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# Occupation Based Cognitive Rehab for Adults with Brain Injury or Stroke

An Introduction to Structured System for Using Real  
Life Tasks and Activities to Increase Independence

Rob Koch OTR/L

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## Learning Outcomes

- Describe the 3 global elements of functional cognitive activity
- Select appropriate therapy activities for persons at 8 levels of cognitive functioning
- Identify the Functional Cognitive Activities Evaluation Scale to evaluate performance, set goals and measure progress

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My goal is that you will  
take away some new  
therapy tasks and  
activities you can start  
using in your setting  
...tomorrow!

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## Acquired Brain Injury Population

### Traumatic Brain Injury (TBI)

Focal (GSW, penetrating etc.)

#### Closed head injuries

- Post-Concussive Syndrome
- Contusion
- Hematoma
- Diffuse Axonal Injury
- Blast Injuries

### Brain tumors

### Infectious Disorders

- Meningitis
- Encephalitis

### Stroke (CVA)

Cerebral hemorrhage

- AVM
- Aneurysm

Cerebral infarction

(Ischemia) due to:

- Embolism
- Thrombosis

### Anoxic Brain Injury

Cerebral anoxia due to:

- Respiratory distress
- Blood loss
- Poisoning

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## Introduction

The approach being introduced in this webinar is an attempt to bridge the gap between the techniques and goals of traditional cognitive rehabilitation and those of a functional approach that applies to “real-world” performance.

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## Occupation Based Approach

“Functional” or “Performance based” or “Real life”

Key Point: Practicing real-life activities facilitates independence in real life situations

Makes use of an intervention process that facilitates engagement in occupation to support participation in life.”

There is less emphasis on underlying brain processes, cognitive sub-skills or performance components.

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### 3 Global Elements of Functional Cognitive Activity

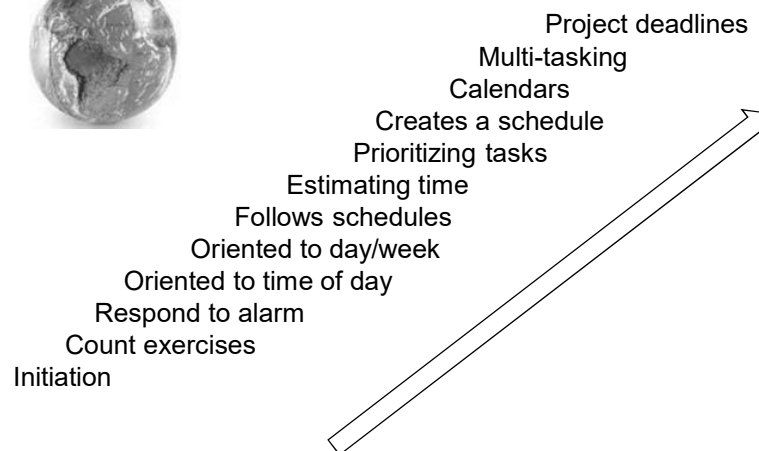


1. **Interpersonal relationships:** self awareness, interpersonal skills, information processing
2. **Environment:** physical space, objects around the person, personal belongings
3. **Time:** time parameters, time limits, schedules

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### Time Awareness and Management

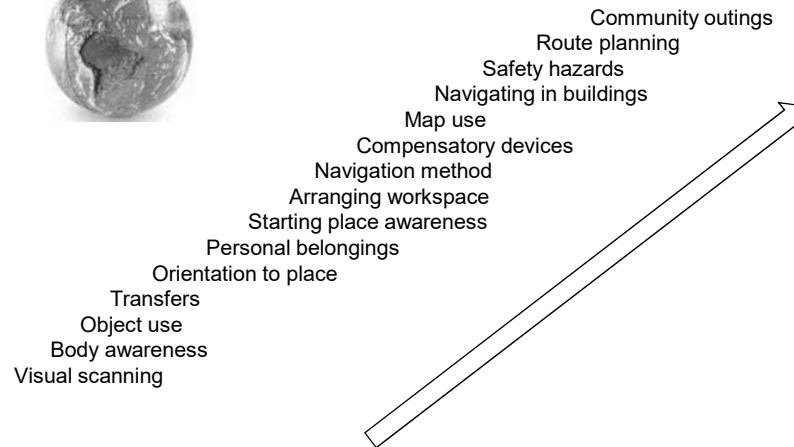


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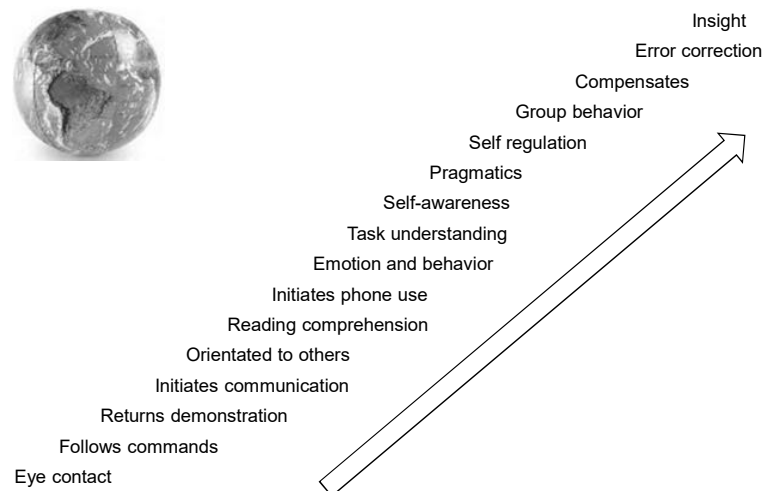
## Environmental Awareness and Management



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## Interpersonal Awareness and Management



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## Self Awareness and Insight

Developing self awareness of one's cognitive deficits is the key goal in helping a person become independent.

Once a person articulates awareness of their problem areas and insight into why they have problems, they can learn ways to compensate

If a person does not understand they have deficits, someone else will have to care for them.

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Level	You're LOST!	You're LATE!	You're WRONG!	Current Awareness Status	Intervention
8	Will use GPS next time	Will have to mark on my calendar next time	Have had trouble taking good notes	Considers future plans Insight into diagnosis	Receptive to criticism Use mood tracker
7	Guess should have planned before I left	Next time I will set alarm so I get up earlier	Thanks for letting me know will do better next time	Rational verbal responses Comes up w alternatives	Teach verbal strategies Encourage sleep journal Group feedback
6	Must've taken a wrong turn somewhere	My phone died and I couldn't find a clock	Took a lot longer to get finished than I thought	Reasoning develops Identifies multiple deficits	Discuss alternatives Teach to read social cues Awareness questionnaires
5	Someone gave me wrong directions	You didn't give me enough time to finish	Whats the difference? This sucks!	Recognizes memory deficit Denial Conscious self awareness	Validate feelings Video feedback Set limits on discussion
4	Which way should I go?	When was I supposed to get here?	What did I do wrong?	Recognizes physical and sensory deficits only Retains new memories	Re-direct Provide alternative tasks Avoid arguing
3	Where was I supposed to go?	What time is it?	This is too hard!	Oriented Unsettled demeanor	Reinforce orientation Re-assure
2	Cant find it!	Didn't hear bell!	I'm tired!	Cause effect Visceral responses to change Emotional outbursts	Provide rest breaks Praise/encourage Use errorless learning
1	Propels wrong direction	Ignores prompt	Continues task or exercise	Physical instability Sensory disturbances	Hand over hand Provide stability

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## 8 Cognitive Functioning Levels

- **High Levels:** (Outpatient, Day Programs, Vocational training) (*PCS, MTBI*)
  - Level 8. "Planning/Multi-Tasking"
  - Level 7. "Out the Door"
- **Mid-Levels:** (Inpatient, SNF, Outpatient, Home health) *Developing self awareness*
  - Level 6. "Organize the Therapy Session"
  - Level 5. "Beyond the Room"
  - Level 4. "Follow a Time Schedule"
- **Low Levels:** (Acute, Inpatient, SNF, Post-acute rehab) *Posttraumatic Amnesia (PTA)*
  - Level 3. "Looking Around the Room"
  - Level 2. "What Time is It?"
  - Level 1. "Initiating the Next Step"

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## Cognitive Scales

- JFK Coma Recovery Scale
- Rancho Los Amigos (10 Levels)
- Allen Cognitive Levels (6 Levels)

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## Functional Cognitive Activities Evaluation Scale

- Based on the 3 global elements
- Five rows for each level
- Each item on the scale is a key indicator of what should be accomplished at that level to move up to the next level



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## Setting Goals

To set goals ... choose a level, then a global element

Examples of goals for 3 different people:

Level 5 – *Environmental awareness/management*

- “Patient will require supervision to navigate within the rehabilitation building using a map.”

Level 2 – *Time awareness/management*

- “Patient will require minimal cues to change activity in response to auditory alarm.”

Level 7 – *Interpersonal awareness/management*

- “Patient will be independent to take notes when asking for directions from others.”

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## Measuring Progress

### FCA Progress Guide

A listing of key skills a person must achieve at each of the levels to move up

The Progress Guide can also be used to generate goals



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## Measuring Progress

### **When should the person move up to the next level?**

Once they show consistent scores of Supervision, Modified Independent or Independent (FIM score 5 or higher)

**in at least of 2 of 3 global elements**

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## Measuring Progress

**When should the person be discharged?**

No change after 3-5 times/week for 4-6 weeks

- Remains at the same activity level
- No change in amount of cueing required
- No change in complexity of tasks in therapy
- No change in work speed
- No change in self-awareness

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## Using Functional Cognitive Activities Website to Plan Intervention

[www.functionaltherapyactivities.com](http://www.functionaltherapyactivities.com)

Then click on button for:  
Functional Cognitive Activities



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## Using Occupation Based Kits (Ready to Use Real-Life Materials)

- Picture frame assembly
- Eyeglasses repair
- Lamp assembly
- Flashlight assembly
- Sewing
- Standing Pipe Tree
- Med Management
- Office Supplies
- Luggage
- File Folders
- Masking tape designs
- Make-up
- Fishing
- Table setting
- Hardware organizer
- Shoeshine
- Child care
- Knot tying
- Floor Tiles
- Business receipts

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## What Does Your Therapy Setting Afford for Practicing Real Life Activities?

- Copy machine
- Kitchen
- Computer
- Fax
- Windows
- Work bench
- Bookshelf
- Bulletin board
- Grocery shelf
- Wall Photos

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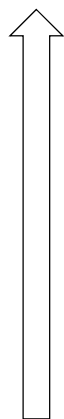
## 4 Methods of Compensating:

- “Cognitive Prosthetics”: (External Devices) phones, planners, calendars, notebooks for memory and organization deficits, alarms, electronic devices, timers
- Strategies: *Mental Procedures* such as rehearsal, mnemonics, self talk, self questioning, lists, highlighting
- Pragmatics for communicating appropriately in the world, social skills training, self regulation, self control
- Structuring the environment to increase safety and efficiency for those who can’t remember or retrieve strategies as noted above

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## Cognitive Levels in Detail



- Level 8. “Planning/Multi-Tasking”*
- Level 7. “Out the Door”*
- Level 6. “Organize the Therapy Session”*
- Level 5. “Beyond the Room”*
- Level 4. “Follow a Time Schedule”*
- Level 3. “Looking Around the Room”*
- Level 2. “What Time is It?”*
- Level 1. “Initiating the Next Step”*

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## Level 1: Initiating the Next Step

**Overall Goal:** Move on to the next "Step" or "Task" or "Exercise" in a sequence without human prompting

**Level 1 performance characteristics according to 3 global elements:**

- Interpersonal: poor eye contact, cues to follow one-step verbal instructions, flat affect, passive, lethargic
- Environmental: scans only within arms reach, cues to turn off alarm, cues for each step of transfer
- Time: unaware of time/date, max cues to initiate change of task, ignores alarm, unable to stay on task

**Treatment activities for this level:**

- "Step by Step": Initiates moving on to the next step/task /exercise in a series
- "Numbered Sequence": Moves on to the next task or exercise in a specific order

**Level 1 Goals:**

- Interpersonal: sustains eye contact, follows simple verbal directions or returns demonstrations
- Environmental: locates checklist when prompted, finds and presses button to turn off alarm
- Time: switches to a new task or exercise, responds to an auditory alarm, counts exercises to completion



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## Level 2: What Time Is It?

**Overall goal:** Move on to next task or exercise specific time of day

**Level 2 performance characteristics according to 3 global elements:**

- Interpersonal: replies to others if addressed, recalls names of familiar persons, reads words/ phrases
- Environmental: cues to use checklist, cues to state current location, cues for safe transfers
- Time: completes series of tasks or exercises, attends to clock or calendar, initiates moving on after alarm sounds

**Treatment activities at this level:**

- "Interrupts": stop work on a **primary** task at designated time; then perform **secondary** task, repeats 3 or times
- "Time Blocks": works at a task or exercise until the specified time point, then on to next task or exercise

**Level 2 Goals:**

- Interpersonal: looks at others when talking, greets friends/family by name, able to calm self in reasonable time,
- Environmental: keep checklist within reach during tasks or exercises, looks to checklist for next task,
- Time: reports correct time if asked, changes task or exercise at correct time



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## Level 3: Looking Around the Room

**Overall goal:** Find items and navigate safely in the home or therapy room

**Level 3 performance characteristics according to 3 global elements:**

- Interpersonal: initiates greetings, recalls names of unfamiliar persons, reads simple written directions
- Environmental: uses checklist during session, oriented to current location, transfers safely without cues
- Time: cues to set alarm if needed, stays on task until completed, checks list to see upcoming tasks or exercises

**Treatment activities at this level:**

- "Repeats": moves between start location and a secondary location repeatedly during session
- "Locators": navigates to different locations in the room or home at designated times during the session

**Level 3 Goals:**

- Interpersonal: initiates asking others for assistance as needed, spontaneously uses phone
- Environmental: returns to start location, recalls route to locations outside field of view
- Time: monitors time throughout the session, initiates moving to next location in a room or house



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## Level 4: Follow a Time Schedule

**Overall goal:** Stay on time to carry out multiple tasks or exercises during a session

**Level 4 performance characteristics according to 3 global elements:**

- Interpersonal: appropriately addresses others, initiates using phone, takes basic notes when instructed
- Environmental: recalls items in multiple rooms, carries checklist from task to task, returns to start point
- Time: cues to cross off completed tasks, cues to complete multi-step tasks, writes time accurately when needed

**Treatment activities at this level:**

- "Follow a Schedule": Moves on to the next task or exercise on schedule - whether task is completed or not.

**Level 4 Goals:**

- Interpersonal: expresses awareness of being off schedule, recognizes physical deficits, performs simple math
- Environmental: navigates by following verbal directions, keeps schedule nearby during activities
- Time: follows time schedule accurately, sets own alarm if needed, recalls unfinished tasks during session



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## Level 5: Beyond the Room

**Overall goal:** Navigates safely and efficiently in single or multi-level buildings

**Level 5 performance characteristics according to 3 global elements:**

- Interpersonal: cues to clarify tasks before starting, argues or denies problems with tasks
- Environmental: knocks before entering rooms, navigates by written or verbal directions, carries schedule at all times
- Time: crosses off finished tasks on list, stays on tasks until complete, cues to estimate time needed for tasks

**Treatment activities at this level:**

- "Repeats": navigates between start location and secondary location on same floor level repeatedly during session
- "Sequenced Route": moves from location to location in sequence, then returns to start when finished
- "Complex Scavenger Hunt": carries out multiple tasks in different locations throughout a building

**Level 5 Goals:**

- Interpersonal: expresses awareness that he is lost/confused, writes notes when given verbal directions
- Environmental: navigates efficiently within building, uses maps/landmarks/signs to navigate
- Time: monitors time while moving around the building, returns to start point on time, combines tasks along route



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## Level 6: Organize the Therapy Hour

**Overall goal:** Efficiently schedule a series of complex tasks to carry out a specific role in life

**Executive Functioning:** Plan/carry out complex goal directed behaviour and adapt to novel situations

**Level 6 performance characteristics according to 3 global elements:**

- Interpersonal: cues to correct errors, clarifies assignment before starting, recognizes/admits errors,
- Environmental: navigates multi-level building, needs cues to plan route, seeks help when navigating
- Time: plans ahead by estimating time, completes tasks in reasonable time

**Treatment activities for this level:**

- "Organize the Therapy Session": plan, then carry out a list of tasks or exercise to accomplish in session

**Level 6 Goals:**

- Interpersonal: keeps notes organized, cues to create charts for organization, self corrects errors
- Environmental: avoids backtracking when navigating in buildings, navigates backwards to return to start
- Time: prioritizes tasks according to time limits, outlines plan before starting, numbers tasks to sequence



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## Level 7: Out the Door

**Overall goal:** Navigate safely and efficiently in community settings as necessary to resume prior role in life

**Level 7 performance characteristics according to 3 global elements:**

- Interpersonal: asks appropriate people for help, articulates cognitive deficits, adjusts behaviour as needed
- Environmental: uses maps to locate unfamiliar places, cues to plan efficient route,
- Time: does time critical tasks first, estimates time for tasks accurately, adjusts work speed to meet time limits

**Treatment activities at this level:**

- "Community Scavenger Hunt": navigate to establishments in the community to carry out complex tasks

**Level 7 Goals:**

- Interpersonal: admits he is lost or needs help, anticipates consequences of decisions on outings
- Environmental: plans efficient route to unfamiliar destination, attends to surroundings for safety
- Time: revises time schedule as necessary, estimates travel time during outing



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## Level 8: Planning/Multi-tasking

**Overall goal:** Complete projects or solve complex problems by efficient planning and multi-tasking

**Level 8 performance characteristics according to 3 global elements:**

- Interpersonal: spontaneously engages others, self-corrects errors, evaluates/ modifies own behaviour to match situation, generates goals for self improvement, compensates for deficits, receptive to criticism
- Environmental: aware of safety hazards, plans most efficient route before starting, revises route
- Time: multi-tasks to not waste time, prioritizes tasks by time, creates own time schedule

**Treatment activities at this level:**

- "Planning": plan and carry out a project to completion within an allotted time frame
- "Multi-Tasking": coordinating a set of complex interleaving tasks to complete a project on time

**Level 8 Goals:**

- Interpersonal: honestly appraises own performance, articulates self-awareness of deficits, demonstrates insight into condition, implements compensatory methods to overcome deficits
- Time: completes project within allotted time, multi-tasks efficiently to conserve time during activities
- Environmental: keeps work space organized, gathers all materials before starting project



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## Types of Cognitive Assessment

- Unstructured observation/Task Analysis (PRPP)
- Structured observation (FCA, FIM)
- Performance based (AMPS, EFPT, Safe at Home)
- Standardized screens (MOCA, MMS, SLUMS)
- Standardized tests (TCA, BIT, TEA)

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