The Future of Dementia We Can Make a Difference

Pairing Cognitive Training With Specific Neurocognitive Testing To Improve Memory Function

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I have nothing to disclose

The Call to Action

Carol the Ph.D.: Came in for a dementia seminar, signed up for an evaluation, did therapy for a few sessions and disappeared. Would not allow us to inform her physician of the test results. She returned a year later looking worse which was seen in the memory decline in the testing. Again refused coordination with PCP. She came back a year later in winter coat on a 90 degree day in July

Forward in Time

- That was almost eight years ago. Since that time we have coordinated with the PCP even placing psychologists in their offices.
- Dementia testing is primarily at the request of the PCP
- But how does the PCP see the problem? Usually report from family and by then it is late.

The New Mandate

- Alzheimer's International Meeting of 2013
- We need to catch people earlier in their 50's and 60's not in their 70's and 80's
- Our outreach effort: Writing articles (Wall Street Journal) seminars, local papers, visiting the PCP's

Adult Signs Suggesting Need for Neuropsychological Evaluation

- Memory problems: Daily tasks, appointments, cooking, routine activities, conversations, loss of items (keys, glasses, credit cards, check book)
- Getting lost and disoriented in familiar places
- Unable to make decisions, stuck and obsessed
- Emotional: Accusations, paranoid, moody
- Conversations not making sense
- Old personality emerges, deepened depression
- Actions occur without rhyme and reason

Memory Questions



1. Difficulty remembering things that someone recently told you?
2. Do you forget places where you have been?
3. Do you forget the things that you need to do?
4. Do you forget where you have placed something just that day before or even an hour ago?
5. Do you keep getting lost, even if it is the same route to the same place that you have been going to for years and years?

Memory Questions



6. Do you find yourself forgetting what you wanted to say?
7. Do you just think about things, becoming upset, unable to take action to change things?
8. Do you forget names of people you have known for years?
9. Is it hard to learn new things?
10. Do you make the same mistakes? Over and over?
11. Do you continually ask for directions to be repeated?

The Problem of Testing: What test you use is what you find

- Findings depend upon the tests that you use
- MEAMS versus the RBANS
- If too simplistic memory will appear intact
- Testing in the morning may be very different from the later afternoon
- Different tests may yield different data that would be missed if reliant upon one measure.

Testing for Donna, age 74; BA: Global Systems Check vs. Specific Assessment

- **First Testing:**
- Impaired memory, average and above average scoring for language (reading recognition) and attention (task of coding, sequential and cognitive flexibility) average intelligence.
- **Second Testing:**
- RBANS, Doors and People, BVMT-R, Three Word Three Shape: More severe picture: confusion, word retrieval, delayed recall, verbal memory worse, not retaining information

Neurocognitive Assessment

- It is not uniform
- Some are using broad brush: tests of intelligence, attention, processing speed, memory, language
- Testing based upon decision tree for the types of dementia: Lewy body, Cardiovascular, Frontal, Frontotemporal

Assessment for Specific Types of Dementia

- Cardiovascular: Memory (Retrieval, Recognition, Short term and delayed) and Executive Reasoning (planning, integration, selective attention, sequencing, word retrieval)
- Frontal: Executive Reasoning (planning, integration, selective attention, sequencing, abstract reasoning and problem solving, word retrieval, aphasias)

Assessment for Specific Types of Dementia

- Lewy Body: Visual perceptual (visual closure, figure ground, visual discrimination, visual sequential memory) and Executive Reasoning (planning, integration, selective attention, sequencing, abstract reasoning and problem solving, word retrieval, aphasias)
- Frontotemporal: Emotional Assessment (loss of sense of self) Memory (Retrieval, Recognition, Short term and delayed) and Executive Reasoning (planning, integration, selective attention, sequencing, word retrieval)

Examples of Memory Testing

- Verbal Retrieval: Learning tasks; word lists, stories, names of people
- Verbal Recognition: Names, names and faces
- Visual Retrieval: Learning tasks; visual designs
- Visual Recognition: Shapes, designs, pictures
- Short term memory
- Sequential memory
- Delayed recall and recognition

Three Word Three Shape Test

- To Be Presented

- Bedside hospital measure or in your office.

RBANS: Repeatable Assessment of Neuropsychological Status

- Immediate Memory: List learning, short story
- Delayed Memory: List learning recall and recognition, short story, visual figure recall
- Visuospatial/Constructional: Copying visual figure, line judgment
- Language: Naming, word retrieval
- Attention: Short term recall number sequences, Coding
- Total Score

RBANS: Repeatable Assessment of Neuropsychological Status

- Examples to be presented

BVMT-R: Brief Visual Memory Test-Revised

- Examples to be presented

Cognitive Training

- Specific and individualized based upon the test results
- Targeting visual perceptual, memory processes, executive reasoning, language
- Tasks of short term recall, recognition, verbal and visual memory, word retrieval
- Over 200 exercises
- Re-testing every three months to change program

Carole, Age 79 years: H.S.: Pre and Post Testing

BVMT-R	6-2013	1-2014
Total Recall	22 (↓1st %tile)	49 (46th %tile)
Delayed Recall	27 (1st %tile)	43 (24th %tile)

Doors/People	6-2013	1-2014
Total Recall	3 (↓1st %tile)	7 (10-25th %tile)
Forgetting Score	4 (1-5th %tile)	13 (75-90th %tile)

BVMT-R	6-2013	1-2014
Total Recall	22 (↓1st %tile)	49 (46th %tile)
Delayed Recall	27 (1st %tile)	43 (24th %tile)

- How is her life different: Her daughter has noticed changes in her overall functioning; she is taking trips with her daughter and more social in her interactions. She enjoys her therapy visits and looks forward to them.

Carole: Age 79 years: Pre and Post Testing

Test Date	Immediate Memory	Visuospat/ Construct	Language	Attention	Delayed Memory	Total Score
6-2013	81 (10th %)	102 (55th %)	92 (30th %)	79 (8th %)	64 (1st %)	79 (8th %)
1-2014	97 (42%)	105 (63rd %)	101 (53rd %)	94 (34th %)	107 (68th %)	100 (50th %)

Louise: Age 81 : BA degree: Pre and Post Testing

MAS	12-2013	4-2014
Verbal Memory	75 (5th %tile)	87 (19th %tile)

- **Three Word Three Shape:** 12-2013: Initial recall: 1 word and 1 shape

Five learning trials, recalled 3 words and 1 shape on 5th trial

Delayed Recall: remembered 2 to 3 words and 1 or no shapes, recognized 3 words and 2 shapes

- **Three Word Three Shape:** 4-2014: Initial recall: 2 words and 3 shapes

Recall after one learning trial, recalled 3 words and 3 shapes

Delayed recall: remembered 2 to 3 words and all 3 shapes

- **How is her life different?:** Increased activity in her social life, going on many vacations, driving to appointments. She is currently putting her house up for sale to move to Colorado to be closer to her family. When first seen she only driving short distances by herself and more dependent upon her caregiver.

Louise: Age 81: BA: Pre and Post Testing

Test Date	Immediate Memory	Visuospat /Construct	Language	Attention	Delayed Memory	Total Score
12-2013	65 (1st %)	87 (19th %)	86 (18th %)	79 (8th %)	68 (2nd %)	71 (3rd %)
4-2014	106 (66th %)	105 (63rd %)	95 (37th %)	91 (27th %)	98 (45th %)	98 (45th %)

Review of the Research for Cognitive Rehabilitation/Training

- Cognitive Reserve vs. Reverse Causality
- Current and early life engagement in cognitively stimulating activities was shown to independently slow late life decline. (Wilson, Boyle, Barnes, et al., 2013)
- Cognitive activity slowed the rate of decline years before death: Cognitive activity offers protection against decline and may help preserve cognitive function despite the presence of pathology

Review of the Research for Cognitive Rehabilitation/Training

- Consistent benefit of treatment of cognitive function over and above medication effects
- Specificity of the training appears to be a primary variable for improved functioning
- Effectiveness and durability of cognitive training intervention improves functioning even if limited in time and duration
- Overall agreement that cognitive therapy (cognitive stimulation, cognitive training or rehabilitation) is an efficacious method to address dementia with or without medication

Take Home Message

- There is treatment for dementia: The diagnosis of dementia does not mean that the disease course is fixed and untreatable
- Perhaps if this concept was propagated as opposed to the latter, more people would be willing to undergo early evaluation
- Early evaluation = Increased prognosis for change

Take Home Message

- Concept of focused treatment providing individualized activities based upon brain behavior relationships addressing specific aspects of memory, executive reasoning, language and visual perceptual functioning.
- Cognitive or brain enhancing activities address memory (short and long term, retrieval and recognition, visual and verbal) executive reasoning processes (selective attention, integration, perseveration, sequential analysis, cognitive flexibility) language (word retrieval) and visual perceptual.
- Cognitive training and medication are becoming the gold standard.

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