What is Aphasia?

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What is aphasia?

- An interruption in language function, unrelated to their development, innate intelligence, or primary language [4]
  - Can impact expressive and/or receptive language
  - Speaking
  - Understanding speech
  - Reading comprehension
  - Writing
  - Gestures
  - Using numbers, letters, and shapes

What can cause aphasia?

- Most commonly caused by stroke, however can also be caused by TBI, tumor, infection, or degenerative diseases [4]
- About 1/3 (225,000) of strokes result in aphasia
- Aphasia typically occurs with Left hemisphere stroke/injury
  - ***Can occur in right hemisphere stroke/injury, as well*
  - ~5% of right handed patients can have aphasia following R CVA
  - ~56% of left handed or ambidextrous patients can have aphasia following R CVA
- There are at least 2,000,000 people in the USA with aphasia

How is Aphasia diagnosed?

- Speech Therapists can assess a patient's language function via formal (standardized) tests and informal tasks
- Standardized Aphasia assessments can be used to determine the aphasia classification, severity, treatment planning, strategies, and prognosis.
  - Western Aphasia Battery [5]
  - Boston Diagnostic [6]
  - Boston Naming

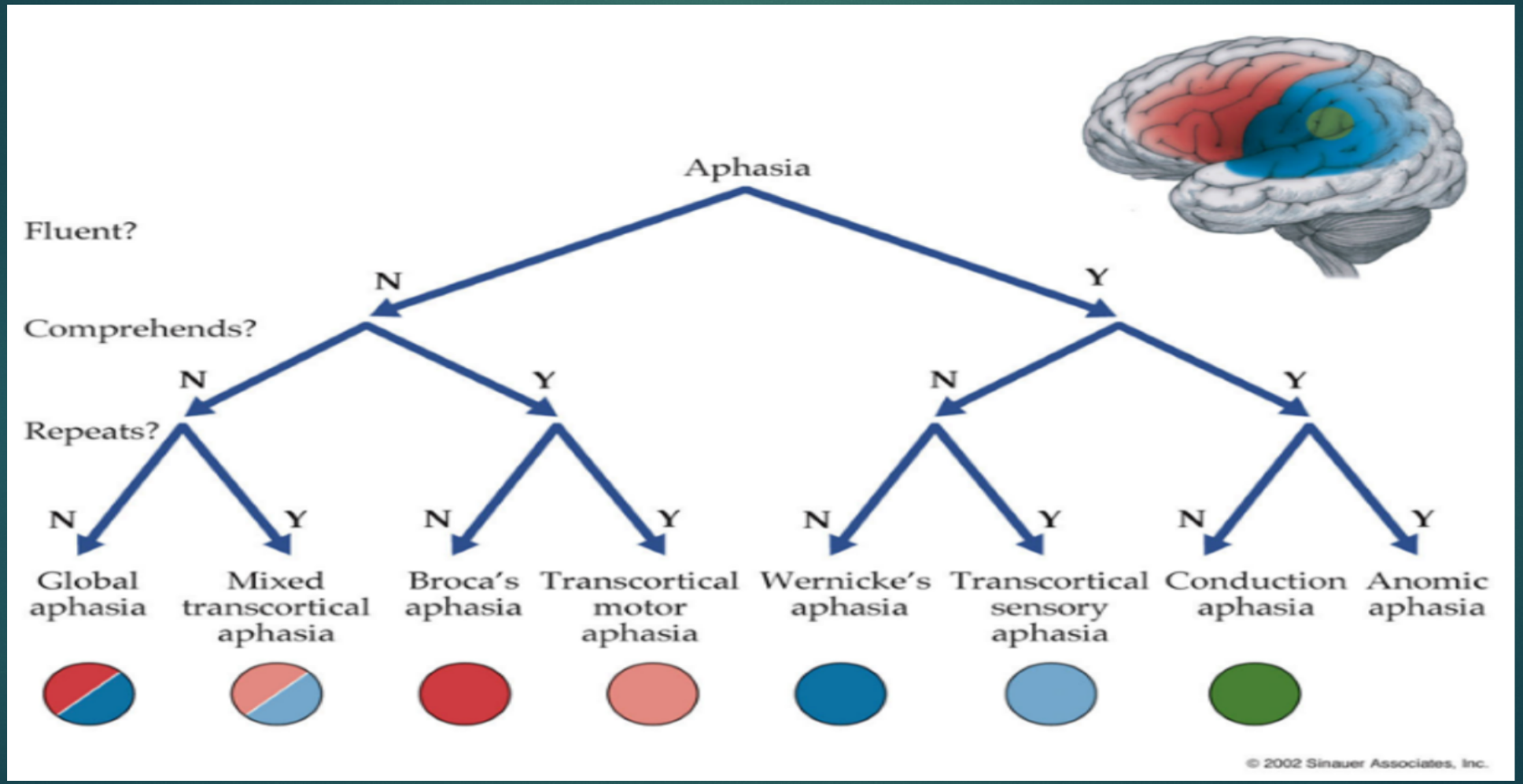
How is Aphasia diagnosed?

- Modern Cookie Theft Picture
  - Revised in 2018 [1]
  - 90-second language sample
  - Objectively scored
  - Yields a score based on a normative sample

Aphasia Classifications

- Aphasia types are viewed as vascular syndromes, "consisting of frequently associated deficits that reflect damage or dysfunction of regions of neural tissue (essential for particular language functions) supplied by a particular artery" (Hillis 2007) [2]
- There are 7 main classifications of Aphasia
- Aphasia classifications can also be ***MIXED***
- Each patient may have their own unique presentation
  - Broca's Aphasia
  - Transcortical Motor Aphasia
  - Global Aphasia
  - Anomic Aphasia
  - Wernicke's Aphasia
  - Conduction Aphasia
  - Transcortical Sensory Aphasia

Aphasia Classifications



Paraphasias:

characteristics of errors in language production

- 1. Literal or phonemic paraphasia – incorrect phonemes are substituted.
  - "spot" instead of "pot."
  - markbook" instead of "bookmark."
- 2. Verbal paraphasia – saying a completely different word than the one intended.
  - "drive" instead of "car"
  - "dog" instead of "car"
- 3. Neologistic paraphasia – more than half of a word is incorrect. Out of context, it is difficult to guess what the intended word was.
  - "camalee" for "camera.

Aphasia Classifications: Broca's Aphasia

- ***Typical* Lesion location**: left posterior inferior frontal cortex and insula. White matter tracts may also be involved
- **Fluency**: non-fluent aphasia (1-2 word utterances); poor grammatical structure to sentences
- **Comprehension**: auditory comprehension relatively reliable; impairments are likely present
- **Repetition**: poor repetition; its like their motor planning system has "gone awry"

- **Presentation**: may speak in "telegraphic" utterances; sounds and word finding errors present
- https://www.youtube.com/watch?v=JWC-cVQmEmY

Aphasia Classifications: Transcortical Motor Aphasia

- **Typical Lesion location**: Anterior or superior to Broca's area; areas supplied by the ACA
- • Supplementary motor area (SMA is often involved)
- **Fluency**: non-fluent aphasia (1-2 word utterances); poor grammatical structure to sentences
- **Comprehension**: auditory comprehension relatively reliable
- **Repetition**: good repetition of speech

- **Presentation**: may have difficulty spontaneously answering questions

Aphasia Classifications: Global Aphasia

- **Lesion location**: extensive cortical damage to areas supplied by the L MCA
  - • Large lesion spanning left frontal, parietal, and temporal lobes. Usually both Broca's and Wernicke's areas are damaged
- **Fluency**: non-fluent aphasia; very limited verbal output
- **Comprehension**: poor auditory comprehension
- **Repetition**: poor repetition

- **Presentation**: all modalities of communication are severely impaired
- https://www.youtube.com/watch?v=FUutVGeoG-k

Aphasia Classifications: Anomic Aphasia

- **Lesion location**: no specific lesion location
- **Fluency**: fluent; can speak in sentences
- **Comprehension**: better comprehension
- **Repetition**: intact repetition for words and sentences

- **Presentation**: may have frank word finding errors and anomia; language is vague or "empty"

Aphasia Classifications: Wernicke's Aphasia

- **Lesion location**: regions supplied by the inferior division of the L MCA
- **Fluency**: fluent aphasia
- **Comprehension**: poor auditory comprehension
- **Repetition**: poor repetition for words and sentences

- **Presentation**: tend to speak in tangential, jargon-filled, sentences. Usually very little insight into deficits
- https://www.youtube.com/watch?v=3oef68YabD0

Aphasia Classifications: Conduction Aphasia

- ***Typical* Lesion locations**: Heschl's Gyrus
- **Fluency**: fluent; can speak in sentences
- **Comprehension**: good comprehension; deficits are likely present
- **Repetition**: poor repetition for words and sentences

- **Presentation**: frequent phonemic errors
- https://www.youtube.com/watch?v=G94TvTvjeeU

Aphasia Classifications: Transcortical Sensory Aphasia

- **Lesion location**: regions around Wernicke's area, supplied by the L PCA
- **Fluenc**y: fluent; can speak in sentences
- **Comprehension**: better comprehension
- **Repetition**: intact repetition for words and sentences

- **Presentation**: may speak in sentences, however with word finding errors and neologisms. Often echolalic

Aphasia from the patient's perspective

- "I know what I want to say, but I cant get the words out"
- "I hear you, but I don't know what you are saying"
- "My memory is worse"
  - Memory vs word finding
- "I cant read"
- **the patient may also not have insight into their deficits**
  - More typical with Wernicke's Aphasia

What can you do to help?

- Give the patient time to express their thoughts
  - The concept of their message may be imbedded within a cluster of semantically related words
- Reword or simplify your message
  - Remember, aphasia is not a disorder if reduced intelligence, rather a breakdown in the access to and encoding of language
- Restate what you believe to be their message
- Consider using alternate modalities to communicate with patients
  - Perhaps writing your message in 1-2 words, can support breakdowns in auditory comprehension
- Don't feel that differential diagnosis of aphasia is your responsibility
  - Refer the patient to speech therapy for formal assessment, if some type of aphasia is suspected

Any questions?

References

1) Berube, B., Nonnemacher, J., & Demsky, C. et. al. (2018). Stealing cookies in the twenty first century: Measures of spoken narrative in healthy verses speakers with aphasia. American Journal of Speech and Language Pathology. 1E9. doi:10.1044/2018_AJSLPE17E0131.
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3) Dewarrat, G. et al. (2009). Acute aphasia after right hemisphere stroke. Journal of Neurology. 256:1461–1467.
4) The National Aphasia Association: www.aphasia.org/aphasia-resources/aphasia-factsheet/
5) www.pearsonclinical.com/
6) www.proedinc.com
7) www.tactustherapy.com