Dominant hemisphere

see Hemispheric Dominance

The dominant hemisphere refers to the side of the brain primarily responsible for certain higher-order functions, particularly language and fine motor skills. In most individuals, the left hemisphere is dominant, but this can vary based on handedness and individual differences.

Key Functions of the Dominant Hemisphere: Language and Communication:

Speech production (Broca's area) Language comprehension (Wernicke's area) Reading and writing Fine Motor Control:

Skilled motor movements, especially in the dominant hand Logical and Analytical Thinking:

Mathematics, reasoning, and problem-solving Memory Related to Language:

Verbal memory and sequential processing Determining Dominance: The left hemisphere is dominant in about: 95% of right-handed individuals 70% of left-handed individuals The right hemisphere is dominant for language in a smaller proportion of left-handed individuals or those with atypical brain organization. Clinical Relevance: Stroke or Brain Injury: Damage to the dominant hemisphere often leads to significant deficits in language (aphasia) and fine motor skills. Epilepsy and Brain Surgery: Pre-surgical evaluations (e.g., Wada test, functional MRI) help identify the dominant hemisphere to preserve critical functions. Hemispheric Specialization: While the dominant hemisphere handles structured and logical tasks, the non-dominant hemisphere typically governs spatial awareness, creativity, and emotional processing.