



NEURO
INSTITUTE

Continuing Education for Rehabilitation Professionals



Improving Insight and Awareness in Brain Injury

Kristy Easley, M.A., CCC-SLP, CBIS NeuroRestorative

Learning Objectives

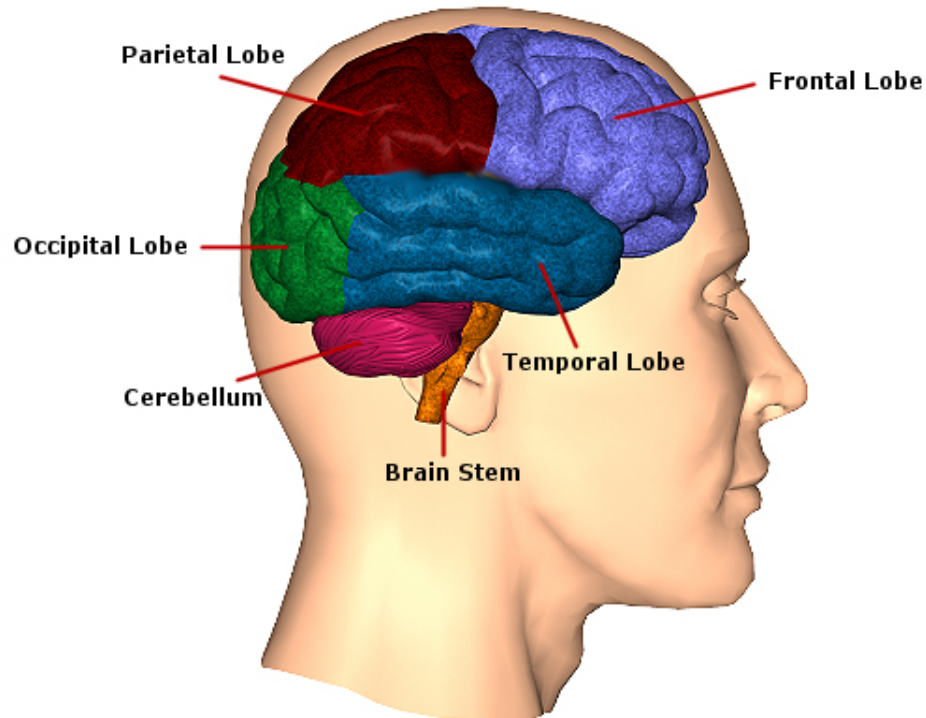
- Relate the anatomy and physiology of the pre-frontal cortex and frontal lobes to the clinical phenomenon of anosognosia.
- Identify and contrast two different models of awareness to support treatment planning.
- Describe at least 2 effective strategies to improve insight and awareness in brain injury.

Executive Function & Insight

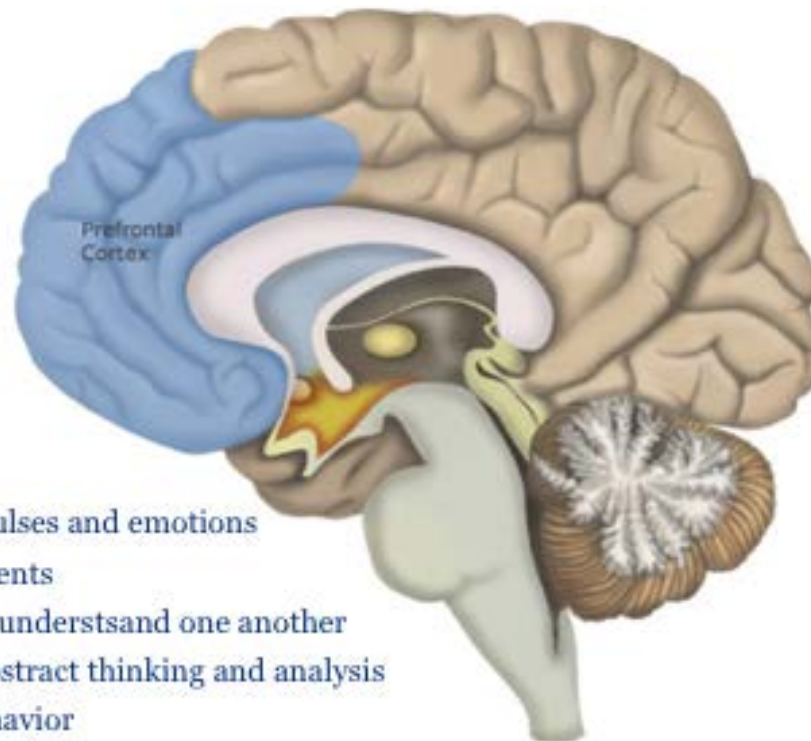


Lobes of the Brain

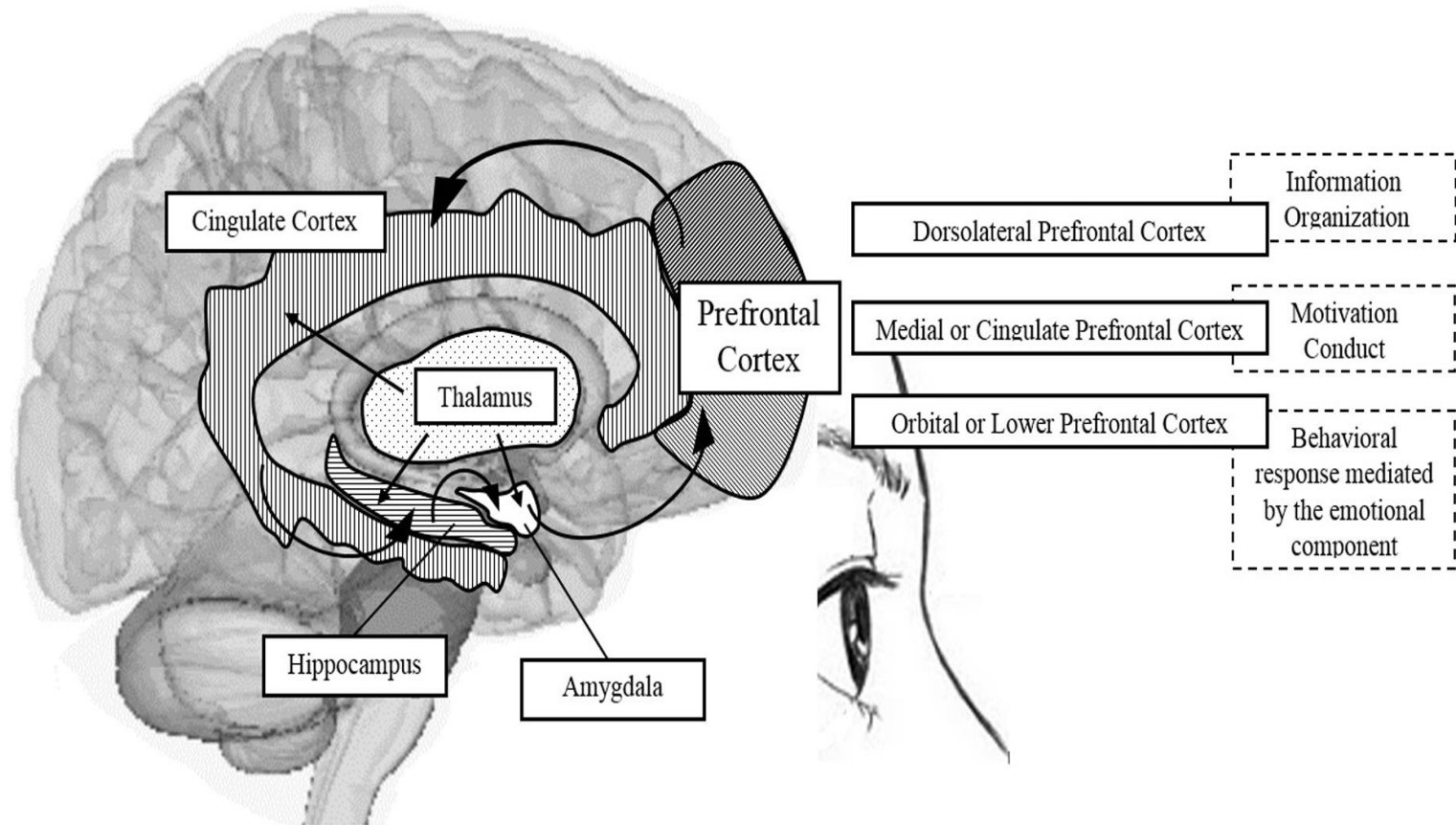
- Frontal lobes comprise 20% of cortex
- Function as “CEO” of the brain



Prefrontal Cortex Roles and Responsibilities



- Controls impulses and emotions
- Forms judgments
- Helps people understand one another
- Engages in abstract thinking and analysis
- Regulates behavior
- Predicts outcomes



Metacognition-”Thinking about thinking”

Knowledge	Knowing what one does and doesn't comprehend and understanding the factors that affect cognition
Planning	Establishing a strategy and determining appropriate use of resources for the current task
Monitoring	Gauging one's current performance on a task, identifying and correcting errors
Evaluating	Assessing one's performance and identifying areas that can be improved in the future

Anosognosia

- A deficit of self-awareness
- Also known as a “lack of insight”
- Refers to a condition in which a patient is unaware of deficits resulting from a brain injury



Anosognosia

- “I’m ok to drive. Ninety percent of driving occurs straight in front of you...”
 - *RS, a 60 y/o with severe left neglect and left homonymous hemianopsia.*

- “Your mailboxes are not set up like USPS. Had the names been to the right side, I would have scored 100%...”
 - *DH, 58 y/o rural mail carrier with severe left neglect after finding out his score on a mail delivery task was 56% accuracy.*

i have no need to take my
self-awareness medication
because i'm completely
awesome.



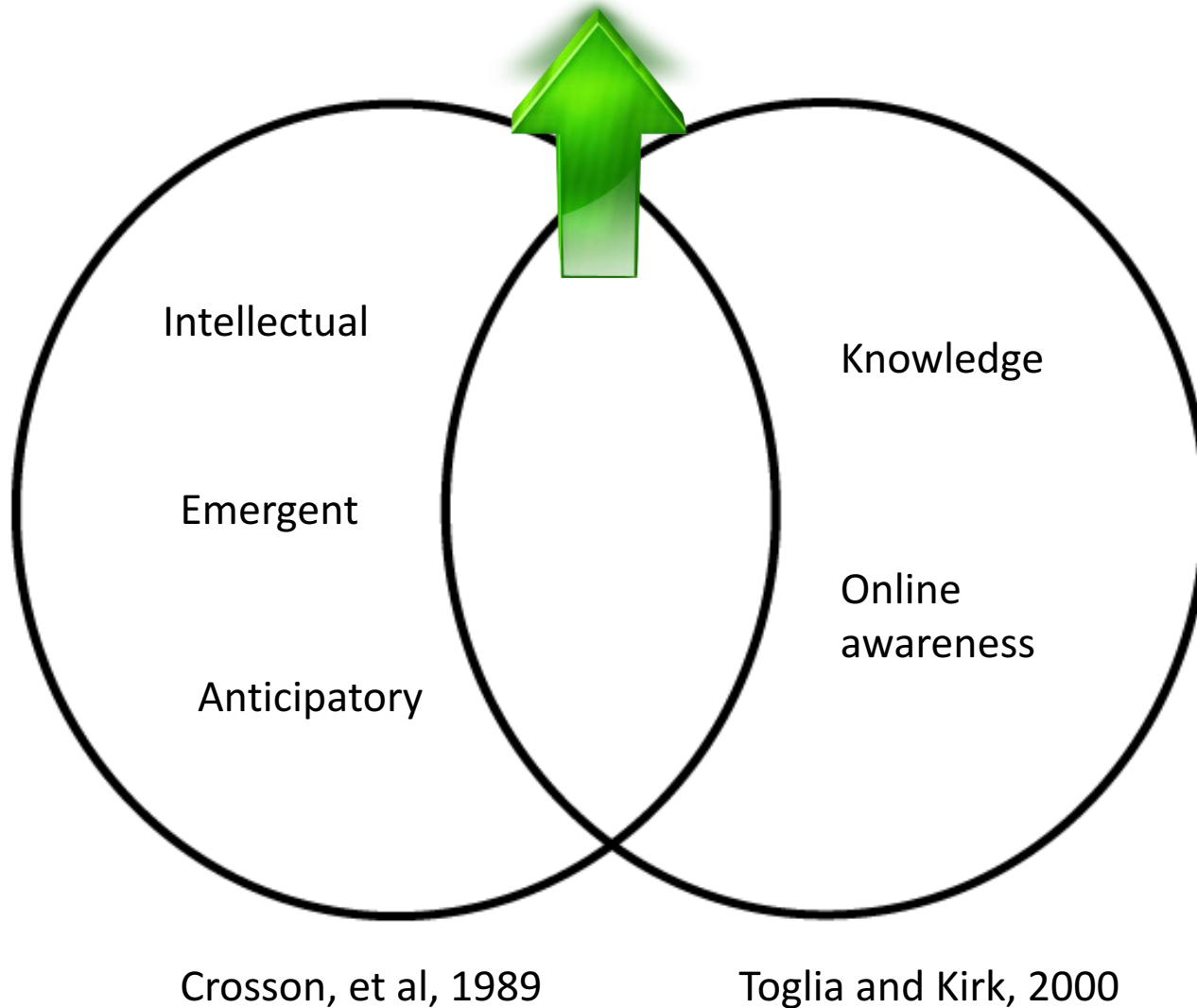
Self-awareness deficits
in brain injury have been reported as
occurring in up to **97%** of patients with
Traumatic Brain Injury.

Sherer. M, et al, 1998

What's in YOUR tool belt?



Treatment for Awareness Deficits



Model of Awareness

- Anticipatory Awareness: Patient is able to anticipate when an impairment will affect performance and implement strategies.
- Emergent Awareness: Patient recognizes when an impairment affects their ability as it occurs.
- Intellectual Awareness: Patient may be aware a problem has occurred, but is unable to identify it.

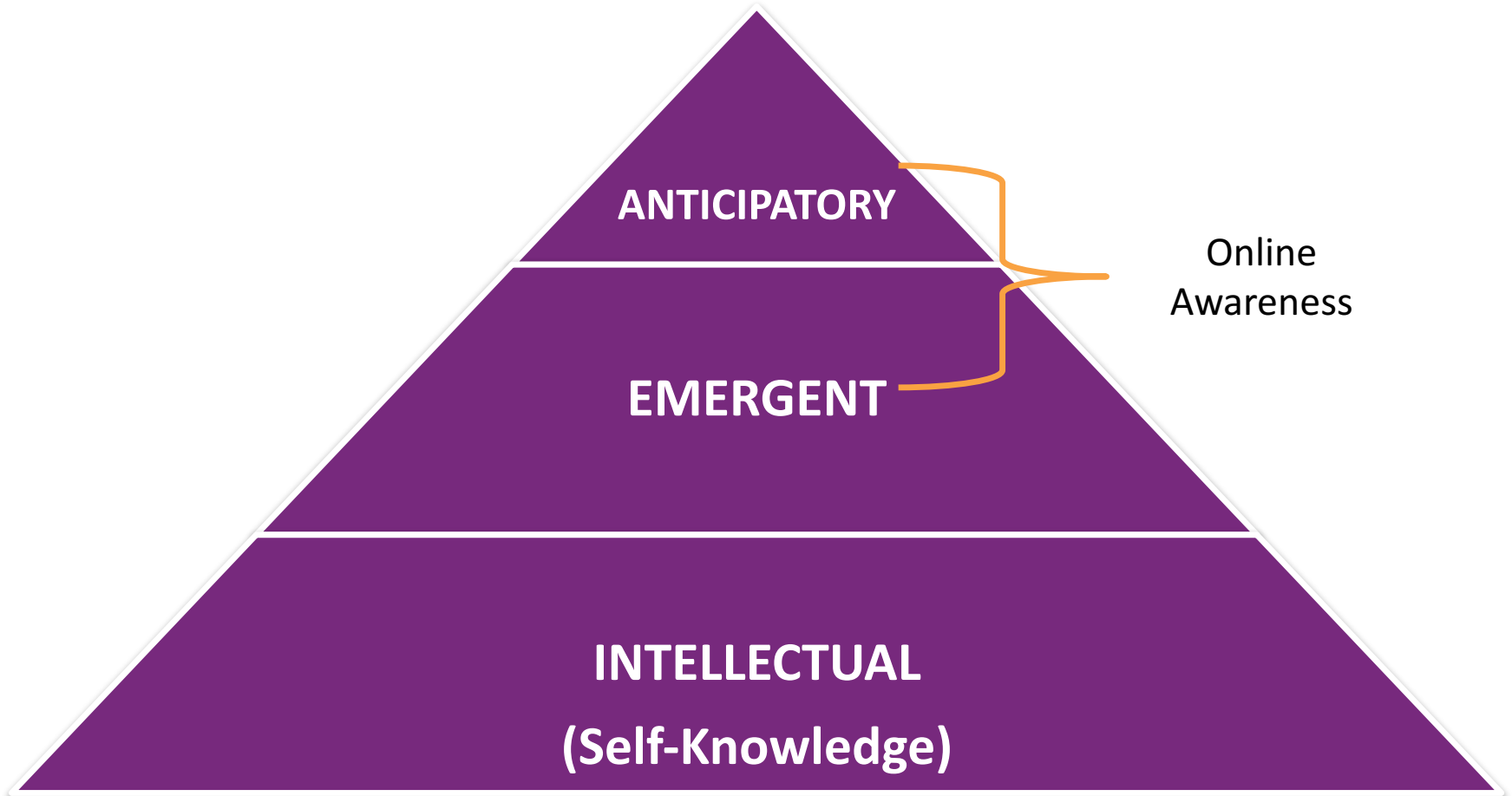
Crosson, et al., 1989

Dynamic Comprehensive Model of Awareness-Toglia and Kirk 2000

- Dynamic instead of hierarchic relationship
- Knowledge beliefs, task demands, and context of situation
- Distinction between knowledge and online awareness
 - Self knowledge-understanding of one's strengths and limitations
 - Online awareness-metacognitive skills applied in the context of an activity

Toglia and Kirk, 2000

Models of Awareness



Intellectual Awareness Deficits

- Trouble with understanding at the lowest level that difficulties exist with performing a particular activity
- Likely also have challenges with abstract reasoning and memory
- Not able to generalize knowledge from one situation to another

- AKA Deficits in Self-Knowledge

Copyright 1996 by Randy Glasbergen.
www.glasbergen.com



"Hi, this is Cindy! To ask me out, press 1. To break up with me, press 2. To tell me I'm cute, press 3...."

Training Intellectual Awareness

- Concrete language
- Education about personal brain injury
- Strengths and Weaknesses Lists
- Cued external compensatory strategies
- High rate of repetitions

External Compensatory Tools

- Journals
- Videotape review
- Social Stories
- Alarms
- Written daily schedule
- Sticky notes

- Significant deficits in memory provide the most significant barrier to developing Intellectual Awareness/Self-Knowledge
- May always require external cues from caregiver
- Training Caregivers is Very Important

Emergent Awareness Deficits

- Difficulty recognizing a problem while it is actually happening
- Trouble monitoring the connection between actions and environment
- Deficits at this level are the **MOST FRUSTRATING** to caregivers and clinicians

Anticipatory Awareness Deficits

- Unable to realize in advance that a particular deficit might cause a problem in the future
- Cannot predict that a learned compensatory strategy could help AVOID a problem

On-line Awareness Deficits

- Term used to refer to the concepts of deficits in emergent and/or anticipatory awareness
- Idea that awareness deficits are task and context dependent

Training Techniques



- Corrective Feedback
- Compensatory Strategy Selection and Training
- Rating Scales

PATIENT COMPETENCY RATING SCALE (PCRS)

Prigatano, 1986

Patient Competency Rating (Patient's Form)

Source: Prigatano, G. P. and Others (1986). Neuropsychological Rehabilitation After Brain Injury. Baltimore: Johns Hopkins University Press.

Identifying Information

Patient's Name: _____

Date: _____

Instructions

The following is a questionnaire that asks you to judge your ability to do a variety of very practical skills. Some of the questions may not apply directly to things you often do, but you are asked to complete each question as if it were something you "had to do." On each question, you should judge how easy or difficult a particular activity is for you and mark the appropriate space.

Competency Rating

1	2	3	4	5
Can't do	Very difficult to do	Can do with some difficulty	Fairly easy to do	Can do with ease

- _____ 1. How much of a problem do I have in preparing my own meals?
- _____ 2. How much of a problem do I have in dressing myself?
- _____ 3. How much of a problem do I have in taking care of my personal hygiene?
- _____ 4. How much of a problem do I have in washing the dishes?
- _____ 5. How much of a problem do I have in doing the laundry?
- _____ 6. How much of a problem do I have in taking care of my finances?
- _____ 7. How much of a problem do I have in keeping appointments on time?

Features of the PCRS

- 3 available versions
 - Patient
 - Family Member
 - Clinician
- Utilizes 30 questions
- Rank from 1-5
- Max Score 150
- Easy to print and utilize
- Free on COMBI website

www.tbims.org

The Oreo Principle...



Patient Self-Evaluation

- **Before task:**

- How difficult will this be?
- Will I need to use any strategies?
- What strategies should I use?
- What problems might come up?

- **After task:**

- How difficult was this for me?
- How accurate was I?
- How much help did I need?
- What could I do differently next time?

Clinical Activities

- *Videotape review*
- *Role play with other patients in a group*
- *Peer Counseling*
- *Cognitive obstacle course*
- *Community-based activities*

COGNITIVE OBSTACLE COURSE

- Set-up A Pill/Medicine Box
- Respond To Email
- Alphabetical Filing
- Timed Testing
- Pack A Lunch Box
- Write A Note To A Teacher Or Friend
- Mailbox Sort
- Navigating Automated Answering Service
- Pay A Telephone Bill
- Pack Given A Scenario

COGNITIVE OBSTACLE COURSE



Provide opportunities for
self-discovery of errors.

Additional Components of Training

- Set appropriate goals **WITH** the client
- Reduce strategies and control as increased safety and awareness is observed
- Educate family, friends and other caregivers

Increasing awareness can lead to lower self-esteem and increased incidence of depression.

Carroll & Coetzer, 2011

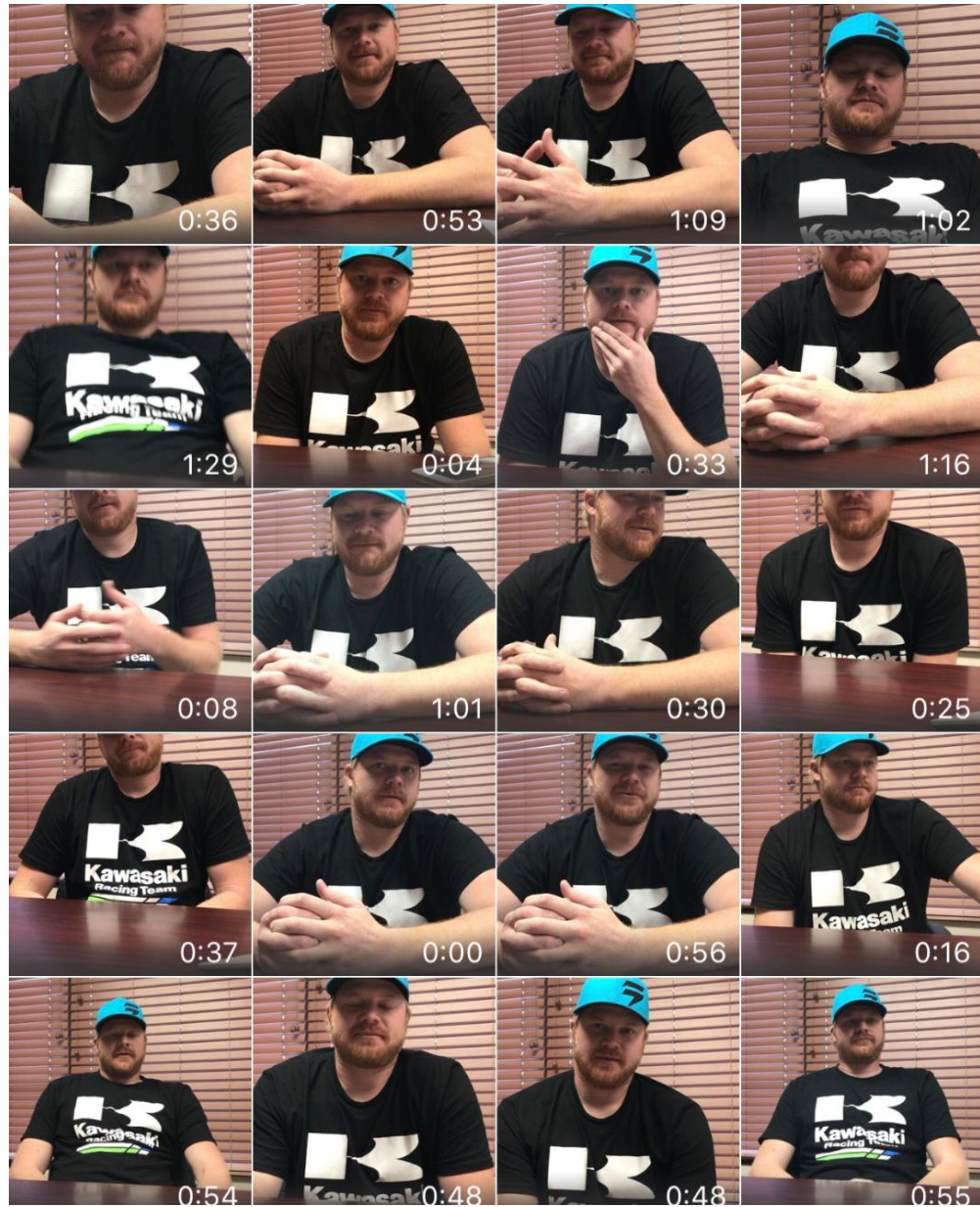
The fruits of our labor may be harvested after patients leave our programs...



Case Study

- Zach, 35 year old
- TBI in April 2016 due to motocross accident
- GCS of 11 in ER with positive loss of consciousness at scene
- Numerous fractures to scapula, ribs, clavical, and both arms
- Hospital course complicated by confusion, agitation and increased pain
- Required skilled therapy during post-acute rehab to facilitate increased self-awareness of related cognitive and emotional changes





Knowledge
is
POWER.

Francis Bacon



KEY POINTS

- Self-awareness deficits affect almost all survivors of brain injury.
- Self-awareness is a complex skill of cognition (METACOGNITION).
- There are many different strategies to use during rehab.
- Improvements in self-awareness take time.

RESOURCES

- Carroll, E., & Coetzer, R. (2011). Identity, grief and self-awareness after traumatic brain injury. *Neuropsychological Rehabilitation*, 21(3), 289-305.
- Crosson B, Barco PP, Velozo CA, Bolesta MM, Cooper PV, Werts D, Brobeck TC. (1989). Awareness and compensation in postacute head injury rehabilitation. *Journal of Head Trauma Rehabilitation*, 4, 46-54.
- Fleming J. (2010). Self-Awareness. In: JH Stone, M Blouin, editors. International Encyclopedia of Rehabilitation. Available online: <http://cirrie.buffalo.edu/encyclopedia/en/article/109/>
- Fleming J, Ownsworth T. (2006). A review of awareness interventions in brain injury rehabilitation. *Neuropsychological Rehabilitation*, 16, 474-500.
- Prigatano GP, Klonoff PS. (1998). A clinician's rating scale for evaluating impaired self-awareness and denial of disability after brain injury. *The Clinical Neuropsychologist*, 12, 56-67.
- Prigatano GP, Schacter DL. (1994). Awareness of deficit after brain injury: Clinical and theoretical Issues. *Clinical NeuroPhysiology*, 91 (4), 315-316.
- Sherer M, Oden K, Bergloff P, Levin E, High WM Jr. (1998). Assessment and treatment of impaired awareness after brain injury: implications for community re-integration. *NeuroRehabilitation*, 10(1), 25-37.
- Toglia, J. & Kirk, U. (2000). Understanding awareness deficits following brain injury. *NeuroRehabilitation*, 15, 57-70.
- Toglia, J. P. (1991). Generalization of treatment: A multicontext approach to cognitive perceptual impairment in adults with brain injury. *American Journal of Occupational Therapy*, 45, 505-516.