
NBASLH SPEECH-LANGUAGE
REVIEW COURSE
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COGNITIVE ASPECTS OF COMMUNICATION

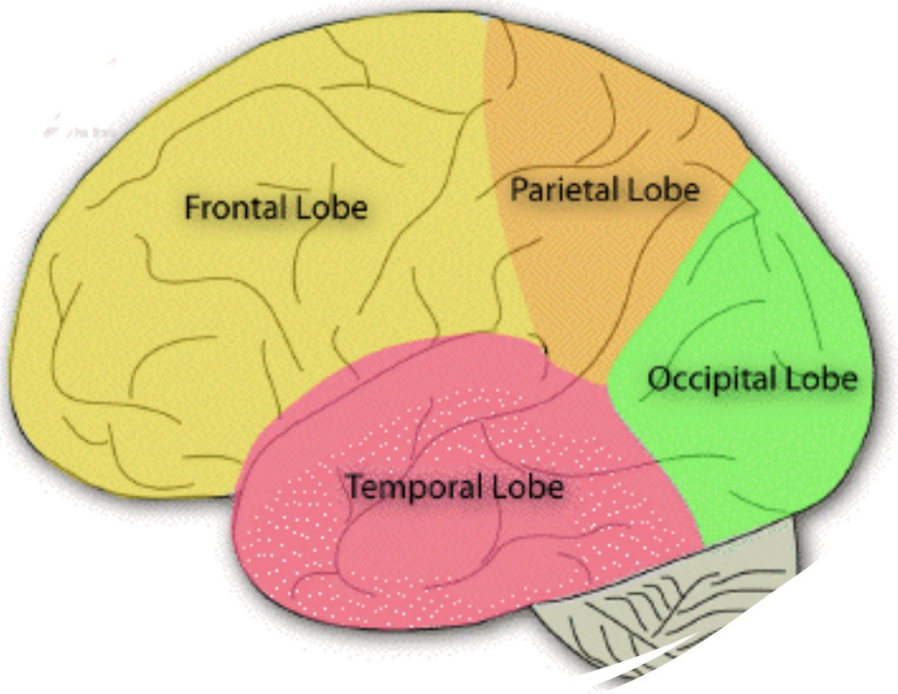
- Normal Aging
- Aphasia
- Cognitive-Linguistic Disorders
  - Traumatic Brain Injury
  - Dementias
  - Right Hemisphere Disorders
- Neuroanatomy Review
- Core Characteristics
- Assessment Tools
- Treatment
- Other

HOUSEKEEPING

- Questions anytime use chat function
- Q/A following each section
- Q/A at conclusion use microphones
- Summary of topic recommend additional review of materials

NEUROHUMOR

"When you notice yourself becoming forgetful, just give it 20 hard cranks and your memory should be sharp for a good two or three days."



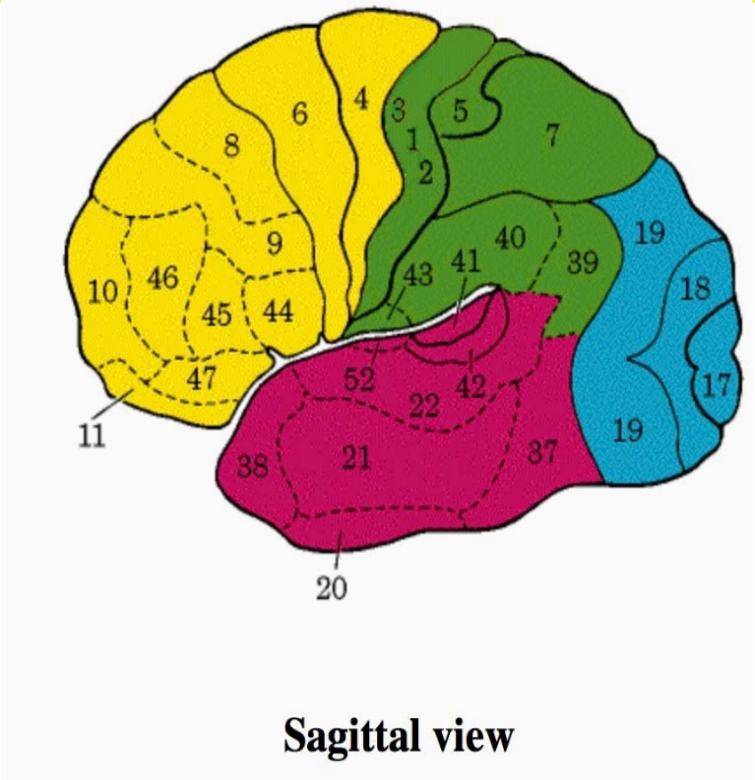
APHASIA (BRAIN BASICS)

- Frontal Lobe
- Parietal Lobe
- Temporal Lobe
- Occipital Lobe

- Retrieved from: Chapter 3 – Magnetic Resonance Imaging of Brain Function (ox.ac.uk)

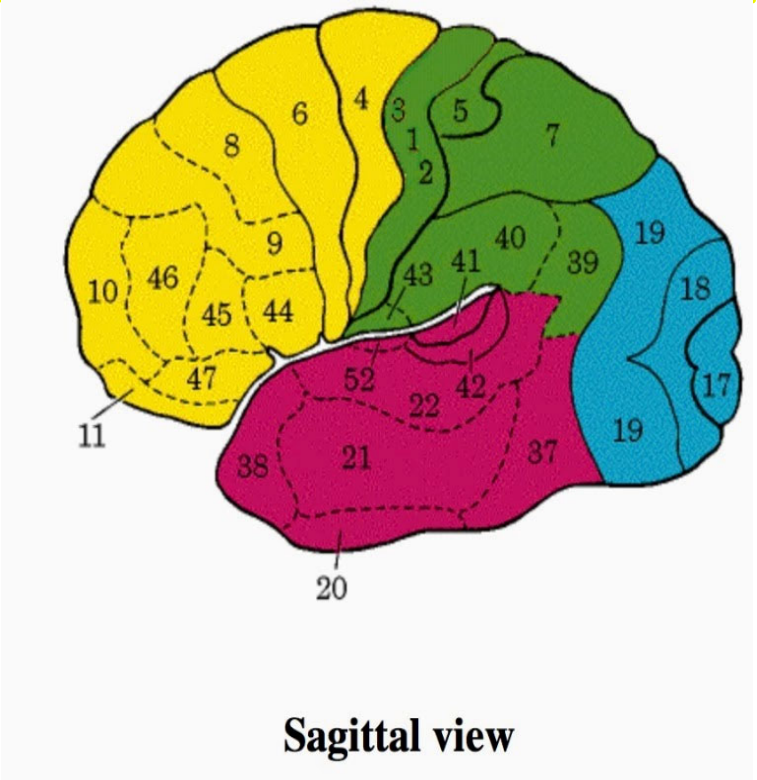
BRODMANN'S AREAS - SPEECH-LANGUAGE

- 44 Pars Opercularis
    - Traditional Broca's Area
    - Condition: Broca's Aphasia; Apraxia of Speech
- 45 Pars Triangularis
    - Part of Broca's Area
    - Condition: Broca's Aphasia; Apraxia of Speech

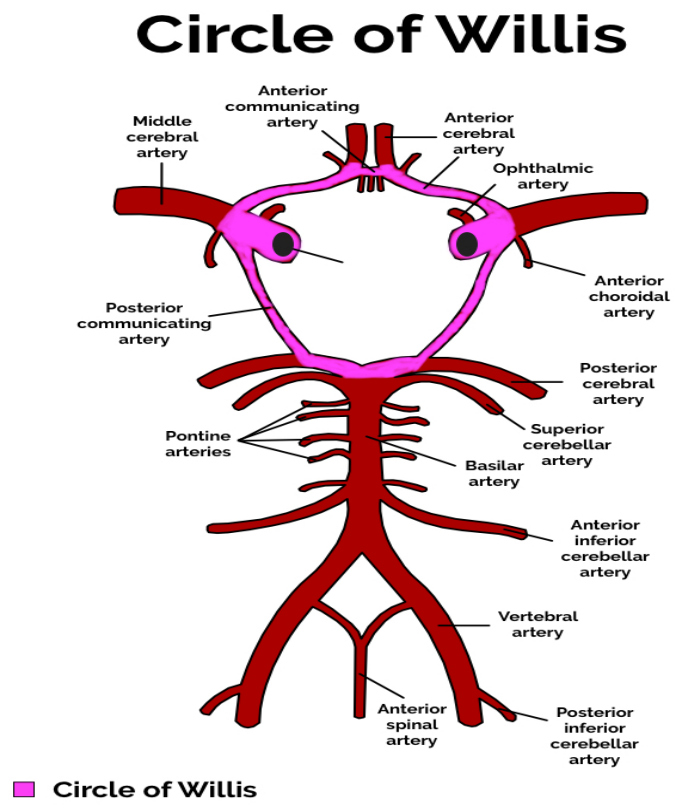


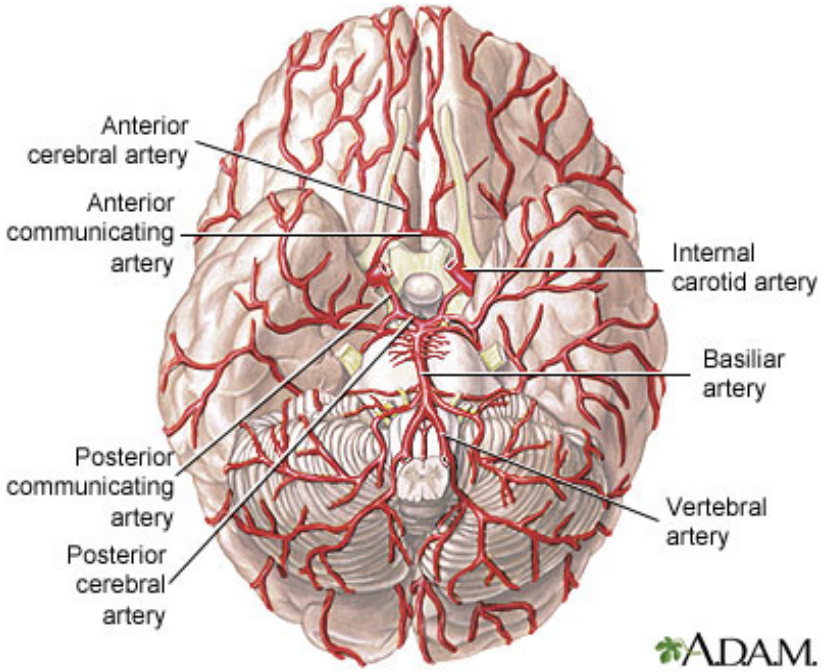
BRODMANN'S AREAS - SPEECH-LANGUAGE

- 22 Superior Temporal Gyrus
    - Part of Wernickes Area
    - Condition: Wernicke's aphasia
- 40 Supramarginal Gyrus
    - Part of Wernickes Area
    - Condition: Wernicke's aphasia
- 41, 42 Primary Auditory Association Cortex
    - Condition: Processing Issues in Wernicke's Aphasia
- 39 Angular Gyrus
    - Part of Wernickes Area
    - Acalculia, agraphia



CEREBRAL BLOOD SUPPLY





GEEKYMEDICS.COM

STROKE TYPES

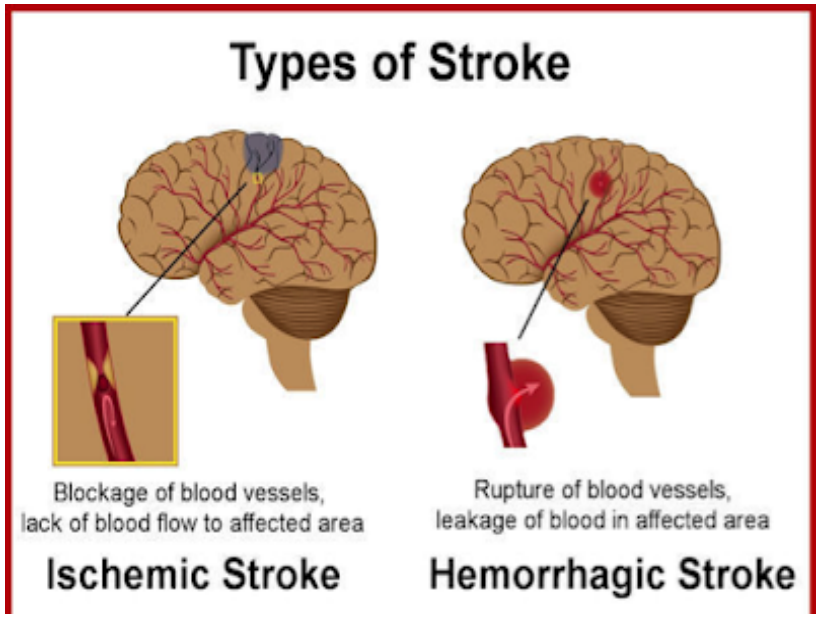
- Stroke Types

- Ischemic (87%)

  Thrombosis (stenosis)

  - Thrombo-embolic

- Intracerebral Hemorrhage (10%)
- Subarachnoid Hemorrhage (3%)



DEFINITIONS AND KEY CONCEPTS

APHASIA

- Aphasia is an impairment of language, affecting the production or comprehension of speech and the ability to read or write. Aphasia is always due to injury to the brain–most commonly from a stroke, particularly in older individuals. But brain injuries resulting in aphasia may also arise from head trauma, from brain tumors, or from infection
- Aphasia IS NOT the result of a motor, intellectual or psychological impairment. It is strictly a language impairment that can show deficits in any or all modalities of language.

APHASIA (CONT.)

- Aphasia is a consequence of stroke, affecting 21-38% of acute stroke patients (Berthier, ML. (2005). Poststroke aphasia : epidemiology, pathophysiology and treatment. Drugs Aging, 22(2):163-82.

- Aphasia affects about one million Americans -or 1 in 250.
- More than 200,000 Americans acquire the disorder each year. However, most people have never heard of it.
- National Aphasia Association http://www.aphasia.org

KEY CONCEPT CEREBRAL DOMINANCE

- Left hemisphere dominant for language in right-handed adults
- Mirror image concept for left-handed adults
- Studies of language dominance -Sodium amytal (Milner,1975)
- Retrospective chart reviews (Naeser & Borod, 1986)

KEY CONCEPT-HANDEDNESS

- >90% of the population is right-handed
- Left hemisphere is dominant for language in 99% of right-handed individuals
- Left hemisphere is dominant for language in 70% of left-handed individuals
- 15% right hemisphere dominant
- 15% bilateral
- Left hemisphere is dominant for language in 97% of all individuals

KEY CONCEPTS: DOMINANCE CONCLUSIONS

- Most adults regardless of handedness rely on left hemisphere for language
- Left-handers brains may be more flexible about which hemisphere gets language responsibility
- Left-handers who become aphasic seem to have less severe aphasia and recover better regardless of which hemisphere is affected

APHASIA PATTERNS OF IMPAIRMENT

- Speech fluency
- Paraphasia
- Repetition
- Language Comprehension

KEY IDEAS

- Acquired impairment…of the ability to comprehend and formulate language
- A multimodality disorder
  - Auditory comprehension
  - Reading
  - Oral-expressive language
  - Writing

comprehension

expression

(Rosenbeck, LaPointe, Wertz, 1989)

SIMPLE CONNECTIONIST MODEL OF LANGUAGE

- Wernicke's area: comprehension; lexical semantics; puts together phonological information (rule-based output)

arcuate fasciculus

- Broca's area: syntactic construction and comprehension; verbs
  - (And formulation of the motor plan - speech)

CONNECTIONIST

- Three layers of units: semantic features, words, and phonemes.
- Each word corresponds to a single unit in the word layer.
- Bidirectional excitatory connections link words to their semantic features and phonemes.
- Each word is connected to semantic features and phonemes.
- Lexical access is achieved by interactive spreading activation.
- Semantic units are activated, this activation spreads throughout the network, and ultimately the sounds of the intended word are retrieved.

FLUENT VERSUS NON-FLUENT APHASIA

Non-fluent

- Slow, labored speech
- Grammatical constructions are restricted
- Intonation reduced or absent
- Function words omitted
- Rely on a lot of noun

Fluent

- Normal/near normal speech rates
- Variety of grammatical constructions
- Intonation patterns present and usually appropriate
- Function words present
- Syntax appropriate

APHASIA CLASSIFICATIONS

- The Boston school of classification (*brain-behavior taxonomies or neuroassociationists*) uses the following to classify the aphasias:
  - Word retrieval
  - Fluency (including grammatical output)
  - Auditory comprehension
  - Ability to repeat

  - (Does not include reading, writing, etc.)

CLASSIFICATIONS (CONT.)

Non-Fluent Aphasias

- Broca's
- Global

Fluent Aphasias

- Wernick'es
- Conduction
- Anomic
- Transcortical Sensory
- Transcortical Motor*-can also be fluent

FLUENT VERSUS NON-FLUENT

- Nonfluent Aphasia
    - Anterior to Central Sulcus-general lesion site
- Fluent Aphasia
    - Posterior to Central Sulcus-general lesion site

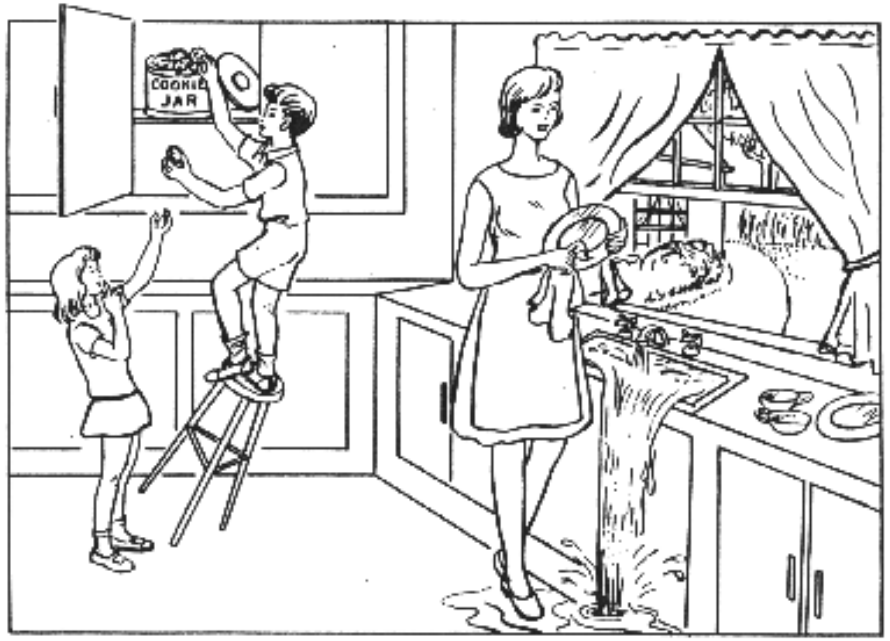
BROCA'S APHASIA (NON-FLUENT/EXPRESSIVE)

- Anomia

  Words are slow, laborously and halting • Frequent pausing (syllables, words)
- Nonfluent
- Relatively good auditory comprehension
- Poor repetition
- Writing similar to verbal output
- Agrammatic; large, absent of function words

- Other: agrammatism***; often right hemiparesis and motor speech symptoms; "telegraphic" output

“Well…mess…uh -cookie, uh-oh, fall down…wife spill water…and uh dis…ez…and uh sups and saucer and plate…I, uh…no…done.



GLOBAL APHASIA (NONFLUENT/EXPRESSIVE)

- Anomia
- Nonfluent
- Poor auditory comprehension
- Poor repetition

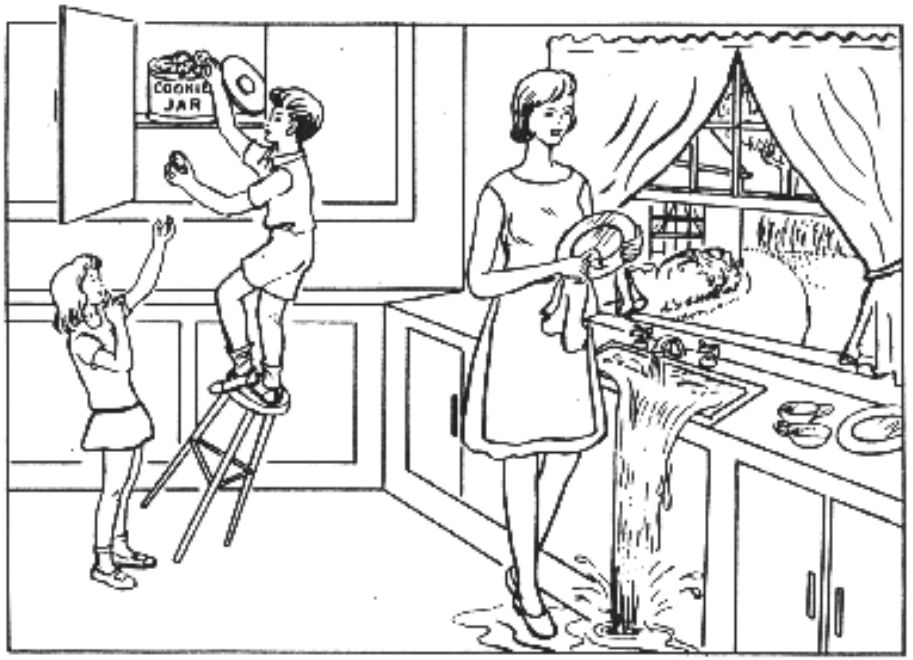
Severe impairments in all areas of language; limited spontaneous speech, frequently with stereotypic utterances

WERNICKE'S APHASIA (FLUENT/RECEPTIVE)

- Anomia
- Fluent speech
- Poor auditory comprehension***
- Poor repetition

These clients present with obvious auditory comprehension issues, broad lexical semantic errors, and, frequently, deficits in reading and writing

I would say the little boy was hooking some cookies and was going to fall off, his girl wanted a piece of the cookies too…His mother was washing clothes, and spilt on the…up over the, the *shring*.



CONDUCTION APHASIA (FLUENT)

- Anomia (most clinically relevant symptom)
- Fluent
- Good comprehension
- Poor repetition***

These clients also present with phonemic paraphasias and tend to be highly aware, but not helped by cues or a model.

TRANSCORTICAL MOTOR

- Damage to anterior superior frontal lobe of language dominant hemisphere
  - Reduced speech output
- Good repetition
- Good auditory comprehension

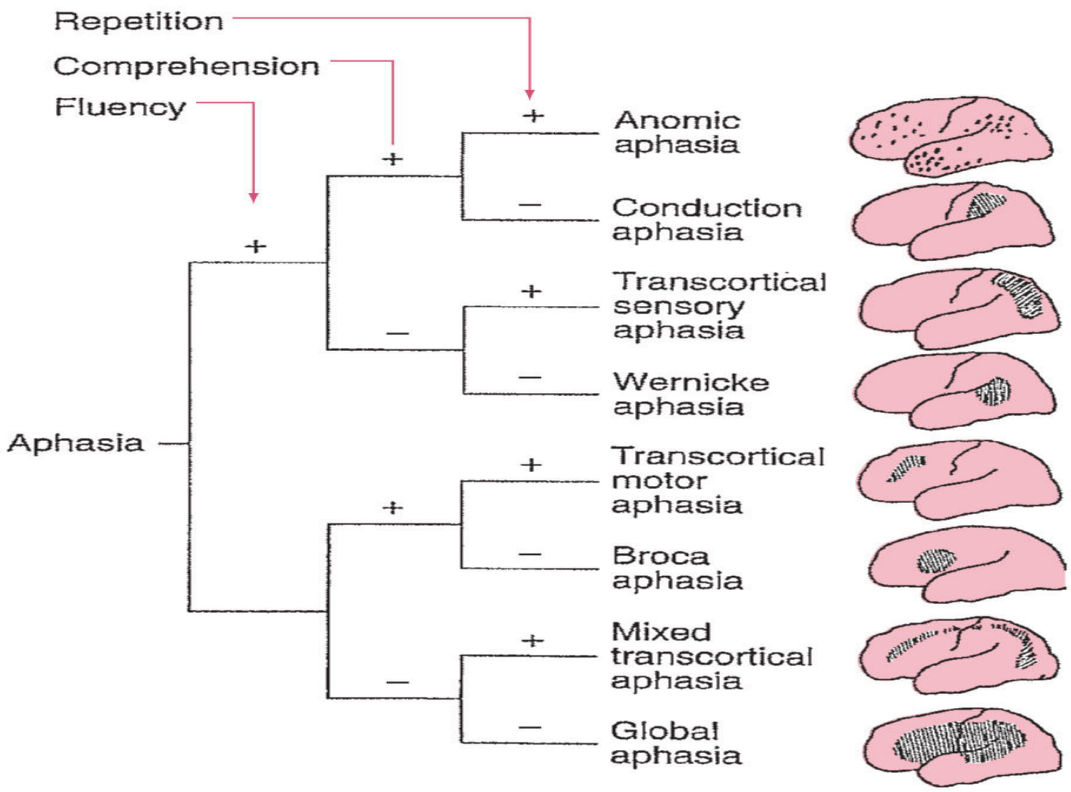
TRANSCORTICAL SENSORY APHASIA

- Posterior Isolation syndrome
- Damage to high parietal lobe in dominant language hemisphere
- Poor comprehension (listening and reading)
- Good repetition
- Fluent, empty speech with paraphasias

ANOMIC APHASIA

- Word retrieval in verbal output and writing are the only obvious symptoms
- Fluent and grammatically correct spontaneous output
- Unusual pausing and circumlocutions
- Residual state of many aphasic syndromes AFTER time of improvement 3

LOCALIZATIONIST MODEL OF APHASIA



SUBCORTICAL APHASIAS-

- Regions of the basal ganglia and left (dominant) thalamous
- Thalamic aphasia
  - Fluent speech, significant anomia
  - Impaired receptive language

  Intact repetition

SUBCORTICAL APHASIA (CONT.)

- Striatocapsular aphasia
  - Loss of fluency
  - Rare phonemic paraphasias
  - Preserved repetition
  - Mild anomia

APHASIA ASSESSMENT

PURPOSES OF ASSESSMENT
(NOT EXCLUSIVE TO APHASIA!)

- Differential diagnosis
- Determine key features
- Determine severity/prognosis
- Determine suitability for treatment
- Focus on appropriate treatment
- Measure change
- Documentation for payers

COMPREHENSIVE LANGUAGE BATTERIES (IMPAIRMENT)

- Naming
- Matching pictures with words
- Repeating
- Answering questions
- Sentence completion
- Pointing
- Following directions
- Reading aloud
- Silent reading comprehension
- Writing to dictation
- Composition
- arithmetic

Standardized with a sample of people with aphasia; allow clinician to derive a score and percentile range

APHASIA BATTERIES

- Aphasia Language Performance Scales
- Aphasia Diagnostic Profiles
- Neurosensory Center Comprehensive Examination for Aphasia
- Examining for Aphasia
- Communicative Abilities of Daily Living
- Comprehensive Aphasia Test
- Boston Assessment of Severe Aphasia
- Minnesota Test for Differential Diagnosis of Aphasia (MTDDA)
- Porch Index of Communicative Ability (PICA)
- Revised Token Test (RTT)
- Psycholinguistic Assessments of Language Processing
- Aachen Aphasia Test (AAT)
- Boston Diagnostic Aphasia Exam (BDAE)
- Western Aphasia Battery (WAB

BOSTON DIAGNOSTIC APHASIA EXAM-3 RD EDITION

- Harold Goodglass, Edith Caplan
- Assigns patients to classic aphasia syndromes
- Standard form; structured interview, 27 subtests, BNT (60 items), 9 rating scales
- Administration time 2 hours (avg.)
- Subtest summary profiles

WESTERN APHASIA BATTERY (WAB)

- Aphasia Quotient
- Speech
- Auditory Comprehension
- Repetition
- Naming
- Language Quotient
- Cortical Quotient
- Entire Test

GOALS FOR TREATMENT

- Regain language skills (body structure/function - impairment)
- Learn compensatory strategies or new skills (activity/participation)
- Adaptation and social participation (activity/participation)

PREDICTORS OF APHASIA RECOVERY

- Age
- Handedness
- Education
- Intelligence

* Weak predictors

- Multiple Lesions
- Size of Lesion
- Location of Lesion
- Aphasia Type
- Initial Aphasia Severity

TREATMENT TECHNIQUES

- Sentence Production Program for Aphasia
- Semantic Feature Analysis (SFA)
- Melodic Intonation Therapy (MIT)
- Script Training
- Errorless Learning
- Spaced Retrieval
- Combined Aphasia and Apraxia of Speech Treatment (CAAST)
- Copy and Recall Treatment (CART)
- transcranial direct current stimulation (tDCS)

SUPPORTED COMMUNICATION STRATEGIES

- Pacing
- Writing key words
- Written choice
- Pictures/graphics
- Gestures
- Drawing
- Confirming
- Simplifying input

FRAMEWORK FOR APHASIA SERVICES: LIFE PARTICIPATION APPROACHES TO APHASIA

- A framework for assessment, intervention, research, and advocacy
  - And encompasses impairment, activity/participation, and context
- Components
  - Explicit goal is enhancement of life participation
  - All individuals affected by aphasia are entitled to services
  - Both personal and environmental factors are targets of dx/tx
  - Success is measured through life enhancement changes
  - Emphasizes services at all stages of life

LPAA Project Group, 2001, 2002

TRAUMATIC BRAIN INJURY (TBI)

WHAT IS A TRAUMATIC BRAIN INJURY?

- An insult to the brain, not of degenerative or congenital nature, caused by an external physical force that may produce a diminished or altered state of consciousness, which result in an impairment of cognitive abilities or physical...behavioral or emotional functioning

Brain Injury Association of the United States

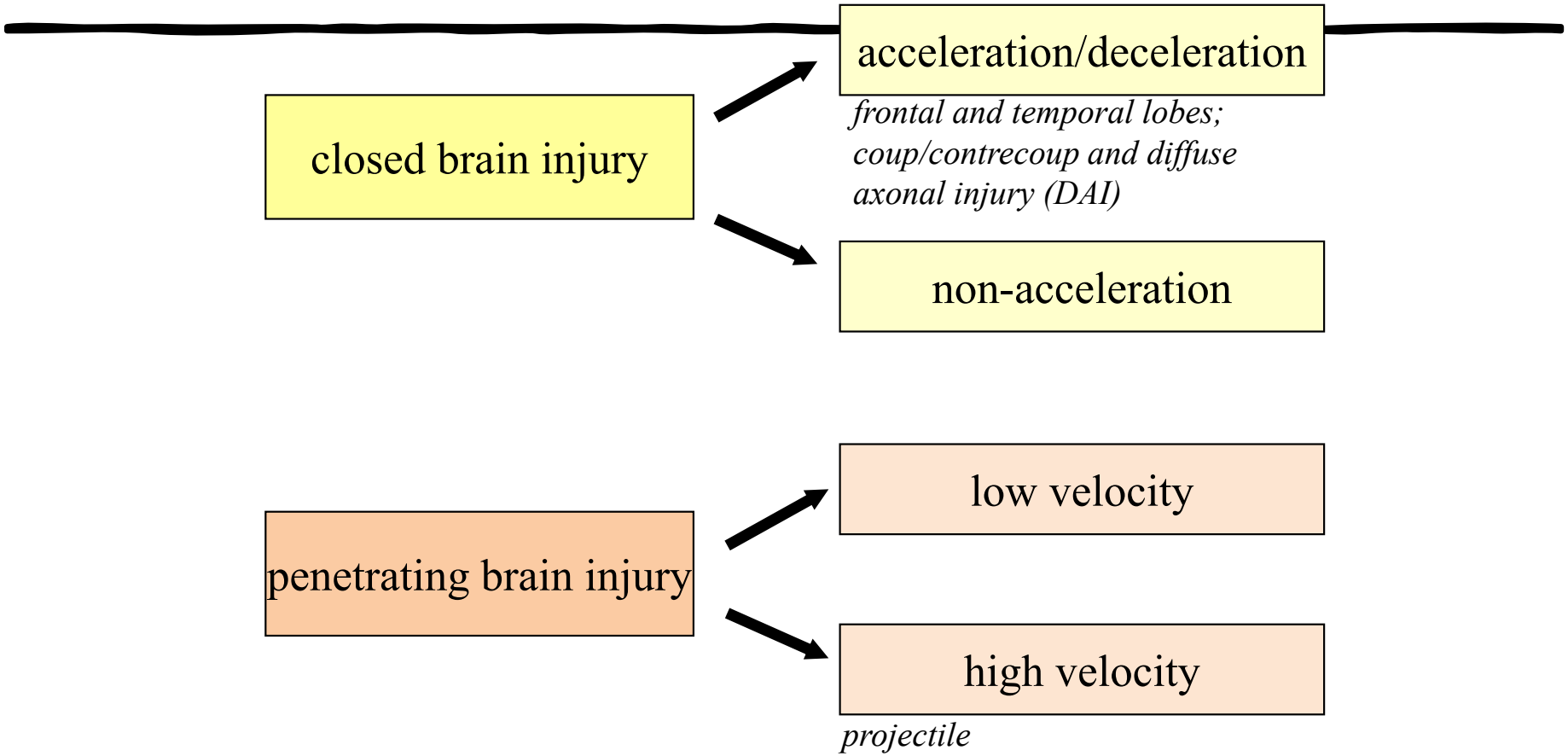
COGNITION

- "An umbrella term for all higher mental processes.....the collection of mental processes and activities used in perceiving, remembering, thinking and understanding (Ashcroft & Radvansky, 2010"
- "The term cognition is used in several loosely related ways to refer to a faculty for the human-like processing of information, applying knowledge and changing preferences.....cognition is closely related to such abstract concepts as mind, reasoning, perception, intelligence, learning, and many others (Science Daily, 2014)

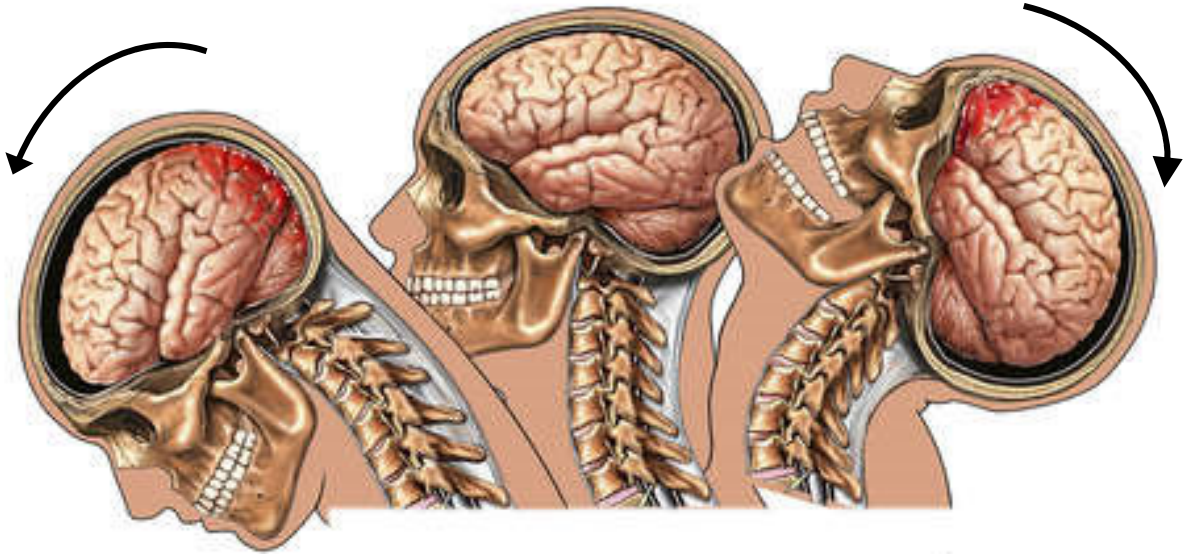
COGNITION

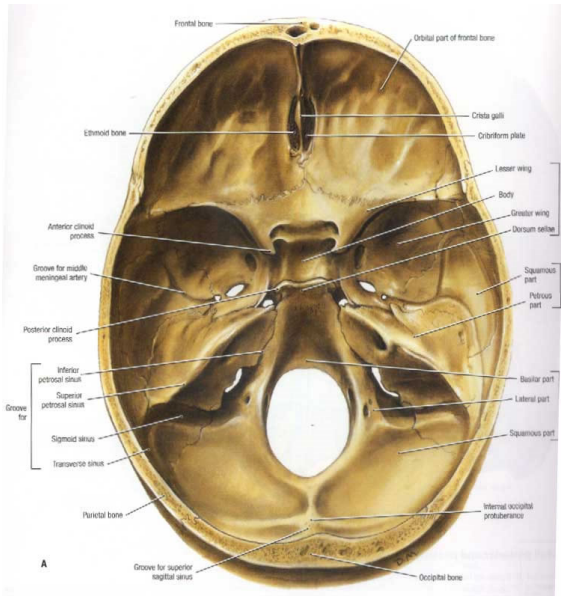
- Attention
- Memory
- Organization
- Planning
- Problem Solving
- Reasoning
- Executive Function
- Language

PATHOPHYSIOLOGY



COUP/CONTRECOUP INJURY





COMPLICATIONS

- Edema - swelling
- Raised intracranial pressure
- Hypoxia - lack of oxygen
- Hematoma
- Infection
- Seizure

STAGE OF RECOVERY

- Patients may go through all or some of these stages of care:
  - Emergency care
  - Coma care
  - Skilled care
  - Inpatient rehabilitation
  - Outpatient rehabilitation
  - Community reintegration

IMPACT OF BI (SEQUELAE)

- Physical
  - Motor, sensory, and related impairments
  - Examples: blurred or double vision, paralysis/weakness, swallowing problems
- Cognitive
  - Impairments in a number of domains (see upcoming slides)
  - Often there is a pattern of multiple deficits due to diffuse nature of injury

IMPACT (CONT)

- Behavioral
  - Often, changes in the ability to interact well with others or behave appropriately
  - Caused by organic, premorbid, and reactive/environmental factors
  - Examples: personality changes, anger issues, inappropriate behavior in community

TBI ASSESSMENT

EARLY ASSESSMENT - COMA

- Rancho Los Amigos (Levels of Cognitive Functioning) Scale (Hagen, 1981)
- Level I - No Response. Patient does not respond to external stimuli and appears asleep.
- Level II - Generalized Response. Patient reacts to external stimuli in nonspecific, inconsistent, and nonpurposeful manner with stereotypic and limited responses
- Level III - Localized Response. Patient responds specifically and inconsistently with delays to stimuli but may follow simple commands for motor action.
- Level IV - Confused, Agitated Response. Patient exhibits bizarre, nonpurposeful, incoherent or inappropriate behaviors, has no short-term recall, attention is short and nonselective.

RANCHOS LOS AMIGOS

- Level V - Confused, Inappropriate, Nonagitated Response. Patient gives random, fragmented, and nonpurposeful responses to complex or unstructured stimuli. Simple commands are followed consistently, memory and selective attention are impaired, and new information is not retained.
- Level VI - Confused, Appropriate Response. Patient gives context appropriate, goal-directed responses, dependent upon external input for direction. There is carry-over for relearned, but not for new tasks, and recent memory problems persist.
- Level VII - Automatic, Appropriate Response. Patient behaves appropriately in familiar settings, performs daily routines automatically, and shows carry-over for new learning at lower than normal rates. Patient initiates social interactions, but judgment remains impaired.
- Level VIII - Purposeful, Appropriate Response. Patient oriented and responds to the environment but abstract reasoning abilities are decreased relative to premorbid levels.

GLASGOW COMA SCALE

- Glasgow Coma Scale (GCS) Score (Teasdale & Jennett, 1974)

Best Eye Opening
1= no eye opening
2= eye opening in response to pain
3= eye opening to speech
4= eyes opening spontaneously

Best Verbal Response
1= no verbal response
2= incomprehensible sounds
3= inappropriate words
4= confused
5= oriented

Best Motor Response
1= no motor response
2= extension to pain
3= abnormal flexion to pain
4= flexion/ withdrawl to pain
5= localizes to pain
6= obeys commands

COMMUNICATION DISORDERS IN TBI

Communication

- Listening
- Speaking
- Gesturing
- Reading
- Writing
- Verbal and non-verbal

Cognition

- Attention
- Perception
- Memory
- Organization
- Executive function

ASSESSMENT FACTORS

- Severity of injury
  - Current level of cognitive functioning
  - Physical injuries
- Emotional state
- Other

ASSESSMENT IN TBI

- Cognitive domains
- Alertness/Attention
- Perception
- Orientation
- Memory
- Organization
- Reasoning
- Problem Solving and Judgement

SCALES OF COGNITIVE ABILITY IN TRAUMATIC BRAIN INJURY (SCATBI)

- Assesses cognitive and linguistic abilities of adolescent and adult patients with head injuries
- Administration time: 30 min - 2 hours
- 5 subtests:
- Perception
- Discrimination
- Orientation
- Organization
- Recall and Reasoning
- https://www.youtube.com/watch?v=IhKEctmlqxw

ROSS INFORMATION PROCESSING ASSESSMENT 2ND EDITION

- Ross Information Processing Assessment Second Edition (RIPA-2)
- Quickly quantify levels of cognitive-linguistic deficits in TBI victims and compareseverity levels in each of 10 areas tested: • Immediate Memory
- Recent Memory
- Temporal Orientation (Recent Memory)
- Temporal Orientation (Remote Memory)
- Spatial Orientation • Orientation to Environment
- Recall of General Information • Problem Solving and Abstract Reasoning
- Organization
- Auditory Processing and Retention
- https://www.youtube.com/watch?v=x1Djtye2P4s(rapport building)
- https://www.youtube.com/watch?v=Ctapj5Kal5g (administration)
- http://overlake.virtual-space.net/SLP/RG.pdf (scoring

BRIEF TEST OF HEAD INJURY

- Quickly probes cognitive, linguistic, and communicative abilities of patients with severe head trauma.
- Ideal first assessment post-coma
- Administration time 25 to 30 minutes; 10 minutes to score
- Sensitive to small performance changes; useful for tracking recovery patterns during the period of spontaneous recovery • Subtests: Orientation and Attention, Following Commands, Linguistic Organization, Reading Comprehension, Naming, Memory, and Visual-Spatial Skill

"EVERYDAY" COGNITIVE TESTING

- Ecological validity - the extent to which a test mirrors performance in everyday life
  - Predictive value

- Examples:
  - Test of Everyday Attention (TEA)
  - Rivermead Behavioral Memory (RBMT)
  - Behavioral Assessment of the Dysexecutive Syndrome (BADS)

- Still examining impairment...

TBI TREATMENT

Language

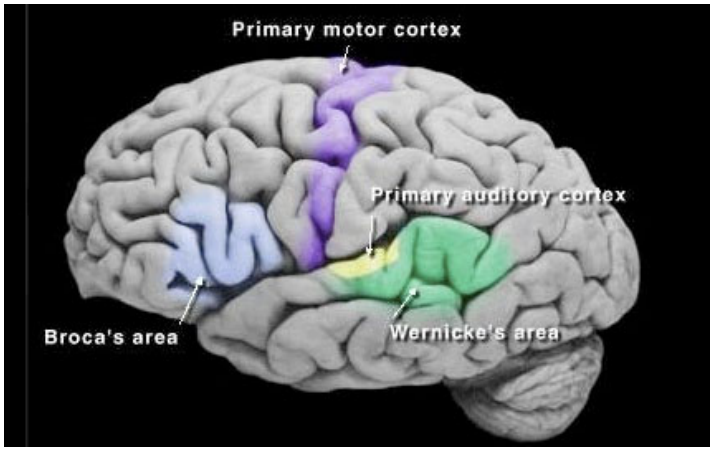
- Language involves four modalities:
  - expressive: oral expression/signing, writing
  - receptive: auditory/sign comprehension, reading
- while much is understood about certain functions, we don't necessarily understand how it all fits together, e.g.,
  - other cognitive processing
  - ideation

Broca's Area

- Broca's area

opercular and triangular sections of the inferior frontal gyrus

  - grammatical output and comprehension
  - central area for motor planning of speech

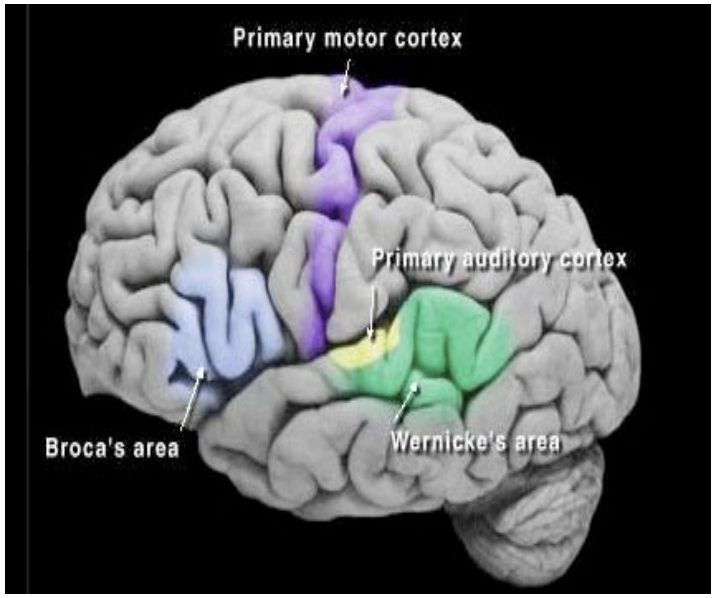


Wernicke's Area

- Wernicke's area

  left posterior section of the superior temporal gyrus, posterior to the primary auditory cortex, on the temporo-parietal junction

  - comprehension of spoken language
  - lexical-semantic processing and output



COGNITIVE COMMUNICATION DISORDERS

- Communication
  - Listening
  - Speaking
  - Gesturing
  - Reading
  - Writing

- Cognition
- Attention
- Perception
- Memory
- Organization
- Executive function

AT A GLANCE...

- Attention Process Training (+ Metacognitive strategy)
- Strategy instruction
- Learning multi-step routines
- Spaced retrieval
- Assistive technology
- Social communication training
- Visual scanning training

Sohlberg & Turkstra, 2011

RESTORATIVE APPROACHES

- Review: Address and improve *specific* cognitive processes
  - Repetition and intensive stimulation theorized to improve the "circuits" and result in functional gains
- Example approach: direct attention training (e.g., Attention Process Training - APT; Sohlberg et al., 1993, 2000, 2003)
  - Exercises aimed at specific components of attention (e.g., sustained, selective, etc.)
  - Best when combined with metacognitive strategy training (e.g., an orienting strategy)
  - (https://www.youtube.com/watch?v=bRRM4yhqRiI)

SKILLS BASED TRAINING

- Review: address activity/participation
    - Treatment generally focused on learning a new skill; for this population, often compensatory (a way to accommodate for cognitive impairment)
- Examples:
    - Teaching functional, everyday skills (e.g., riding the bus, meal preparation)
    - Compensatory memory strategies (e.g., use of a day planner or smart phone)

OTHER ACTIVITY/PARTICIPATION APPROACHES

- Community activities
- Support groups
- Brain injury education
    - Presents facts about brain injury and the typical consequences; presented in discussion
- Improving social interaction/opportunities
    - Example: email – http://www.coglink.com
- And also, family training
    - Example: family advocacy training

NORMAL AGING

NORMAL AGING

- Factors
- Genetics
  - Neurotransmitters
- Hormones
- Experience

PHYSICAL CHANGES

- Brain volume and/or weight declines 5% per decade after age 40
- Shrinkage of grey matter due to neuronal cell death
- Changes in dendrite synapses or loss of synaptic plasticity
- White matter may decline with age, the myelin sheath deteriorating after age 40
- Vasculature aging + increases in BP = increase risk of stroke

AGING AND LANGUAGE PRODUCTION

- Older adults are slower and less accurate in producing names for definitions or pictures
- Older adults produce more ambiguous references and pronouns
- Speech disfluencies such as filled pauses and hesitations increase with age
- Language comprehension generally spared in old age even when compared to decline in other intellectual abilities

DEMENTIAS

MILD COGNITIVE IMPAIRMENT (MCI)

- MCI can be divided into two broad subtypes:
- Amnestic MCI, significantly affects memory
- Individuals begin to forget important information they previously recalled very easily, such as appointments, conversations or recent events
- Nonamnestic MCI, does not significantly affect memory
- Affects thinking skills other than memory such as ability to make sound decisions, judge the time or sequence of steps needed to complete a complex task, or visual perception.
- Other functions, such as language, attention and visuospatial skills, may be impaired in either type

CAUSES OF MCI

- No single cause of MCI
- No single outcome for the disorder
- Symptoms of MCI may:
- Remain stable for years
- Progress to Alzheimer's disease or another type of dementia
- Improve over time.
- MCI often arises from a lesser degree of the same types of brain changes seen in forms of dementia.
- Mayo Clinic

WHAT IS DEMENTIA

- American Psychiatric Association Diagnostic and Statistical Manual on Mental Disorders (APA, DSM IV)
- Multiple cognitive deficits, which include memory impairment and at least one of the following: aphasia, apraxia, agnosia or disturbance in executive functioning.
- Cognitive impairments must be severe enough to cause impairment in social and occupational functioning
- Deficits do not occur exclusively during the course of a delirium
- Gradual and continuing course is required
- Condition is not attributable to other CNS or systemic conditions, delirium, depression or other psychiatric illness

DEMENTIA VERSUS MCI

Dementia

- Multiple cognitive deficits manifested by both

(1) memory impairment and

(2) one (or more) of the following cognitive disturbances: (a) aphasia, (b) apraxia, (c) agnosia, (d) disturbance in executive functioning

MCI

- A general term most commonly used to describe a subtle but measurable memory disorder

DEMENTIA TAXONOMIES

- Cortical Dementias
  - Alzheimer's Disease
  - Lewy Body Dementia
  - Frontotemporal Lobar Dementia
- Vascular Dementia
- Subcortical Dementias
  - Corticobasal Degeneration
  - Parkinson's Dementia
  - Huntington's Dementia
  - Progressive Supranuclear Pals

ALZHEIMER'S DISEASE

- Most common form of dementia
- Affects more that 5 million Americans
- Prevalence and incidence increases significantly with age
- Characteristics
- Insidious onset
- Progressive course
- Heterogeneous

LEWY BODY DISEASE

- Shares common neuropathologic and neurogenetic features with PD
- Distinguished from other neurodegenerative diseases by fluctuating attention, visual hallucinations and parkinsonism
- Characterized by cortical and subcortical disease
- Less medial temporal involvement than AD

FRONTOTEMPORAL DEMENTIAS

- Affects primarily frontal and temporal lobes
- Reasoning
- Social behavior
- Personality
- Speech/language
- Movement
- Memory
- Changes depend on whether damage is primarily on the left or right front of the brain

VASCULAR DEMENTIA

- Vascular dementia is defined as memory decline and at least (2) additional cognitive deficits:
- Orientation, Attention, Language, Visuospatial functions, Executive functions, Motor control or praxis
- Typically have history of HTN, heart disease or both; multiple strokes
- Slow stepwise progression results from multiple strokes
- Personality and intellect are preserved until late stages

PRIMARY PROGRESSIVE APHASIA

- Involves a decline in one or more language functions
- Can occur in individuals under the age of 65
- Begins gradually and initially results in difficulty thinking of common words while speaking or writing
- Memory, reasoning and visual perception are not affected by the disease in early stages
- Increased difficulty thinking of words
- Anomia is most common sign of PPA
- Problems reading or writing brain.northwestern.edu/ppa/handbook

DEMENTIA ASSESSMENT

STANDARDIZED SCREENING TOOLS

Mini Mental Status Exam (MMSE)

- Brief, standardized exam of cognitive status
- Administration time = 10 minutes
- Assesses: orientation, attention, immediate and short-term recall, language, and the ability to follow simple verbal and written commands
- Screening gold standard
- Score of <24 indicates cognitive impairment

Clinical Dementia Rating Scale

- 5-point scale used to characterize six domains of cognitive and functional performance
- Domains examined
- Memory, orientation, judgment and problem solving, community affairs, home and hobbies, personal care
- Ratings made by clinician based on patient interview
- 0 = Normal 0.5 = Very Mild Dementia 1 = Mild Dementia 2 = Moderate Dementia 3 = Severe Dementia

ARIZONA BATTERY FOR COMMUNICATION DISORDERS OF DEMENTIA

- 4 Screening Subtests
- Speech Discrimination
- Visual Perception and Literacy
- Visual Field
- Visual Agnosia
- 14 ABCD Subtests

COGNITIVE-LINGUISTIC QUICK TEST

- Use to quickly I.D. strengths and weaknesses in five cognitive domains (attention, memory, executive functions, language, and visuospatial skills)
- Administration time: 5 to 30 minutes
- Can be administered at a table or bedside
- Available in both English and Spanish

Helms-Estabrooks 2001

ADDITIONAL SCREENERS

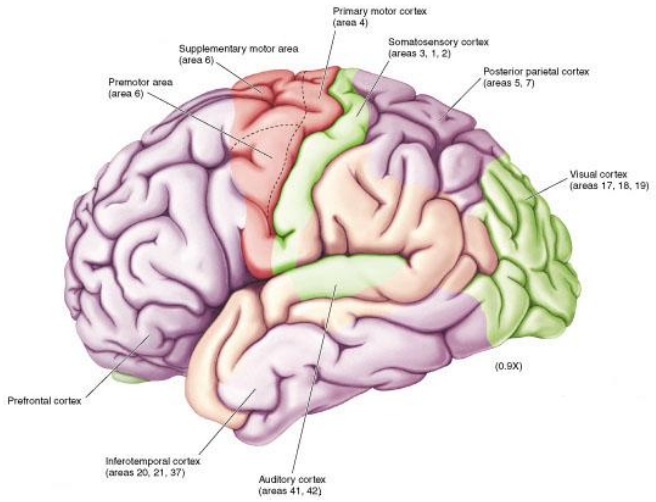
- Montreal Cognitive Assessment (MOCA)

- St Louis University Mental Status (SLUMS)

DEMENTIA MANAGEMENT

clinical relevance

- aphasia
  - affects any or all modalities
  - fluent vs. nonfluent
- dementia
  - lexical semantics



MANAGEMENT ISSUES

Early Stages

- Memory
- Communication
- Anxiety and Depression
- Behavior Changes
- Denial
- Sleep Disturbance

Interventions

- Collaborative
- Patient, Caregiver, SLP
- Compensatory
- Group Tx
- Major domains
- Memory
- Confusion
- Communication

MANAGEMENT ISSUES

Middle Stages

- Progressive Behavior Changes
  - Insight, Judgment, Orientation
- Physical Dependence
- Communication

Interventions

- Collaborative
- Caregiver & SLP
- Caregiver Centered
  - Environmental control
- Major domains
- Behavior
- Communication

MANAGEMENT ISSUES

Late Stages

- Caregiver Support

Interventions

- Collaborative
- Caregiver & SLP
- Caregiver Centered
- Environmental control
- Major domains
- Behavior

DIRECT INTERVENTIONS

- Reality Orientation
- Memory Prostheses
- Reminiscence Therapy
- Spaced Retrieval Training

INDIRECT THERAPIES

- Life History Videos

- Environmental Manipulations

RIGHT HEMISPHERE DISORDER

RIGHT HEMISPHERE SYNDROME

- Patients appear "abrupt, disinterested and insensitive communication partners, who may take little account of social communication conventions, perhaps interrupting and failing to make eye contact, or alternatively as a verbose, rambling communicator whose discourse shows tangential associations"
- They exhibit impairments in the ability to integrate and interpret incoming information may also be impaired, leading to difficulties with some aspects of comprehension"
- "Prosodic, affective and cognitive impairments, including denial, attention deficit and neglect, may accompany and contribute to the communication disorder" (Meyers, 1999)

STRUCTURES/FUNCTIONS OF THE RIGHT HEMISPHERE

- Frontal lobe is quite similar to left hemisphere, with exception of language functions of Broca's area
    - Executive functions, attention, reasoning, initiation, memory
- Temporal lobe
    - Receiving and interpreting nonverbal sounds
    - Nonverbal learning and memory
    - Associating emotion with sensory input

ROLES OF THE RIGHT HEMISPHERE

- Cognitive - attention, memory, executive function
    - Sustained and selective attention
- Communicative
    - Prosody - nonverbal; melodic and rhythmic aspects of speech
    - Organization of verbal output
    - Comprehension of figurative language
    - Pragmatics - inhibiting inappropriate responses
    - Recognition and expression of emotion

CHARACTERISTICS OF RIGHT HEMISPHERE DISORDER

- Left visual neglect
- Difficulty with facial recognition
- Poor awareness of deficits
- Poor self-monitoring
- Impulsive behavior
- Poor initiation and motivation
- Disorientation

COGNITIVE DEFICITS

- Disorientation
- Impaired attention
- Memory impairments
- Difficulty with verbal organization, writing
- Problem solving difficulties
- Difficulties inferring underlying meaning (humor)

AFFECTIVE DEFICITS

- Difficulty attaching a meaning to intonation and facial expression
- Producing range of intonation and expression
- Difficulty recognizing others' emotions
- Difficulty expressing emotion
- Depression
- Lack of motivation

PRAGMATIC DEFICITS

- Turn-taking
- Topic maintenance
- Eye contact
- Interjection of irrelevant, tangential, or inappropriate comments
- Generally insensitive to rules of conversation

PERCEPTION AND ATTENTION

- Unawareness or minimization of deficits
- Left neglect - body or spatial
    - Left more common than right
- Prosopagnosia
- Anosognosia - I'm not aware about not being aware!
- Excessive attention to irrelevant information
- Visual agnosia

DISCOURSE DEFICITS

- Reduced ability to generate inferences
- Reduced ability to comprehend and produce main concepts and central themes
- Reduced level of informative content
- Reduced ability to manage alternative meanings
- Reduced sensitivity to communicative content

RHD ASSESSMENT

STANDARDIZED TESTING

- Mini Inventory of Right Brain Injury (MIRBI)
- The Rehabilitation Institute of Chicago Clinical Management of Right Hemisphere Dysfunction (RICE)
- Burns Inventory of Communication and Cognition

NONSTANDARDIZED ASSESSMENTS

- Visual scanning and visual inattention
- ADLs
- Visual integration
- Higher cognitive and perception functions
- Linguistic and cognitive flexibility

TREATMENT APPROACHES

- Task Oriented Approaches
- Improve performance on specific activity
- Process Oriented Approaches
- Address impairment vs disabilities and focus on underlying cause vs symptoms
- Eye Contact
- Conversation turn taking
- Conversational topic maintenance

QUESTIONS

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