Acquired Brain Injury: Cognitive Retraining and Executive Functioning

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Overview of ABI

Unique to each person
Invisible injury
Neuroplasticity
Mild isn't always mild
Aphasia is a language disorder that happens when you have brain damage. It is usually due to damage on the left side of the brain. Aphasia may make it difficult to understand, speak, read or write. It does not make you less intelligent or cause problems with the way you think, although brain damage can also cause other problems along with aphasia.
Cognitive-Communication Disorder

Difficulties with communication competence (listening, speaking, reading, written, conversational interaction) that result from underlying cognitive impairments (attention, memory, organization, information processing, problem solving and executive functions).

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Assessment

- Standardized assessment
- Self-assessment
- Interview
- Patient-centered goals
Goal-setting

- Functional
- Drill down
- Patient centered

Factors to Consider

- Cognitive fatigue
- Sleep difficulties
- Sensory sensitivities
- Lack of initiation/emotional control
- Lack of insight/self-awareness
- Slowed processing
- Mood swings
- Lowered tolerance of frustration
- Anxiety/depression
- Post traumatic stress disorder
Cognition

- Attention
- Orientation
- Memory
- Executive function

Attention

A complex thinking skill that has many different parts

- Focus on a task and keep focus
- Notice details around you
- Focus on one thing and ignore distractions
- Switch attention from one thing to another
- Attend to more than one thing at a time

Attention problems may lead to difficulty

- Listening to people talk
- Reading a story from start to finish
- Tuning out distractions
- Watching a TV program or movie
- Driving
- Completing a task
Orientation

The ability to identify person, place, time, and situation at that moment in time or relatively close to the present time

Person: who they are (state name)

Place: where they are

Time: accurately identify morning/night or actual time (hour, day, month, date, year)

Situation: why they are in the hospital, what brought them there

Tools to use to help alleviate orientation deficits:

- Calendar
- Clocks
- Phones
- Notepads
- Visual aids
- Maps

Memory

Comprised of many parts working together to accomplish tasks and store information for future use

- Short-term - What a person can hold in their mind - has a short duration and limited capacity.
- Working memory - short term memory with the ability to use that information for retrieval or to store in long term memory.
- Long-term - events that you recall from several years past, including childhood memories and knowledge base.
  - Not typically as affected in people with ABI than short-term memory
Memory (continued)

Here are some short-term/working memory problems that are common in people with ABI:

- Forgetting important details of a conversation, such as remembering to pass along a phone message - may forget being asked to pass along the phone number
- Forgetting where you left things, like keys, a cell phone, or a planner
- Feeling unsure of what you did or said this morning, yesterday, or last week; this can lead you to say things or ask the same questions many times
- Losing track of time or feeling unsure of what day it is
- Being unable to retrace a route you took earlier in the day or week
- Forgetting all or part of what you read in a book or what you saw in a movie

Executive Functioning - The control center of the brain.

- Initiation
- Impulsivity
- Organization
- Planning
- Prioritizing/Sequencing
- Problem Solving/decision making
- Self awareness/insight
Initiation

Initiation is the ability to start doing something you should or want to do.

Initiation requires the person to do the following:

- Evaluate what needs to be done
- Make a plan about how to start doing it
- Put the plan into action

When you have difficulty with initiation, often you know what you need to do and how to do it, it's getting the task started that is hard.

Impulsivity

Impulsivity is not being able to control impulses to say or do something that might not be appropriate for the situation and/or might not be safe. The brain injured person often is unable to consider the consequences of the action before acting, and often times afterward doesn't realize the impact the words or actions have made.

Examples would include saying something rude to someone that the rest of us might think but not say, buying something you can't afford, walking in front of traffic to get to something you want, trying to get ahead in a line.
Organization

Ability to organize the information you have in your head - includes relating pieces of information for purposes of deeper comprehension, paying attention to the most important information, and effectively planning and organizing information, and then being flexible with the plans. You organize things (papers, files, clothing) activities (maintain a schedule, move easily from activity to activity, organize work time effectively) thinking (placing ideas together in reasonable systems, being able to break large tasks into smaller tasks that fit together in a logical way, solving problems in a step-by-step manner).

Planning

The ability to determine what tasks need to be done to achieve a goal or outcome - and the steps necessary to complete the task.

Requires the person to decide what tools they need to perform the task, sequence the activities and determine how long it will take them to complete it

Example: if a person wants to cook a meal they must decide what they will cook, what ingredients they will need, where they can get the ingredients, what time to start cooking each item, and how much to cook.
Time management

Time management includes the ability to be aware of how much time something will take, change activity and pace based on time constraints, and modify schedule when new information is presented or a planned schedule goes awry. Time management also includes an awareness of the passage of time.

Many ABI survivors have difficulty predicting how much free time they will have in a day, how much time a task will take, and using their time effectively. When they don’t accurately gauge how much time something will take, they are often late for appointments, events or otherwise stray from their plan.
What Happens with Initiation, Planning, and Organization Problems?

When you struggle with initiation, planning, or organization, you likely

- Have a hard time starting or finishing things you try to do.
- Have a hard time with tasks that used to be easy, such as paying bills or finishing a work assignment.
- Become absorbed in favorite activities at the expense of other more important tasks.
- Have a hard time trying new ways of doing things.
- Only be able to do one thing at a time, where before your injury you may have been able to do many things at once.

Prioritizing/Sequencing

The ability to arrange language, thoughts, information and actions in an effective order.

Put first things first.

Can affect a person’s ability to follow directions, verbalize information, and complete multi-step tasks.
Problem Solving

- The act of identifying and defining a problem, determining the cause, identifying possible solutions, choosing a solution, and implementing the solution.
- Problem solving can break down at any point in the above processes.
- Decision making requires problem solving skills to look at options and determine which might be best and why.

Example of Problem Solving

Having 2 important things scheduled at the same time
- Recognize there is a conflict
- Recognize that one will have to be rescheduled
- Determine which would be the best to reschedule
- Reschedule the task
- Think about how you ended up with 2 things scheduled at the same time so you don’t do it again.
Communication partner strategies

- Slow down
- Be brief and basic, avoid complex and abstract
- Repeat information if necessary - focus on key words and ideas
- Introduce new topics
- Summarize periodically
- Check for comprehension
- Allow time to respond

Treatment for TBI

- Use meaningful tasks from the person’s life
- Develop a hierarchy based on the individual’s areas of deficit/difficulty level and strategies to be used
- Keep in mind patient’s ability to initiate, attend, respond to new information, integrate and persevere
- Build in rest breaks when signs of cognitive fatigue surface
Metacognition

Help the patient develop:
- An awareness of their ability to function
- The ability to plan and execute a task (Plan, do, review)
- The ability to self monitor - adapt and modify as indicated

Social Communication Issues

- Too much - verbose, stray from topic
- Too little - difficulty keeping a conversation going
- Too late - slowed processing, loss of train of thought
- Too self focused - doesn't consider conversational partner or contextual cues
Examples of Strategies

Plan out the following day - put down the items which are important to accomplish, what time would be best to do them, and how long you think they’ll take.

- At the end of the day, look at your day, see what you accomplished, how long it took, and if it didn’t get done, what got in your way. Then plan your next day.
- Keep track of the tasks which take the most cognitive energy so you don’t put too many of those on the same day or close together during a day.
- Try to develop a routine for important daily tasks.

Use phone for reminders, notes, alerts, alarms, calendar, etc. If you aren’t smart phone or tech savvy, use paper notes, journal, calendar, etc.

Have a list of steps posted for tasks with which you have difficulty or scripts to navigate socially challenging situations.

Internal memory strategies

Mental/visual imagery
Association (semantic, phonological, relate to something familiar)
Categorization
Chunking
Repeat aloud
Create a word
Example of executive function impairment

Weekly staff meeting at 10:30 AM

Jim recently returned to work following a brain injury. He showed up to the meeting 15 minutes late and unprepared to share his weekly report. He looked tired and frustrated. He began sharing his portion with the team, but he wasn't making a lot of sense because his thoughts were so jumbled. The boss, Steve, cut him off in the middle of his report and moved on to other business. Steve gave the upcoming projects for the week, including individual responsibilities and deadlines for current projects. He then gave the date/time/place for an important lunch meeting with clients that everyone must attend. Jim was unable to process this information quickly enough to absorb it. He was still upset about his presentation, and wasn't focusing on what Steve was saying. Steve pulled Jim aside at the end of the meeting and let him know that he was disappointed in his tardiness, lack of preparation and overall appearance.

Steps for Jim to succeed

Find tools to help with sleep.

Set a reminder for time of meeting in phone.

Plan for and allow enough time to prepare for the meeting, write down information to share with the group.

Bring notepad to meeting to write down all important information, ask for a repeat of any information not obtained.

Ask for written instructions.

Find a co-worker who can assist.

Be open and honest about effects of injury.

Take breaks when needed.
What Can You Do?

- Do your best to get around 8 hours of sleep every night - keep a consistent sleep schedule.
- Exercise regularly.
- Eat a well balanced diet.
- Take breaks during the day.
- Follow a daily routine.
- Try to do only one thing at a time.
- Wear your glasses/contacts and hearing aids if you have them.
- Strive to keep a positive attitude.

Change Your Environment

- Make sure you have enough light for what you’re doing. If fluorescent lights bother you, use lamps or wear a visor.
- Do activities in a quiet place - limit distractions (TV, radio).
- Work in an uncluttered, neat space.
- Do the things that take the most concentration or thought when you are at your best.
- Ask people to speak slowly and clearly.
- In a busy space, face away from the crowd if you can.
- Limit size of conversation group if possible.