

Regional brain syndromes

1. frontal lobe

a) unilateral injury:

- may produce few clinical findings except with very large lesions
- bilateral or large unilateral lesions: apathy, abulia
- the frontal eye field (for contralateral gaze) is located in the posterior frontal lobe

Destructive lesions impair gaze to the contralateral side (patient looks towards the side of the lesion), whereas irritative lesions (i.e., seizures) cause the center to activate, producing contralateral gaze (patient looks away from the side of the lesion). See also the Extraocular muscle (EOM) system for more details.

b) bilateral injury: may produce apathy, abulia

c) [olfactory groove](#) region: may produce [Foster Kennedy syndrome](#)

d) prefrontal lobes control “[executive function](#)”: [Planning](#), [prioritizing](#), organizing [thoughts](#), suppressing impulses, understanding the consequences of [decisions](#)

2. [parietal lobe](#): major features

a) either side: cortical sensory syndrome, sensory extinction, contralateral homonymous hemianopia, contralateral neglect

b) dominant parietal lobe lesion (left in most): language disorders (aphasia), Gerstmann’s syndrome , bilateral astereognosis

c) non-dominant parietal lobe lesions: topographic [memory loss](#), [anosognosia](#), and dressing apraxia

3. [occipital lobe](#): [homonymous hemianopsia](#)

4. [cerebellum](#)

a) lesions of the [cerebellar hemisphere](#) cause [ataxia](#) in the ipsilateral limbs

b) lesions of the cerebellar [vermis](#) cause [truncal ataxia](#)

5. brainstem: usually produces a mixture of cranial nerve deficits and long tract findings

6. [pineal region](#)

a) [Parinaud’s syndrome](#)

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