

Brodmann Areas – Ordered Summary

Area 4 – Primary Motor Area

Located in the precentral gyrus and anterior part of the paracentral lobule.

Controls motor functions mainly on the opposite side of the body.

Body representation is upside down (motor homunculus).

Lesion results in contralateral hemiplegia (UMNL).

Area 6 – Premotor Area

Located anterior to the precentral gyrus.

Origin of extrapyramidal fibers.

Controls complex movements.

Damage causes apraxia with intact strength.

Area 8 – Frontal Eye Field

Located anterior to the premotor cortex.

Controls voluntary eye movements.

Lesion causes inability to move eyes to the contralateral side.

Areas 9, 10, 11, 12 – Prefrontal Areas

Located in the most anterior part of the frontal lobe.

Responsible for planning, thinking, memory, emotions, behavior, mood, and judgment.

Lesions cause frontal lobe syndrome.

Areas 44 & 45 – Broca's Area

Located in the inferior frontal gyrus of the dominant hemisphere.

Responsible for motor speech and language production.

Lesion causes motor aphasia.

Writing Area (Exner's Area)

Located in the middle frontal gyrus.

Responsible for written expression.

Lesion causes agraphia.

Areas 1, 2, 3 – Primary Somatosensory Area

Located in the postcentral gyrus.

Receives sensations from the opposite side of the body.

Lesion causes contralateral loss of sensation.

Areas 5 & 7 – Secondary Sensory Area

Located in the superior parietal gyrus.

Responsible for stereognosis and object recognition by touch.

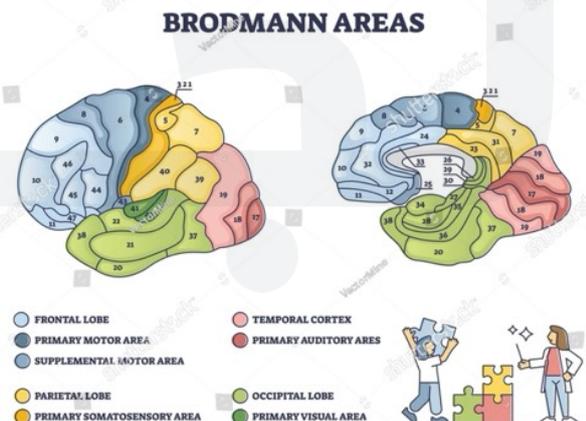
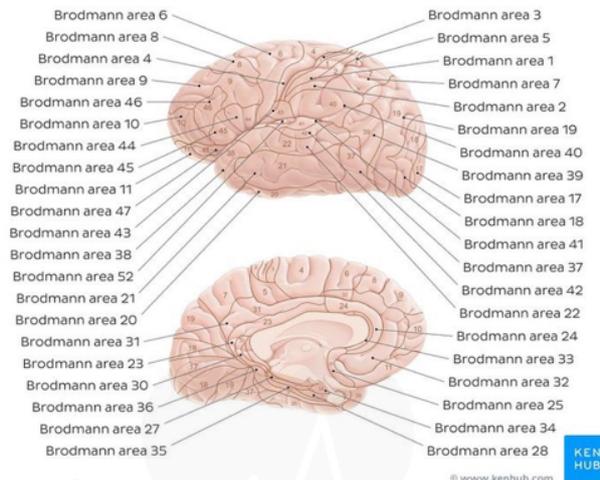
Lesion causes astereognosis.

Areas 39 & 40 – Wernicke's Area

Located in the superior temporal gyrus extending to angular and supramarginal gyri.

Responsible for language comprehension.

Lesion causes sensory aphasia with fluent but meaningless speech.



Area 39 – Angular Gyrus

Gyrus around the posterior end of the superior temporal sulcus.

Area 40 – Supramarginal Gyrus

Gyrus around the posterior end of the lateral sulcus.

Areas 41 & 42 – Primary Auditory Area

Located in Heschl's gyrus.
Receives auditory input from medial geniculate body.
Lesion causes diminished hearing.

Area 22 – Auditory Association Area

Responsible for interpretation of sounds.

Area 43 – Gustatory Area

Located in the insula.
Responsible for taste sensation.

Area 17 – Primary Visual Area

Located in the depth of the calcarine sulcus.
Damage causes blindness.

Areas 18 & 19 – Secondary Visual Areas

Responsible for visual interpretation.
Damage causes visual agnosia.

Paracentral Lobule

Continuation of motor and sensory areas.
Controls pelvis, lower limb, micturition, and defecation.

