
(DWI + T1)

Preprocessing
Brain Extraction - Distortion Correction - Atlas Alignment

Connectome Extraction
Probabilistic Tractography (160×160)

Network Control Theory
Energy Calculation

Group Comparison
Deaf vs Hearing