

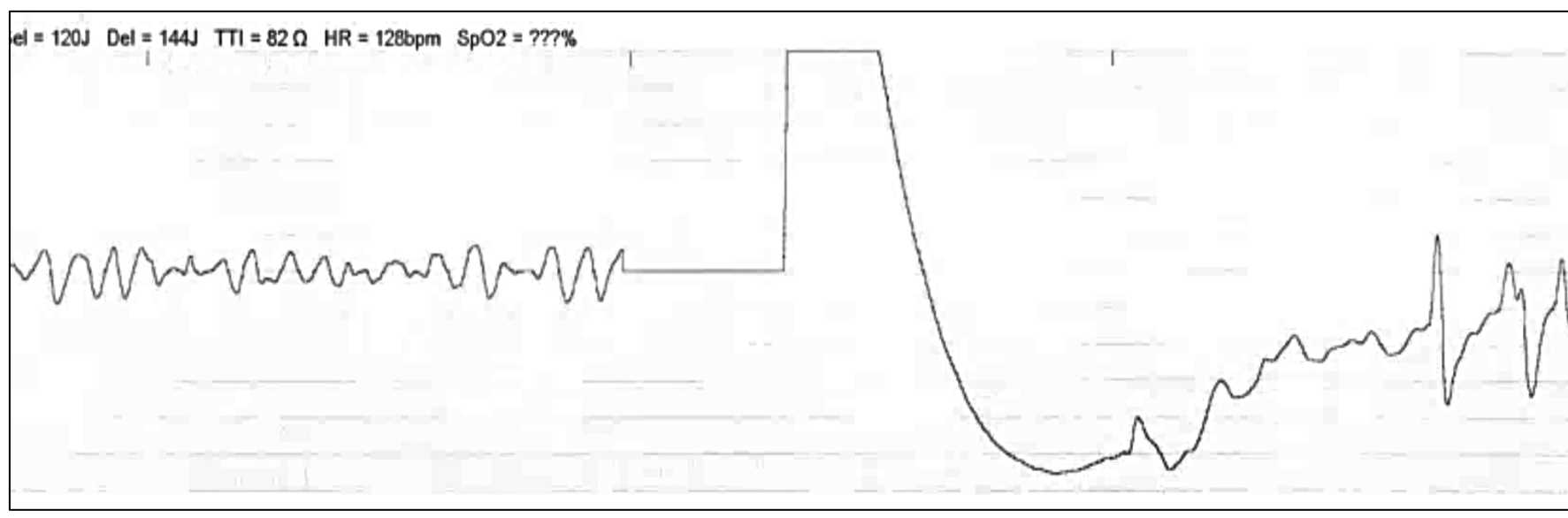


# Gerstmann Syndrome Following Hypoxic Brain Injury : A Case Report

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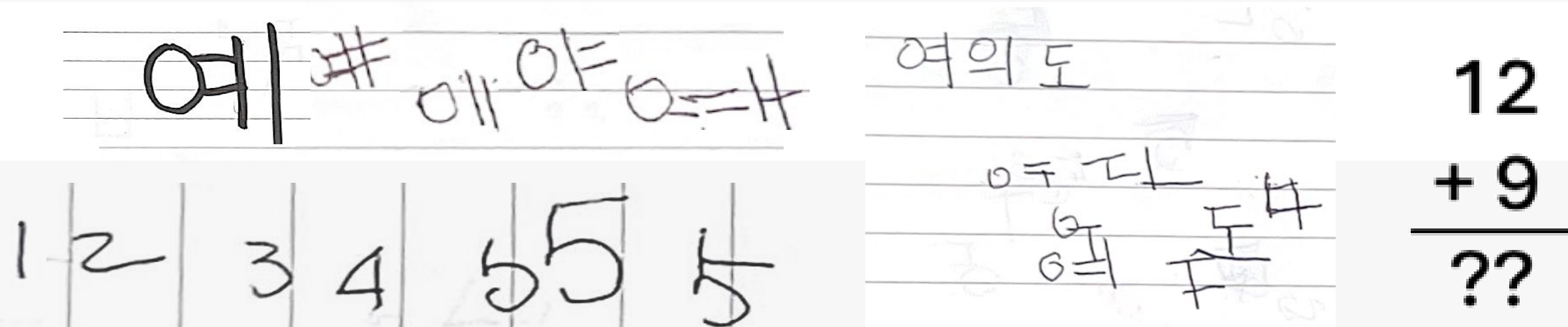
## Patient's Medical History and Clinical Manifestations

- 45-year-old male, **university professor**, right-handed
- Cardiac arrest due to **ventricular fibrillation**
- Return Of Spontaneous Circulation: **CPR for 18 minutes**
- Recovered consciousness after two days



### Clinical manifestations indicating “Gerstman syndrome”

- **Right-left disorientation** Wearing shoes on the wrong feet
- **Finger agnosia** Confusion for distinguishing between his arm and leg
- **Agraphia**
- **Acalculia**



### Dementia-like

- Impaired registration
- Impaired spatial memory
- Poor learning ability

## Qualitative & Quantitative Evaluation for Hypoxic Brain Injury

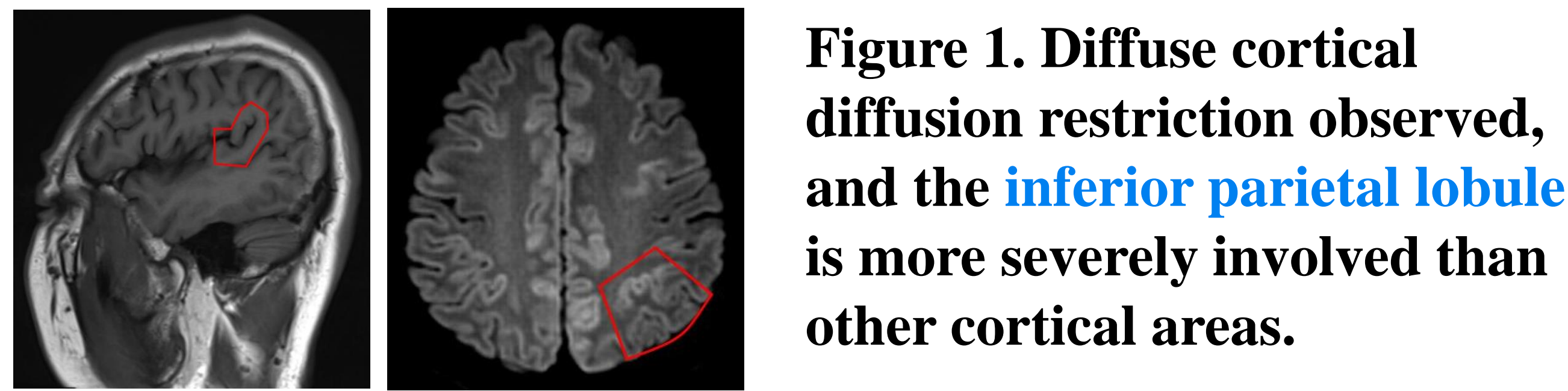


Figure 1. Diffuse cortical diffusion restriction observed, and the **inferior parietal lobule** is more severely involved than other cortical areas.

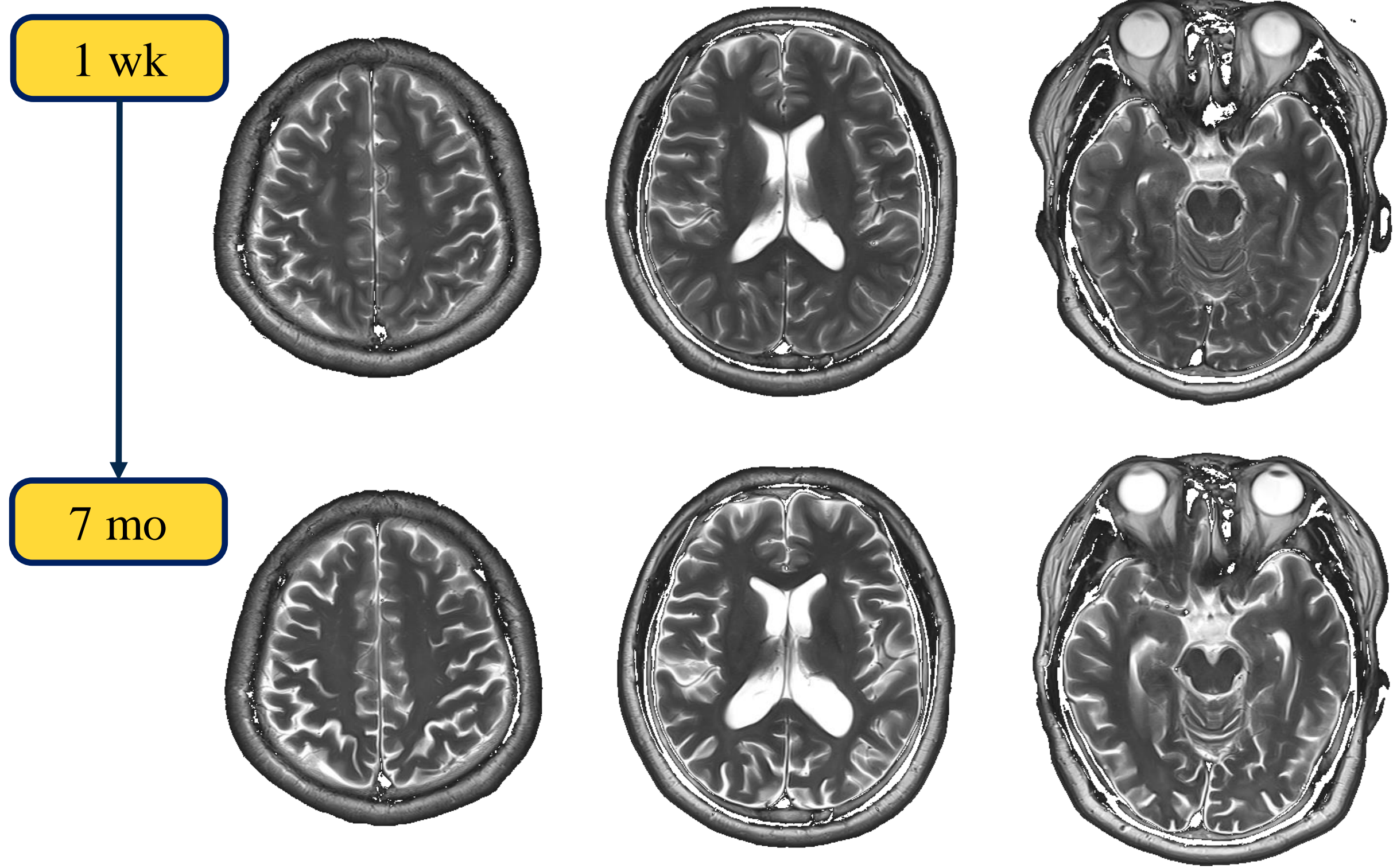


Figure 3. Progression of **cortical atrophy and white matter loss**.

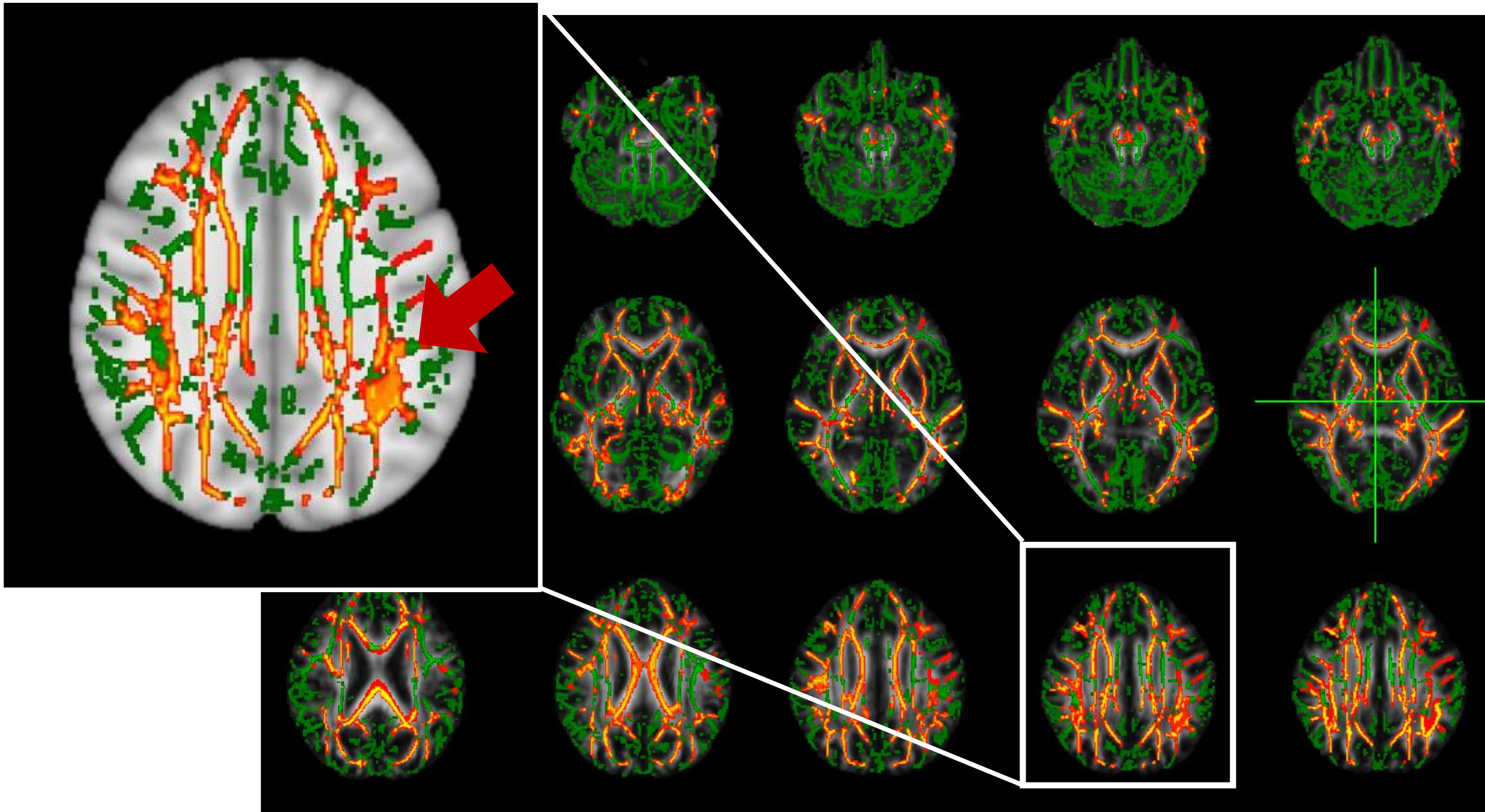


Figure 2. Tract-Based Spatial Statistics (TBSS) results comparing 10 age-matched controls. **Decreased structural integrity of the widespread white matter** structure including limbic system, visual pathways, and cerebro-cerebellar connections. The inferior parietal gyrus shows a more significant decrease in structural integrity.

## Personalized Rehabilitation Strategies

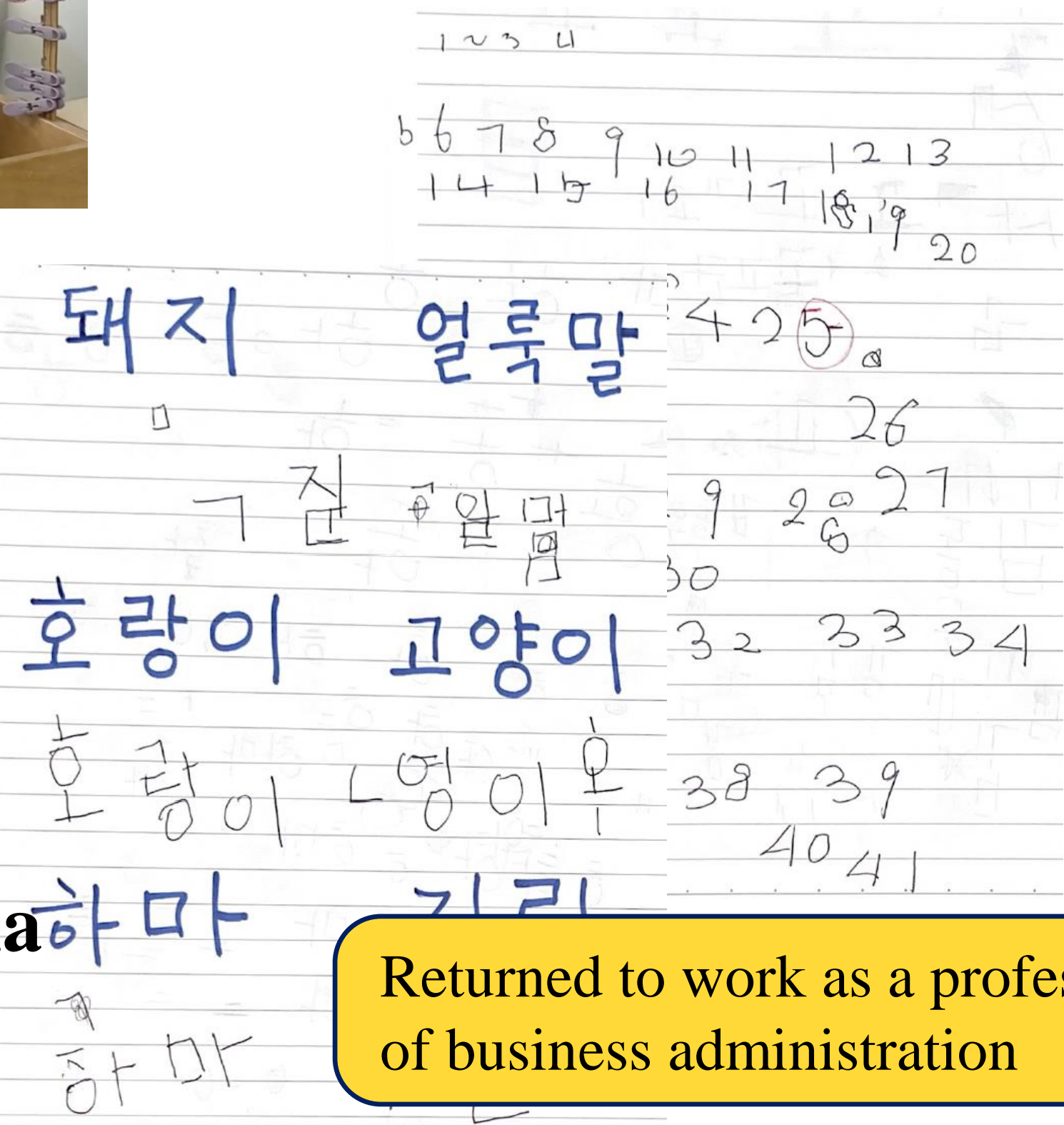
### Training for Right-Left Orientation



### Training for Visual Orientation



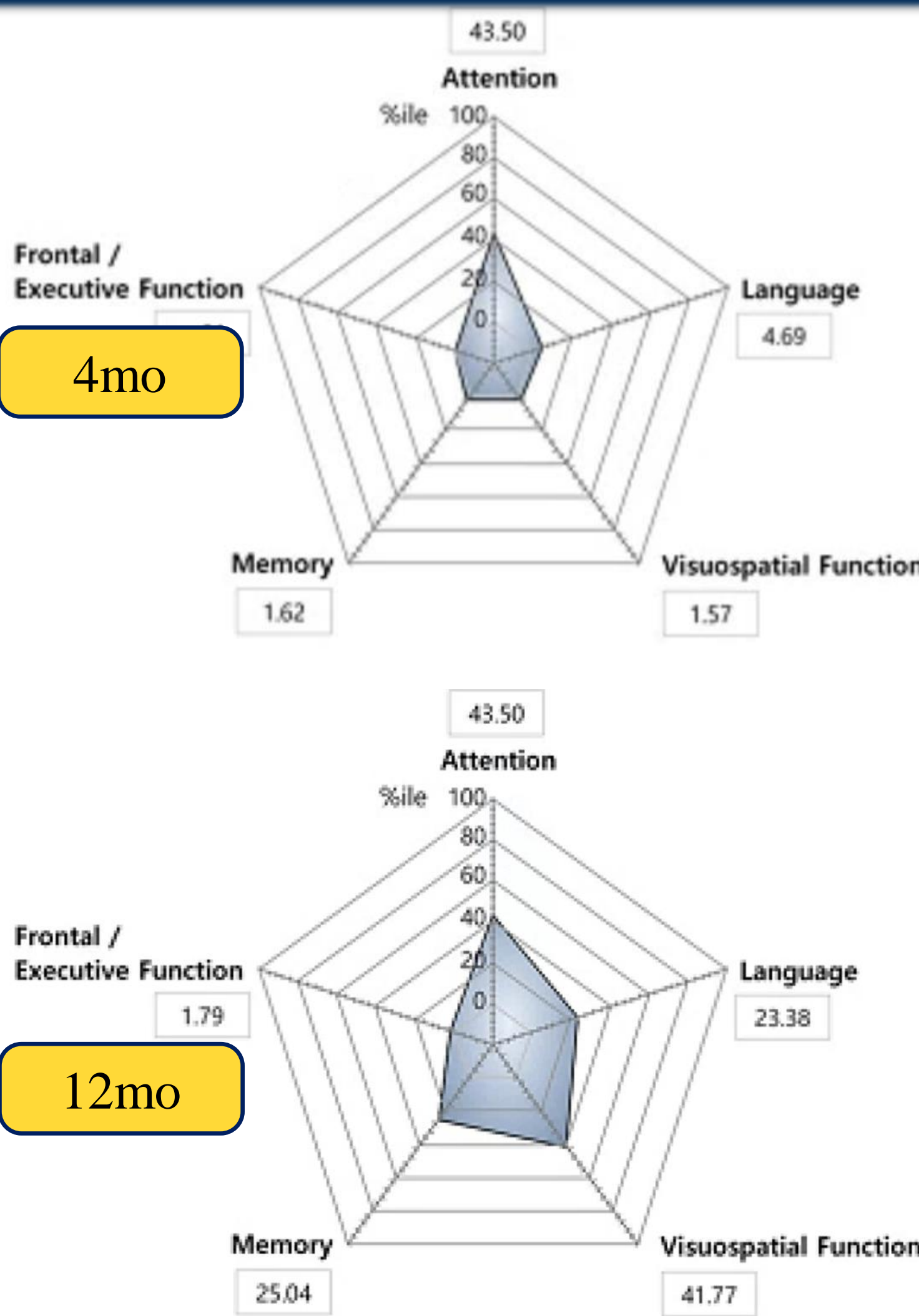
### Training for Agraphia & Acalculia



Returned to work as a professor of business administration

Inpatient rehabilitation

## Outcome Assessments



## Brief Review

- Widely accepted to occur with **damage to the dominant inferior parietal lobule** with a probable subcortical extension.
- Frequently observed in patients with **ischemic stroke, brain tumors, progressive leukoencephalopathy or epilepsy**.
- **Gerstmann syndrome following hypoxic brain injury is rare**, which may be **caused by diffuse cortical damage with severe injury to the dominant inferior parietal lobule**.