Alexia and agraphia are disorders common to the left inferior parietal lobe, including the angular gyrus and supramarginal gyrus. However, it is still unclear how these cortical regions interact with other cortical sites and what the most important white matter tracts are in relation to reading and writing processes.

Alexia with agraphia is defined as an acquired impairment affecting reading and writing ability. It can be associated with aphasia, but can also occur as an isolated entity. This impairment has classically been associated with a left angular gyrus lesion.

A case study documents the effectiveness of a multicomponent intervention for an adolescent with acquired alexia and agraphia following severe traumatic brain injury.

Initial testing revealed severe central alexia and surface agraphia with concomitant anomic aphasia. Intervention components included sight word drills, modified Multiple Oral Reading (MOR) procedures, functional reading tasks, and modified Copy and Recall Treatment. Intervention spanned 2 months with sessions 5 days per week. Data collection and analysis involved monitoring sight word decoding, reading speed and decoding errors during MOR, and spelling accuracy of Copy and Recall Treatment words. Follow-up testing occurred at intervention conclusion. Results Sight word mastery for 315 words progressed from 66.35% to 100% over 5 weeks and was maintained thereafter. MOR materials progressed from Grade 1 to Grade 5. Initial reading speed was 31 words per minute with errors on 15% of words. At program completion, reading speed was 47 words per minute with 7% decoding errors despite increased difficulty of reading material. The participant demonstrated initial mastery of 15 spelling lists containing 15 words each and sustained mastery (2 additional consecutive weeks of 100% accuracy) of 8 lists. Follow-up assessment revealed improvements consistent with 3-4 grade levels but persistent impairment relative to premorbid functioning. Conclusion The multicomponent program was effective in promoting substantial improvement, although surface alexia and agraphia persisted after 2 months of treatment. The case provides an example of the type and extent of progress possible given minimal initial recovery but systematic intervention within the context of intensive postacute rehabilitation ¹⁾.

1)

Hux K, Mahrt T. Alexia and Agraphia Intervention Following Traumatic Brain Injury: A Single Case Study. Am J Speech Lang Pathol. 2019 Jun 13:1-15. doi: 10.1044/2019_AJSLP-18-0245. [Epub ahead of print] PubMed PMID: 31194917.

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