NEUROPSYCHOLOGICAL CONSULTATION: COMMON REFERRAL ISSUES

NEW MEXICO NURSE PRACTITIONERS ASSOCIATION
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Rex M. Swanda, Ph.D., ABPP-CN
VA Medical Center

Neuropsychological Consultation: General Approach

- **Review relevant records and history**
  - Referral question guides what is relevant
    - Is the patient able to drive?
    - Do memory complaints relate to dementia?
    - Are the cognitive complaints related to a work-related injury?

Neuropsychological Consultation: General Approach

- **Interview patient and informants**
  - Does pt understand reason for evaluation
    - Is patient a reliable historian?
    - Background information helps to estimate longstanding (premorbid) level of functioning
    - Provides a context for interpreting the results

Neuropsychological Consultation: General Approach

- **Formal Examination Procedures**
  - Standardized administration, scoring and interpretation
  - Normative comparisons provide "fair" interpretation, taking into account
    - Age
    - Education
    - Gender, SES, cultural factors

Neuropsychological Consultation: General Approach

- **Therapeutic Feedback**
  - Opportunity to assess INSIGHT
  - Identify therapeutic goals
  - Facilitate patient's movement toward therapeutic goals

AREAS ADDRESSED IN NEUROPSYCHOLOGICAL ASSESSMENT

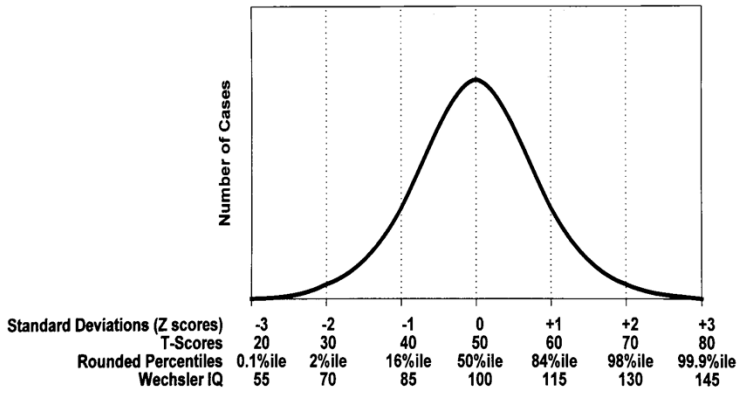
- Intellectual Functioning
- Attention
- Memory
- Language
- Visual-Spatial, Constructional Abilities
- Executive Functions
- Sensory & Motor Skills
- Personality & Emotional Factors

EXAMPLES OF NEUROANATOMICAL LOCALIZATION OF FUNCTIONS

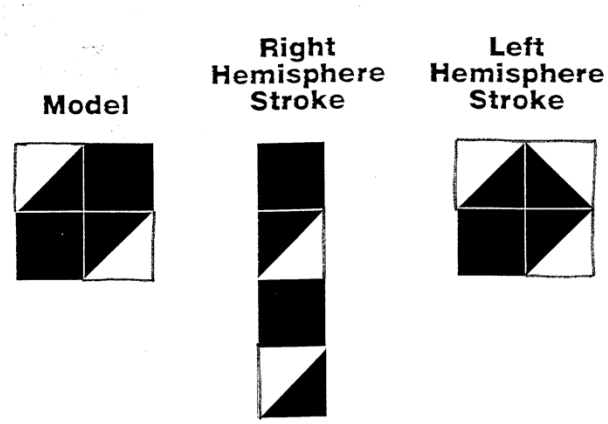
Function	Neuroanatomic Site	Injury Mechanism
Memory	Hippocampus	Anoxia
Language	Left Hemisphere	Stroke, Tumor
Spatial Skills	Right Hemisphere	Stroke, Tumor
Executive Functions	Frontal Lobes	Head Injury

QUANTITATIVE INTERPRETATIONS VS QUALITATIVE CONSIDERATIONS

APPLYING NORMATIVE STANDARDS



RIGHT VS LEFT HEMISPHERE SPATIAL PROCESSING



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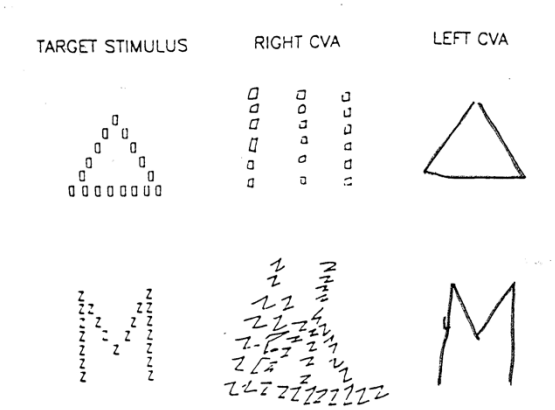

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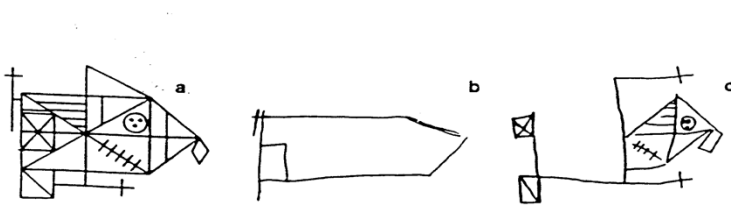
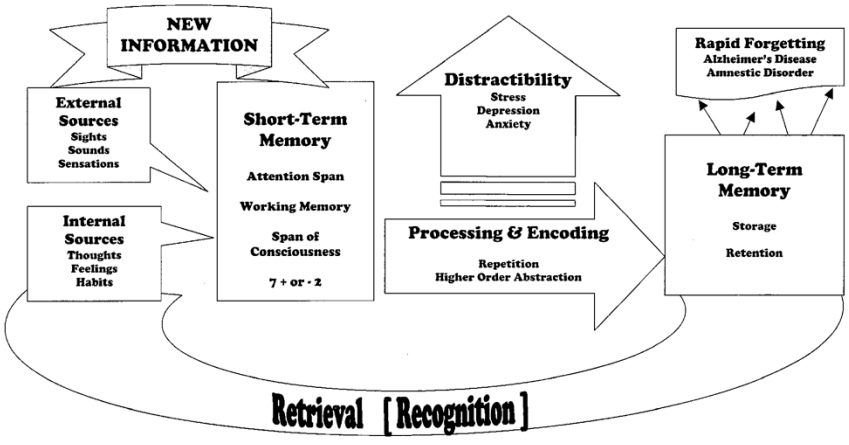


REFERRALS FOR EVALUATION

- Assess Current Level of Functioning
  - Emphasizes BEST level of functioning for differential diagnosis
- Establish Baseline for Future Comparison
  - Emphasizes STABLE measures of functioning to follow pt in future
- Decision-Making Capacity
  - Emphasizes MINIMAL levels of functioning
  - Financial, Health, Independent living, Testamentary, Driving

DIFFERENTIAL DIAGNOSIS OF MEMORY COMPLAINTS



TRAUMATIC BRAIN INJURY (TBI)

- Evidence-based research considers
  - Loss of Consciousness (LOC) as measure of TBI severity
  - Pattern of Performance on objective measures of cognition and emotion
  - Pattern of Recovery over time
  - Other contributing factors

INDICATORS OF TBI SEVERITY

- Loss of Consciousness (Loss of Awareness)
- Coma (operationalized by Dikmen, et al. as Time to Follow Commands on Glasgow Coma Scale)
- Post Traumatic Amnesia (PTA)
- Signs of Intracranial Injury

TBI SEVERITY

SEVERITY	Glasgow Coma Scale	Alteration in Consciousness	Loss of Consciousness	Post –traumatic Amnesia
Mild	13-15	≤24 hours	0-30 minutes	≤24 hours
Moderate	9-12	>24 hours	>30 min <24 hours	>24 hours <7 days
Severe	0-8	>24 hours	≥24 hours	≥7days

SYMPTOMS OF MILD TBI

Physical Symptoms

- Headache
- Nausea/vomiting
- Drowsiness
- Fatigue
- Dizziness
- Sensitivity to light and/or sound
- Sleep difficulties

Psychological Symptoms

- Feel dazed or stunned
- Decreased concentration
- Difficulty maintaining attention
- Irritability
- Depression
- Social Withdrawal
- Slowed information processing speed
- Trouble thinking

COURSE OF RECOVERY FROM MILD TBI (MCCREA ET AL., 2009)

- Symptoms present immediately post-injury
  - Delayed Onset of symptoms is rare
- Most mTBI gradually return to baseline in 1-2 weeks
- Almost all mTBI return to baseline in 1-3 months
- Less than 3% mTBI endorse symptoms after 1 yr

COURSE OF RECOVERY FROM MILD TBI CONTINUED…

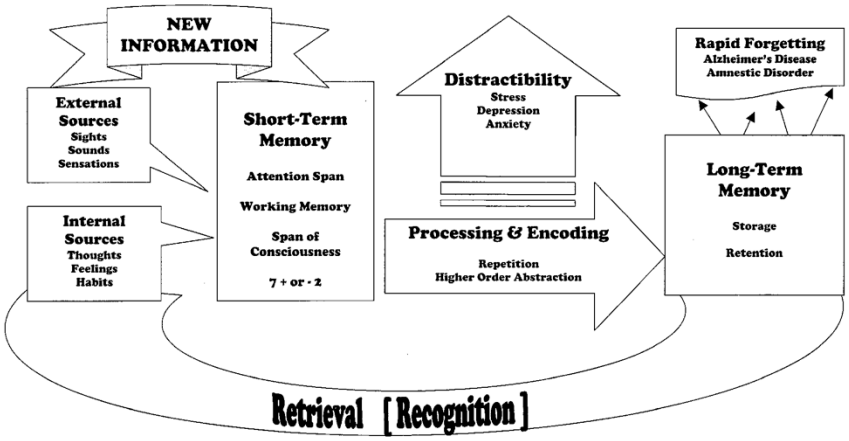
- mTBI is not associated with long-term cognitive impairment
- Symptoms that persist >2 weeks post-injury are likely related to non-mTBI factors
- Litigation is associated with stable or worsening cognitive functioning over time

So – How do we explain the persisting symptoms reported by persons with mTBI?

- Best evidence-based research considers
  - Loss of Consciousness (LOC)
  - Pattern of Performance on objective measures of cognition and emotion
  - Pattern of Recovery over time
- **Other contributing factors**

- Psychological Symptoms (Depression, Anxiety, PTSD)
- Pain (and side effects of medications used to treat)
- Adjustment following injury, return from combat
- Substance abuse

DIFFERENTIAL DIAGNOSIS OF MEMORY COMPLAINTS



POST-TRAUMATIC STRESS DISORDER

- Criteria A: experience with event involving actual or threatened death or serious injury to self or others.
- Criteria B: **Reexperiencing** through intrusive, distressing recollections , dreams or distress in response to exposure of reminders of the event
- Criteria C: **Persistent avoidance** of stimuli associated with the trauma, numbing
- Criteria D**: Increased arousal** (irritability, anger, sleeplessness, hypervigilance, concentration problems, increased startle response

SYMPTOMS OF PTSD

Does this list look familiar?

Physical Symptoms

Headache
Nausea/vomiting
Drowsiness
Fatigue
Dizziness
Sensitivity to light and/or sound
Sleep difficulties

Psychological Symptoms

Feel dazed or stunned
Decreased concentration
Difficulty maintaining attention
Irritability
Depression
Social Withdrawal
Slowed information processing speed
Trouble thinking

OVERLAPPING SYMPTOMS OF MILD TBI AND PTSD

- Both Physical and Psychological Symptoms overlap significantly with TBI
- Many head injury patients, family AND providers MISATTRIBUTE symptoms of PTSD to mTBI
- Neurologic diagnosis may be more socially acceptable than a psychiatric diagnosis

TREATMENT GOALS

- Improve Functional Status
  - Return to baseline level of socialization
  - Return to former levels of work and activity involvement
  - Decrease symptoms and complaints
- mTBI offers few, if any options for direct treatment
  - Avoid inadvertent reinforcement of symptoms
- Emphasize evidence-based medical and psychological interventions
  - Treat psychological symptoms of depression, anxiety, PTSD using evidence-based treatment approaches

CONCLUSIONS

- Consider THREE groups of TBI patients
  - Moderate to Severe TBI with lasting symptoms
    - Long-term, obvious needs for treatment geared toward BOTH physical and psychological symptoms
  - Mild TBI with **uncomplicated** recovery
    - Little or no long-term treatment needed
    - Emphasize education and prevention of complicating psychological symptoms
  - Mild TBI with **complicated** recovery due to co-occurring PTSD
    - Long-term psychological treatment needs often undermined or **inadvertently** reinforced by misdiagnosis and poor understanding by supportive family and care providers