## Outline

#### 🖾 Case Study

**NEUROANATOMY AND THE IMPACT ON** COGNITIVE PROCESSING

- Basic neuronal anatomy
- Brain wiring: Association, projection, and commissural fiber tracts
- Brain lobes locations and ties to cognitive processes
- Cerebellum and impact upon cognition
- Case Study 1: Jacob's anxiety and how pacing the halls became therapeutic

### Case Study

#### **OPTIC SYSTEM AND VISUAL PERCEPTION**

- Optic constructs, anterior-posterior fiber tracts
- Visual cortices and unique roles in visual processing
- Effect of tumors, shear injuries, CVA lesions upon visual perception
- Case study 2: Why can't my patient just see the whole worksheet like I do?
- Group Exercise: Review of vision diagnostics by discipline (PT/OT/SLP)

#### HOW NEUROTRANSMITTERS DRIVE THE BUS

- Internal communication systems within the brain
- Dopamine pathways and effects on cognition and reward systems
- Serotonin pathways and mood modulations

#### **EXECUTIVE FUNCTIONS OF THE FRONTAL LOBE**

- The Cognitive Pyramid and moving patients upward
- Skull anatomy and effects of shear injury - Shear injury as it affects anxiety and behavioral health
- Therapy implications for PT/OT/SLP
- Group Exercise: Review of executive function diagnostics by discipline (PT/OT/SLP)

#### COMMUNICATION AND THE LEFT **HEMISPHERIC FUNCTIONS**

- Broca's vs. Wernike's areas
- Function of the arcuate fasciculus upon communication

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#### SPATIAL PROCESSING AND THE RIGHT **HEMISPHERIC FUNCTIONS**

- Neurophysiology vs neuropathology, understanding patients' nonverbal challenges
- Inferential language and social cognition • A sense of time and spatial organization revealed

#### THE HIDDEN PROCESSORS -THALAMIC INFLUENCES

- Auditory pathways and neuroanatomy Thalamic engagement on sensory
- information Modulation of sleep and vigilance

### Case Study

#### **MEMORY: HOW THE HIPPOCAMPUS AND** THE AMYGDALA PARTNER

- Memory processes Memory types: Right vs left hippocampal
- functions
- Hypoxia and anoxia upon memory function Sleep and memory consolidation, effect of
- exercise on memory structures Amygdala's influence upon fear-based
- learning and hijacking executive control Case study 3: Nile's hypoxia and long tern rehab outcomes

#### **RECOVERY FROM ACCELERATION/ DECELERATION INJURIES: DIFFUSE AXONAL INJURY (DAI)** Microanatomical features of DAI

- CTE: Chronic Traumatic Encephalopathy
- Where medications have failed
- AGITATION MANAGEMENT STRATEGIES Review how working knowledge of the
- Rancho Los Amigos levels and practitioner tips can avoid confrontation
- · Learn trick of the trade for avoiding escalation
- Confabulation and denial—addressing the elephant in the room

#### **ENRICHING PATIENT AND CLINICIAN** RELATIONSHIPS

- The science behind mediations and mindfulness
- Reigning in the runaway situation



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### Clinical Tools & Strategies Specific to Patient Deficits

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# Addressing Patient Behavior by **Brain Lesion Site**



# Clinical Tools & Strategies Specific to Patient Deficits

 Identify cognitive dysfunction to enhance neuroplasticity for decreased fall risk and improved mobility/transfers

• Link function and behavior to more strategically written patient-driven therapy goals

 Tools to connect neuroanatomy to patient behaviors to address difficult behaviors like defiance and confusion

 Improve intervention timing by choosing proper diagnostics based on level of brain lesion

 Anticipate proper discharge plan by determining patient response in structured vs. home environments

#### TARGET AUDIENCE

Physical Therapist Assistants Occupational Therapists Occupational Therapy Assistants Speech-Language Pathologists Certified Brain Injury Specialists **Recreational Therapists** 

**TINLEY PARK, IL** Monday, August 12, 2019

**DOWNERS GROVE, IL** Tuesday, August 13, 2019

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### **Addressing Patient Behavior** by Brain Lesion Site

#### Clinical Tools & **Strategies Specific** to Patients Deficits

Neuroanatomy is admittedly complex and overwhelming. Clinicians working in rehabilitation are faced with growing caseloads, diminished resources/reimbursement, and increasingly medically complex patients with the expectation of improving outcomes and reducing length of stay. Honing knowledge of clinically-relevant neuroanatomy and neuropathology can predict dysfunction and intuitively create a scaffold for assessment and treatment even before meeting the patient. Predetermining potential deficits leads to a more tightly defined diagnostic battery and expedites treatment formulation. By deducing the patient's experience, the clinician can also prepare for behavioral barriers to engagement and understand the healing process with greater compassion.

In this one-day seminar, participants will learn intermediate level neurophysiology as it relates to cognitive-linguistic skills and behavioral control, as well as explore mindfulness techniques for stress reduction. The overlying foci of the course are to arm treating professionals with an improved clinical eye, predicting dysfunction, and expedite the pathway to treatment. Course content will also include patient-focused educational materials for stroke and traumatic brain injury ready to utilize by treating practitioners.

## Speaker.

BENJAMIN WHITE, PT, DPT, C/NDT, LSVT BIG, is an expert in stroke rehabilitation who serves as the lead neurological therapist at a not-for-profit healthcare institution in Texas. A graduate of the University of Texas Health Science Center's physical therapy doctoral program, he has treated a wide array of neurological diagnoses over the years, from concussions and vestibular disorders to stroke, Parkinson's, and Guillain-Barré syndrome.

Dr. White is an award-winning clinical instructor, a renowned national speaker on stroke rehabilitation topics, and has published numerous articles on the topics of neuroplasticity and stroke. In addition, he serves on the Neuro-Development Treatment (NDT) publication committee and is the co-president of the Brazos Valley Parkinson's Association.

#### Speaker Disclosures

Financial: Benjamin White has an employment relationship with Baylor Scott & White. He receives a speaking honorarium from PESI, Inc.

Non-financial: Benjamin White is a member of the Neurodevelopmental Treatment Association.

### Objectives \_\_\_\_\_

- 1. Categorize the anatomy and function of lobes of the brain as they apply to behavioral control.
- 2. Characterize the neurophysiology of memory and effect of fear/anger upon new learning and memory.
- 3. Analyze the effect of traumatic and non-traumatic injuries upon cognitive centers.
- 4. Connect neurotransmitters with the communication system within the brain.
- 5. Evaluate the optic system and lesion locations that affect engagement and accuracy in therapy.
- 6. Recommend simple neuroanatomy-based techniques to rapidly de-escalate stress for patients and caretakers.
- 7. Assess neuro-behavioral barriers that impact new learning.

#### Live Seminar Schedule

7:30 Registration/Morning Coffee & Tea 8:00 Program begins

**12:00-1:00** Lunch (on your own)

3:30 Program ends

There will be two 15-min breaks (mid-morning & mid-afternoon). Actual lunch and break start times are at the discretion of the speaker. A more detailed schedule is available upon request.

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#### Neuro Notes: Clinical Pocket Guide

By Claudia Fenderson, PT, EDD, PCS & Wen Ling, PT, PHD



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Whatever the practice setting-acute care, rehabilitation, outpatient, extended care, or in a school-turn to this handy pocket guide to the neurological examination. Small in size, but not in content, it covers all of the common neuromuscular conditions, disorders, and diseases you might encountered in patients throughout their lifespans. A spiral binding, thumb tabs and nearly 240 illustrations insure you can find just what you're looking for. Waterproof, reusable pages let you record clinical data and then wipe the pages clean with alcohol.

#### **Optimizing Cognitive Rehabilitation:** Effective Instructional Methods

By McKay Moore Sohlberg, PHD, CCC-SLP, and Lyn S. Turkstra, PHD, CCC-SLP

Unique in its focus, this book presents evidence-based instructional methods specifically designed to help this population learn more efficiently. The expert authors show how to develop, implement, and evaluate an individualized training plan. They provide practical guidelines for teaching multistep procedures, cognitive strategies, the use of external aids, and more.

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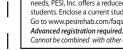
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