Memory Recall

Definition: Memory recall is the **mental process of retrieving information** previously encoded and stored in the brain. It involves reactivation of neural patterns associated with past experiences, thoughts, or learned material.

Types of Recall

- **Free Recall**: Retrieving information without cues (e.g., recalling a list of words).
- **Cued Recall**: Retrieval triggered by associated prompts (e.g., seeing a photo and remembering the context).
- **Serial Recall**: Remembering items in the order in which they were presented.
- **Recognition vs. Recall**: Unlike *recognition*, recall does not involve identifying something as familiar—it requires *actively bringing it to mind*.

Neural Basis

- Primarily involves the **hippocampus** and **medial temporal lobe** for episodic memory.
- The **prefrontal cortex** helps with retrieval strategies and suppression of irrelevant memories.
- **Neural oscillations**, such as theta and ripple-like activity, are often observed during recall processes.

Key Features

- **Constructive**: Recall is not a perfect reproduction but a reconstruction, influenced by current context and prior knowledge.
- **Fallible**: Susceptible to distortion, interference, and false memories.
- **Modulated by Emotion**: Emotional arousal can enhance or impair memory recall depending on context.

Clinical Relevance

- Impaired in conditions like **Alzheimer’s disease**, **traumatic brain injury**, and **amnesia**.
- Often evaluated in **neuropsychological testing** (e.g., Rey Auditory Verbal Learning Test, word lists, story recall).

Example

> When watching a movie scene that you’ve seen before, your brain may spontaneously **recall** the ending, activating neural networks originally involved in encoding that scene.