

# 24 - Disorders of reading and writing

## Disorders of reading and writing:

© SPMM Course Components of Language production:

1. Fluency: Production of meaningful words and sentences. Depends on intact Broca's area and its forward connections.
2. Comprehension: Understanding words and sentences spoken by others. Depends on intact Wernicke's area and its connection with association cortex and sensory input
3. Repetition: Repeating what others say. Requires no high-level processing; can take place if Broca's, Wernicke's and arcuate fasciculus are intact. It does not need relay of higher association area to either Broca's or Wernicke's.
4. Naming: Ability to use nouns especially the names of objects. Naming defects (anomia) accompanies any aphasia but in various degrees. Aphasia: This refers to a higher level 'language' problem – not sound production or manipulation error but the problem of language reception, production and processing. Aphasia is almost always organic.

Adapted from Harrison's Textbook of internal medicine; 15 e

In Broca's aphasia the speech is nonfluent; it often appears laboured with any interruptions and pauses. Function words (prepositions, conjunctions) are most affected though the good degree of meaning appropriate nouns and verbs are still produced. Abnormal word order and a characteristic agrammatism are noted. Speech is telegraphic. Harrison textbook quotes the following example: "I see...the dotor, dotor sent me...Bosson. Go to hospital. Dotor...kept me beside. Two, tee days, doctor send me home". In Wernicke's aphasia, the comprehension is impaired for both spoken and written language. Language output is fluent but is highly paraphasic, sometimes with string of neologisms and circumlocutions. Hence, it is also termed as "jargon aphasia." The speech contains large numbers of function words (e.g., prepositions, conjunctions) but few substantive nouns or verbs that refer to specific actions. The output is, therefore, voluminous but uninformative. Disorders of reading and writing: As aphasia is a disturbance of language production, reading and writing difficulties too accompany all aphasias. In addition, some disorders of isolated

reading/writing problems have been described. Type of aphasia Fluency Repetition Comprehension Naming Wernicke's sensory aphasia Intact Lost Lost Lost Broca's motor aphasia Lost Lost Intact Lost Conduction aphasia Intact Lost Intact Lost Transcortical sensory aphasia Intact Intact Lost Lost Transcortical motor aphasia Lost Intact Intact Lost

© SPMM Course o Pure word blindness (alexia): Here the patient can speak normally and comprehend what is spoken; he can also write spontaneously and to dictation, but reading comprehension is impaired. o Pure agraphia: This is an isolated inability to write while other faculties of language are preserved. It is sometimes seen as a component of Gerstmann's syndrome (parietal deficits) o Alexia with agraphia results in acquired illiteracy. o Pure word deafness: Patient can speak, read & write fluently, but comprehension is impaired only for spoken language. Bilateral (or left sided with disrupted connections to non-dominant circuit) damage to the superior temporal pole is suspected. o Pure word dumbness: Spoken language cannot be produced clearly, but the patient can comprehend language well, can read and write

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