Objectives

- Understand the fundamentals of errorless learning
- Conceptualize the theory supporting the use of errorless learning with individuals who have sustained a brain injury
- Distinguish between explicit and implicit memory. State the reasons why these differences are important when developing errorless learning practices
- Recognize the importance of meaningful, real-life tasks and activities within cognitive rehabilitation

Objectives

- Appreciate the importance of family and caregivers in the application of errorless learning principles in order to facilitate generalization and carryover of routines
- Articulate ways to immediately incorporate errorless learning principles into treatment and/or care plans of individuals with brain injuries
Fundamentals

Learning
- Acquisition of knowledge and skills through study, practice, or experience

Memory
- Encoding - taking in and processing the knowledge or skills
- Storage
- Retrieval - Expression of what you have acquired

Neuroplasticity
- Changes resulting from practice and experience
- Creation of new neural pathways and connections

Types of Memory

Explicit
- Declarative
- Conscious and associative
- Facts, words, numbers, experiences
- Recalling *that...or what...*

Explicit Memory

Temporal lobe

Frontal lobe
Types of Memory

**Implicit**
- Procedural
- Skills, procedures, habits
- Recalling *how to*...
- Tie your shoes, swing a golf club

Implicit Memory

Learning and Memory

- **Study & explicit memory – frontal & temporal lobes**
  - Facts and experiences – attention and association
  - Repetition
- **Practice & implicit memory – basal ganglia**
  - Routine and repetition – habits and procedural
  - Physical change
- **Neuroplasticity**
Learning and Memory - After an Injury

Explicit Learning
- attention and association
- facts and experiences

Errorless Learning
- positive, adequate support

Repetition

Implicit Learning
- routine and repetition - habits and procedures

Physical change

Neuroplasticity

Errorless Learning

Perfect practice via positive, adequate support
Practice with everyday people
Meaningful activities within real-world environments

+ Repetition, repetition, repetition

= Success • Neuroplasticity

Perfect Practice

Avoid or reduce errors
Success each time
- Reinforce correct responses.
- Avoid punishment or consequences
Adequate support with gradual and systematic fading
Collaborative
Consistent
Positive and Adequate Support

Don’t ask, just tell
Avoid non-verifiable, declarative questions
Verbal cues and scripts
Gestural cues
Pre-teaching
Modeling

Provide training for all staff

Positive and Adequate Support

External Supports
- Environmental modifications
- Checklists
- Memory books
- Androids, iPhones, and iPads

Therapy team, caregivers, and family
- Collaboration
- Communication
- Consistency

Teachable moments
- Taking every opportunity to train and educate
- Recognizing those moments
Meaningful Activities

Functional
Personalized
Paramount
• Safety
• Supervision
• Assistance

Real-World Environments

Provide natural, meaningful context
Teach the skills where they are needed
Simulate demands

Case Studies
**Errorless Learning**

Perfect practice via positive, adequate support
Practice with everyday people
Meaningful activities within real-world environments

* Repetition, repetition, repetition

= Success - Neuroplasticity

**Success**

- Meeting goals
- Regaining function
- Acquiring new abilities
- Quality of life indicators
- Reduced reliance on caregivers
- Fewer negative behaviors

**References**


References
