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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

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

## Acquired Brain Injury Population

<table>
<thead>
<tr>
<th>Traumatic Brain Injury (TBI)</th>
<th>Stroke (CVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focal (GSW, penetrating etc.)</td>
<td>Cerebral hemorrhage</td>
</tr>
<tr>
<td>Closed head injuries</td>
<td>• AVM</td>
</tr>
<tr>
<td>• Post-Concussive Syndrome</td>
<td>• Aneurysm</td>
</tr>
<tr>
<td>• Contusion</td>
<td>Cerebral infarction</td>
</tr>
<tr>
<td>• Hematoma</td>
<td>(ischemia) due to:</td>
</tr>
<tr>
<td>• Diffuse Axonal Injury</td>
<td>• Embolism</td>
</tr>
<tr>
<td>• Blast Injuries</td>
<td>• Thrombosis</td>
</tr>
</tbody>
</table>

**Brain tumors**

<table>
<thead>
<tr>
<th>Infectious Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Meningitis</td>
</tr>
<tr>
<td>• Encephalitis</td>
</tr>
</tbody>
</table>

**Anoxic Brain Injury**

<table>
<thead>
<tr>
<th>Cerebral anoxia due to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Respiratory distress</td>
</tr>
<tr>
<td>• Blood loss</td>
</tr>
<tr>
<td>• Poisoning</td>
</tr>
</tbody>
</table>
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.

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.
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

**Time Awareness and Management**

- Project deadlines
- Multi-tasking
  - Calendars
  - Creates a schedule
  - Prioritizing tasks
- Estimating time
- Follows schedules
- Oriented to day/week
- Oriented to time of day
- Respond to alarm
- Count exercises
- Initiation
Environmental Awareness and Management

- Community outings
- Route planning
- Safety hazards
- Navigating in buildings
- Map use
- Compensatory devices
- Navigation method
- Arranging workspace
- Starting place awareness
- Personal belongings
- Orientation to place
- Transfers
- Object use
- Body awareness
- Visual scanning

Interpersonal Awareness and Management

- Insight
- Error correction
- Compensates
- Group behavior
- Self regulation
- Pragmatics
- Self-awareness
- Task understanding
- Emotion and behavior
- Initiates phone use
- Reading comprehension
- Orientated to others
- Initiates communication
- Returns demonstration
- Follows commands
- Eye contact
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.
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”

Cognitive Scales

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

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
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

Using Functional Cognitive Activities Website to Plan Intervention

www.functionaltherapyactivities.com

Then click on button for:
Functional Cognitive Activities
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
- Shooshine
- Child care
- Knot tying
- Floor Tiles
- Business receipts

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
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

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”
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

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
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

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
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 staring, 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
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

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)