



# Language Plasticity

## Quick recap

The meeting began with introductions and small talk, including discussions about data extraction formatting and a geographic map showing YSG member distribution. The main portion featured presentations by Dr. Preeti and Erin on aphasia and language issues related to stroke recovery, including explanations of assessment tools, brain language dominance, and potential recovery methods through therapy and exercise. The conversation ended with discussions about speech exercises and supplements, followed by the setup of a post-survey and Slack channel for community engagement.

## Summary

### Stroke Recovery and Language Plasticity

The meeting began with Susan introducing a survey about language plasticity and stroke recovery, which participants completed. Kimia then introduced the main speakers, Dr. Preeti and Erin, who are experts in stroke rehabilitation. Erin presented on aphasia and language issues related to brain injury and stroke, sharing her expertise as a board-certified speech-language pathologist. The presentation was well-received, and participants were encouraged to ask questions.

### Understanding Aphasia Assessment Tools

Erin explained that aphasia is an interruption in language function that primarily affects word retrieval and can impact various communication modalities, including speaking, writing, and understanding. She described the role of a speech therapist as evaluating and assessing language strengths and areas for intervention using formal assessments like the Western Aphasia



Battery and the Boston Naming Test. Layli inquired about the use of a specific assessment tool called the Modern Cookie Theft picture task. It is a 90-second picture description task that allows the speech therapist to analyze the patient's language sample for number of content units, syllables, and overall efficiency of language production. Erin clarified that it is typically used initially to diagnose aphasia and may be repeated periodically to monitor progress, though it can also be used informally for speech samples.

## **Language Recovery and Brain Wiring**

Erin explained that language dominance in the brain is determined by wiring, noting that left-handed individuals might have language in the right hemisphere. She discussed the potential for aphasia recovery through therapy, even after a long time post-stroke, and mentioned a study at Hopkins using low current stimulation for word finding. Preeti added that regular practice and increased blood flow through exercise can improve language functions.

## **Speech Exercises and Supplements Discussion**

The group discussed speech exercises and supplements. Layli suggested exercising while talking to improve speech, while Lisa shared that exercise hasn't helped her speech issues. Josh inquired about creatine's potential benefits for cognition, which Preeti said she would research further. The conversation concluded with Layli asking about language plasticity, which Preeti explained as the brain's ability to change, clarifying that neuroplasticity and language plasticity are not separate concepts.

## **Stroke and Language Recovery Insights**

The group discussed language and speech impairments following strokes, with Beth sharing her experience of dysarthria after a cerebellar stroke and asking questions about language processing. Erin explained that while aphasia



primarily affects language production, the cerebellum's connection to language centers could explain Beth's observations. The discussion also covered multilingualism after stroke, with Erin noting that the primary language tends to be more resilient, and Aaron shared his experience of learning Spanish and Japanese post-stroke, prompting Erin to discuss the role of neuroplasticity and stroke location in language recovery.

## **Speech Improvement Strategies Discussion**

Erin and Preeti discussed strategies for improving speech, with Erin suggesting that speaking intentionally and engaging muscles through regular conversation can be beneficial. Preeti introduced the idea of high-intensity speech therapy programs and taking acting classes as additional ways to challenge and improve speech skills.

## **Post-Survey and Slack Channel Setup**

The meeting focused on setting up a post-survey and a Slack channel for community engagement. Susan announced the launch of a poll with six questions, which 20 out of 22 participants answered. She instructed everyone to join the Slack channel for further communication, with Kimia offering assistance to those without access. Erin and Preeti were asked to monitor the Slack channel for questions from those unable to attend the meeting, or who could not talk but could read and write.