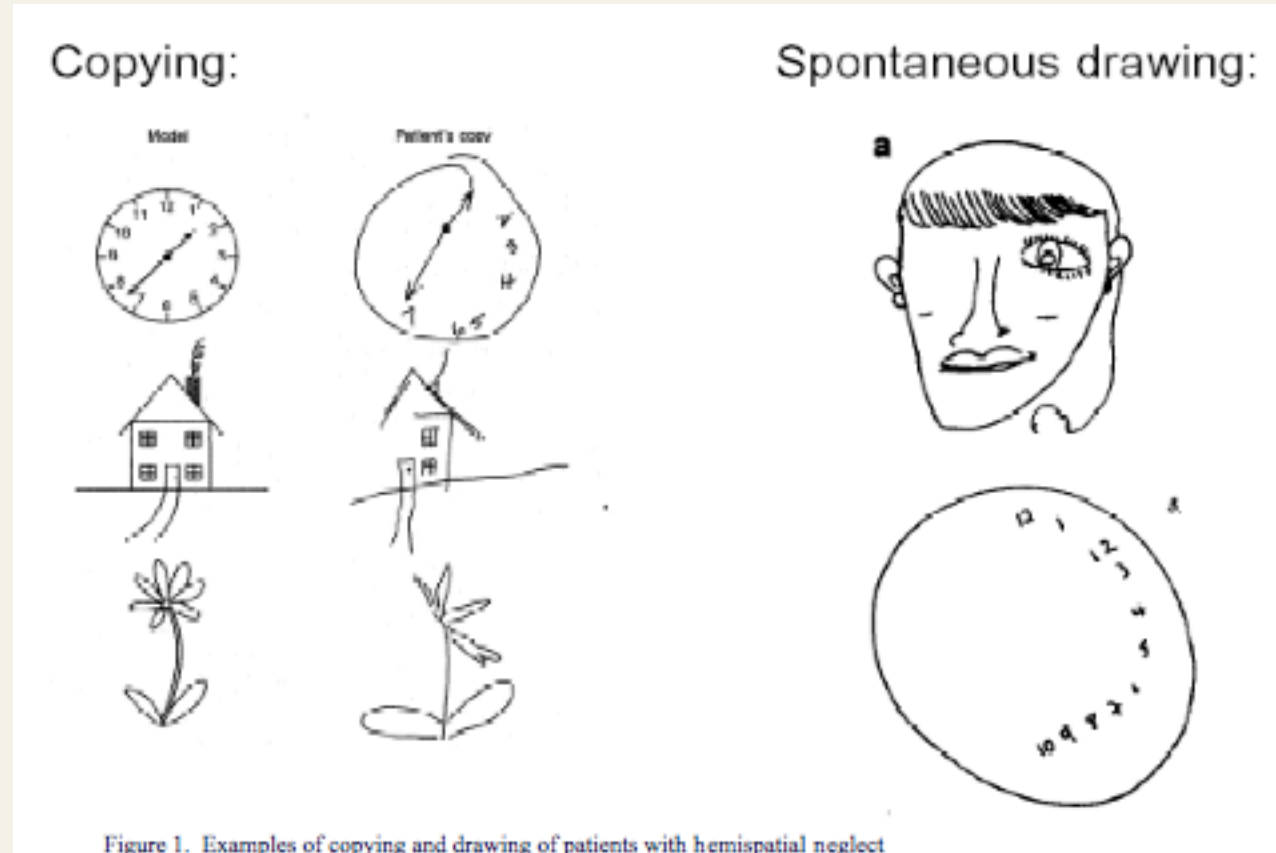




The Right Hemisphere Stroke Center: Bridging Research and Practice at MossRehab

The Right Hemisphere Stroke Syndrome

- Hemispatial Neglect
 - Low arousal
 - Emotional flattening
 - Unawareness of deficit
- = poor recovery and large caregiver burden



The Right Hemisphere Stroke Center (RHSC) at MossRehab

- RH stroke more disabling than LH stroke
- Surprisingly, no current U.S. programs focusing on the RH syndrome
- Evidence base suggests that neglect can be treated
- Only 25% of RH stroke from AEMC are currently seen in MossRehab outpatient programs
- The RHSC, funded by an Albert Einstein Society Innovative Program award, aims to increase referrals

The RHSC: A clinical/research collaboration

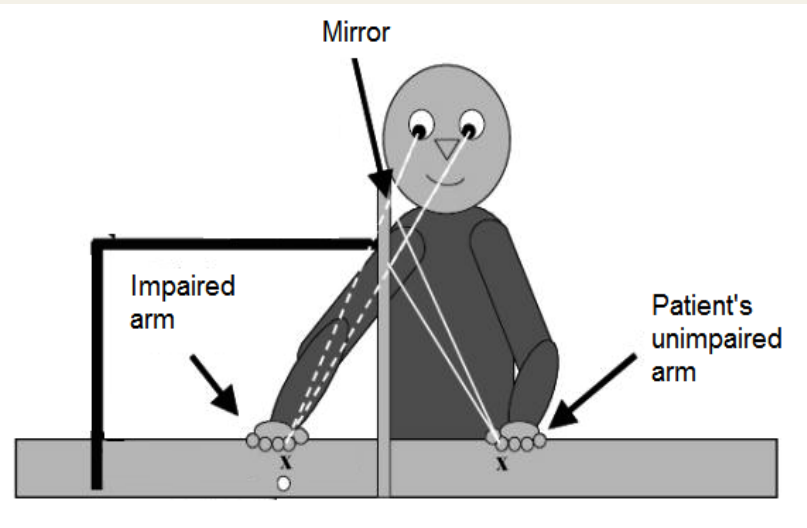
- Close collaboration of experienced clinicians and researchers using evidence-based treatments
- Sensitive assessment tools
- Triaging of patients and families based on needs
- Data tracking and analysis built in
- The RHSC will be the only program of its kind

Timetable

- Phase 1: July - Dec. 2009. Program Development.
tools and pathways for recruitment, screening, and assessment; staff training; advertising.
- Phase 2: January - March 2010. Roll-out.
initiation of recruitment, assessment, and treatment protocols.
- Phase 3: March- June 2010. Assessment and Modification.
analysis of data; discussion of strengths, weaknesses, implementation of changes; additional analyses.

Therapeutic Interventions

- Prism Treatment
- Mirror Therapy
- Medications
- Counseling
- Refresher sessions for caregivers



The Right Hemisphere Stroke Center at MossRehab Elkins Park

Step 1: Patient recruitment / referral

RHSC “Fact Sheet” (Beta version)

If you or a loved one has suffered a **stroke to the right hemisphere** of the brain, **you may be experiencing one or more of the following:**

- Difficulty seeing or paying attention to space
- Decreased energy level and motivation
- Decreased insight into problems
- Sadness or a decreased range of emotional feeling

The **Right Hemisphere Stroke Center** is a specialized outpatient program developed by world-renowned researchers and clinical experts in right hemisphere stroke. **Upon admission to the program you will receive:**

- Evaluation of your unique profile of rehabilitation needs
- Targeted therapy by licensed therapists
- State-of-the-art treatments incorporating the most recent research
- Regular access to specialized equipment including virtual reality and prism glasses.
- Training for caregivers on how to continue easy therapy at home.

The benefits of outpatient therapy at the Right Hemisphere Stroke Center may include:

- Improved vision and awareness of space
- Increased energy level and motivation
- Improved emotional well-being and quality of life

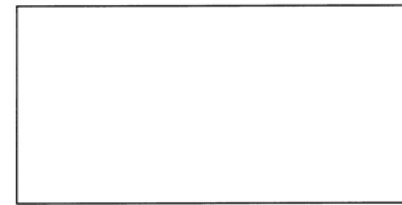
This program is funded in part by the Albert Einstein Society, Albert Einstein Healthcare Network, Philadelphia, PA

For more information visit [www. _____](#)

To register, please contact _____

Step 2: Initial screening

MossRehab
Einstein



Right Hemisphere Stroke Syndrome- Brief Screening

Peripersonal Neglect

Instruct the patient to cross out all of the E's and R's on the attached page. Allow him/her 1 minute to complete the task (time performance with watch). Tally the E's and R's cancelled on *the left of the page* (max = 20)

Peripersonal neglect Score: _____/20

Personal Neglect

Instruct the patient to close their eyes and touch their left shoulder, then left elbow. Award 1 point each.

Left Shoulder _____ Left Elbow _____ **Personal neglect score:** _____/2

Anosognosia

Ask the patient the following questions. For each question, give 1 point if patient responds accurately, 0 points if inaccurately.

1. Did you have a stroke? _____
2. Do you have any problems with your arms, legs, or vision? _____

Anosognosia Score: _____/2

Affect/Arousal

Ask patient the following questions.

1. In the past week or so, have you felt sad, worried, or fearful? (Yes = 0, No = 1) _____
2. In the past week or so, have you had trouble focusing or making an effort to participate in normal activities? (Yes = 0, No = 1) _____

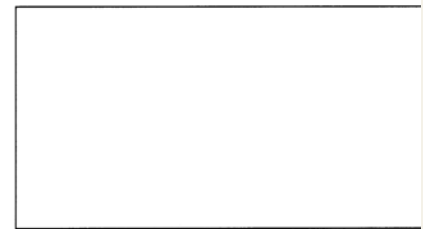
Affect Score _____/2

Evaluated By _____

Date _____

- Step 3:
Assignment to
RHSC program
- Step 4: Initial
(Baseline) Testing

MossRehab
Einstein



RHSC Evaluation Summary

Check one: ___ Initial Evaluation ___ Interim Evaluation ___ Final Evaluation

Bell Cancellation

bells cancelled: Left: ___/17
Right: ___/17

Family Burden Questionnaire

Score (# true): ___

CES-D

Score: ___

Moss Anosognosia Questionnaire

Score: ___

Fluff Test:

cotton balls removed: Left: ___/6
Right: ___/6

VRLAT:

Forward Path Score: Left: ___/30 Reverse Path Score: Left: ___/30
Right: ___/30 Right: ___/30

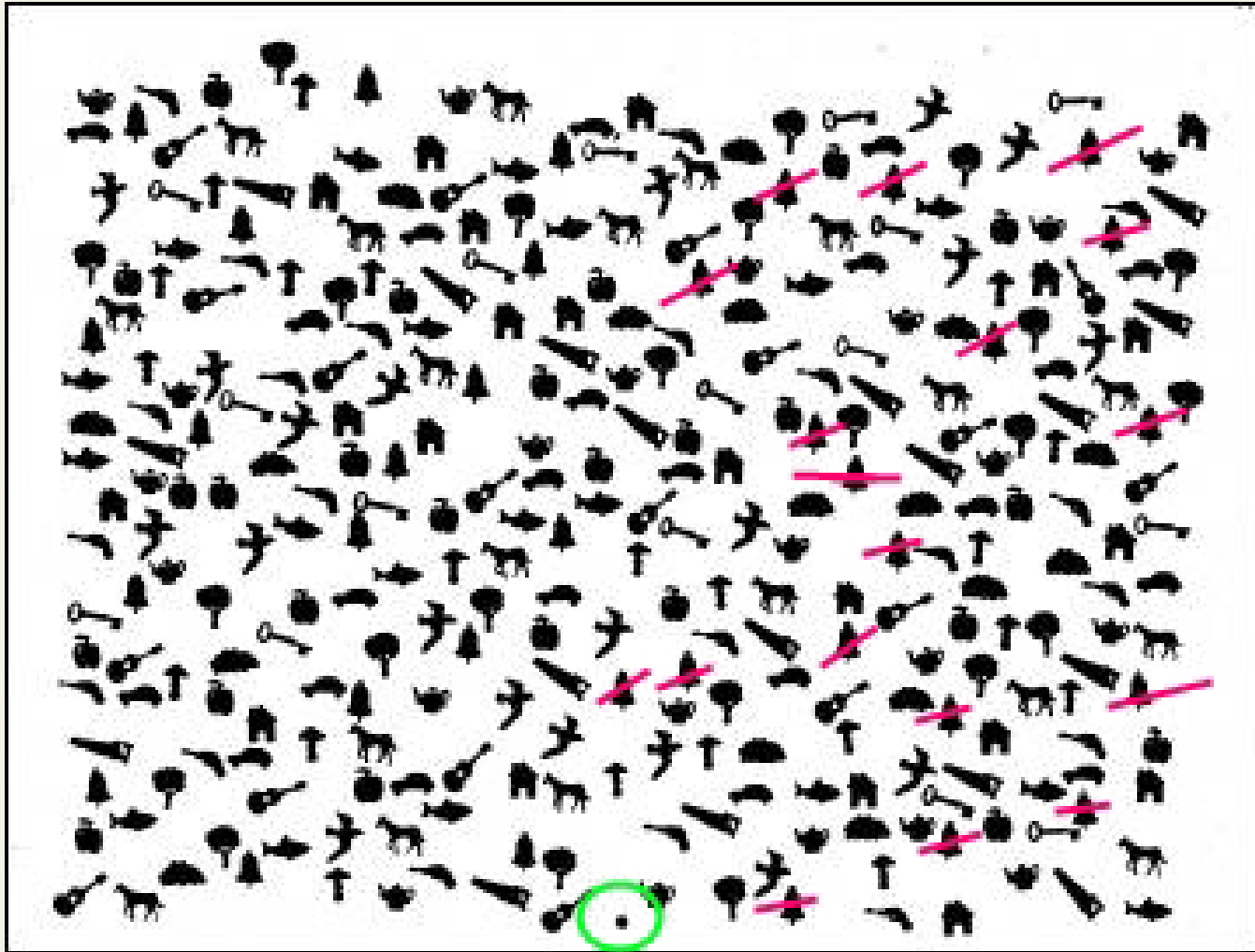
MARS

Total Conversion Score: ___/22
Average Mars Item Score: ___
Factor 1 Score: ___
Factor 2 Score: ___
Factor 3 Score: ___

Evaluated By: _____

Date: _____

Bell Test



Moss Family Burden Questionnaire

Subject # _____
Site _____
Family Member _____
Score _____

Family Burden Questionnaire

Moss Rehabilitation Research Institute adaptation of "Questionnaire on Resources and Stress"

True or False

- | | | |
|---|---|---|
| 1. _____ demands that others do things for him/her more than is necessary. | T | F |
| 2. If _____ were more pleasant to be with, it would be easier to care for him/her. | T | F |
| 3. _____ is hard to live with. | T | F |
| 4. _____ doesn't do as much as he/she should do. | T | F |
| 5. _____ would be in danger if he/she could get out of the house or yard. | T | F |
| 6. _____ cannot get around the neighborhood easily. | T | F |
| 7. Other members of the family have to do without things because of _____. | T | F |
| 8. The demands for care for _____ limit personal or professional development of someone else in our family. | T | F |
| 9. Caring for _____ has been a financial burden for our family. | T | F |
| 10. There is anger or resentment in our family as a result of the need to care for _____. | T | F |

Center for Epidemiologic Studies Depression Scale (CES-D), NIMH

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

CES-D

	During the Past			
	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I did not feel like eating; my appetite was poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I felt that I could not shake off the blues even with help from my family or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt I was just as good as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I had trouble keeping my mind on what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I felt depressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I felt that everything I did was an effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I felt hopeful about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I thought my life had been a failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I felt fearful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. My sleep was restless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I was happy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I talked less than usual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I felt lonely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. People were unfriendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I enjoyed life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I had crying spells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I felt sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I felt that people dislike me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I could not get "going."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCORING: zero for answers in the first column, 1 for answers in the second column, 2 for answers in the third column, 3 for answers in the fourth column. The scoring of positive items is reversed. Possible range of scores is zero to 60, with the higher scores indicating the presence of more symptomatology.

Awareness Score

Instructions: The patient is asked these questions after the neglect testing battery. Strength, sensory and visual screening has been completed prior to this questionnaire to allow correct judgments concerning the accuracy of patient statements.

MAQ

1. A. Why are you in the hospital? What is wrong with you?
If patient does not give an accurate response, then proceed to question #1B
B. "Did you have a stroke?"

Score: Denies any problem = 3
Admits a problem on 1B = 2
Answers 1A correctly = 1

2. If patient volunteered that they have arm weakness in response to question #1 then give patient a score of 1 for this question and move on to #3.
A. "Is there anything wrong with either of your arms?"
If patient does not give an accurate response, then proceed to question #2B.
B. Ask patient to raise both arms up to shoulder height at the same time, then ask patient "Is there any difference between your arms? Are they in the same position?"

Score: Denies any problem = 3
Admits a problem on 2B = 2
Answers 2A correctly (or volunteers information with question #1) = 1

3. If patient volunteered that they have leg weakness in response to question #1 then give patient a score of 1 for this question and move on to #4.
A. "Is there anything wrong with either of your legs?"
If patient does not give an accurate response, then proceed to question #3B.
B. Ask patient "Can you walk by yourself without any help?"

Score: Denies any problem = 3
Admits a problem on 3B = 2
Answers 3A correctly (or volunteers information with question #1) = 1

4. If patient volunteered that they have vision problems in response to question #1 then give patient a score of 1 for this question and move on to #5.
A. "Do you have any problems seeing?"
If patient does not give an accurate response, then proceed to question #4B.
B. Ask patient "Do you have any problems seeing or paying attention to things on the left?"

Score: Denies any problem = 3
Admits a problem on 4B = 2
Answers 4A correctly (or volunteers information with question #1) = 1

Fluff Test:

Materials needed: blindfold (optional), tape, 12 cotton balls

Position the subject so that they are seated with their arms resting on the armrest of their chair/wheelchair.

Tell the subject to close their eyes, or apply the blindfold if necessary. Tape the cotton balls onto both sides of the subject's body on the following areas:

Left & right chest

Left wrist

Left inside elbow

Left shoulder

Left & right knee

Left & right hip

Next, tell the subject, "I have placed a number of cotton balls on your clothing. Keeping your eyes closed, I want you to pick each cotton ball off of your body and hand them to me."

Count the number of cotton balls removed from the left and right separately and record on the neglect battery summary sheet.

Do NOT count cotton balls that are removed by a subject "rubbing" their hands over their body.

Moss Attention Rating Scale

Abbreviated

MARS

Subject's name _____ ID# _____

Person doing rating _____ Discipline: OT / PT / Sp / Nursing (circle) Other: _____

Using the number key below, please indicate to what degree each descriptor applies to the person you are rating. If any of your sessions during the 2 days were done in co-treatment with another rater, please note this above, and please make sure that you don't discuss the rating scale at all with your co-rater until both of you have filled it out independently.

Please don't leave any items blank. If you are not sure how to answer, just make your best guess.

- 1 = Definitely false
- 2 = False, for the most part
- 3 = Sometimes true, sometimes false
- 4 = True, for the most part
- 5 = Definitely true

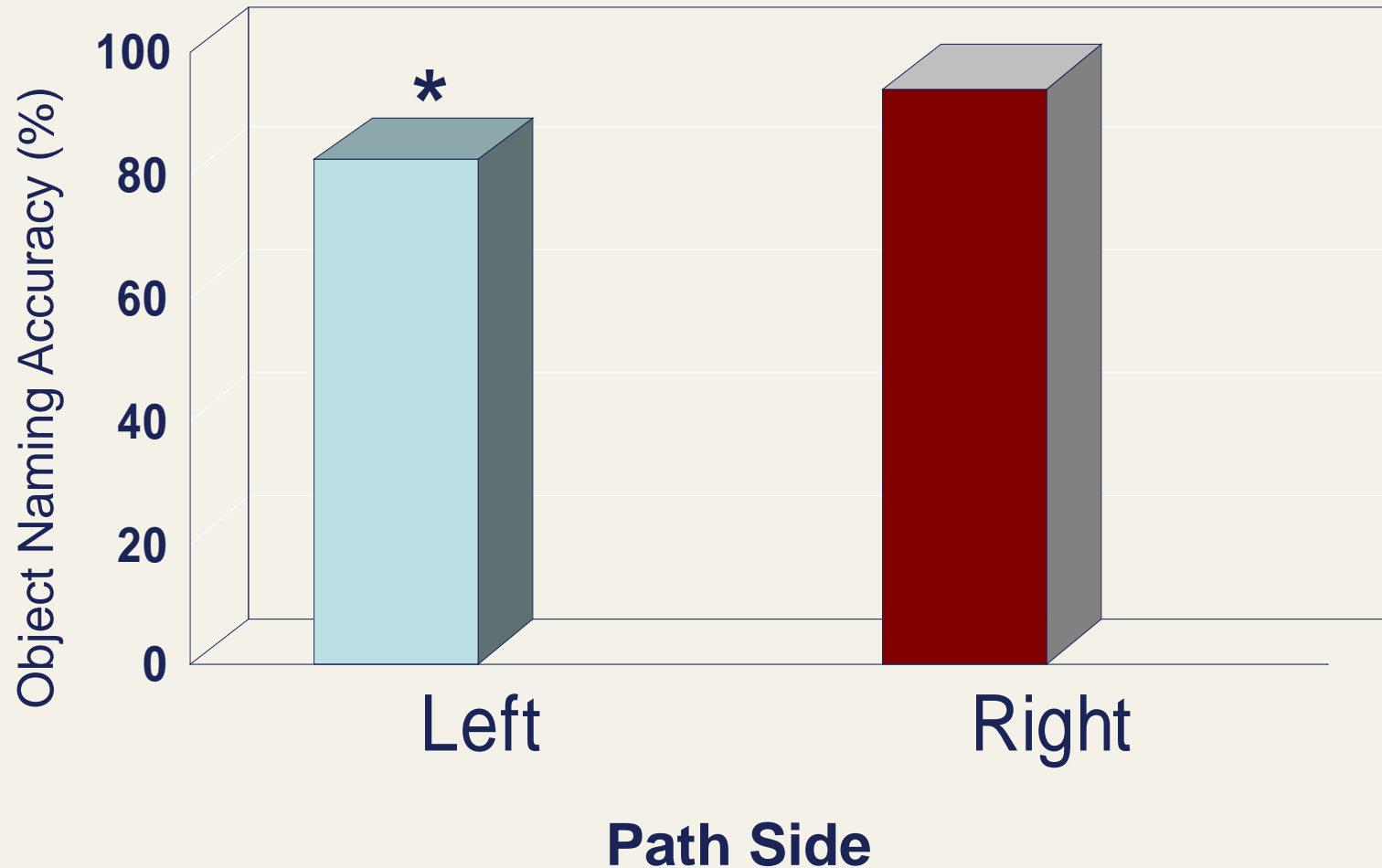
1. _____ Is restless or fidgety when unoccupied
2. _____ Sustains conversation without interjecting irrelevant or off-topic comments
3. _____ Persists at a task or conversation for several minutes without stopping or "drifting off"
4. _____ Stops performing a task when given something else to do or to think about
5. _____ Misses materials needed for tasks even though they are within sight and reach
6. _____ Performance is best early in the day or after a rest
7. _____ Initiates communication with others
8. _____ Fails to return to a task after an interruption unless prompted to do so
9. _____ Looks toward people approaching
10. _____ Persists with an activity or response after being told to stop
11. _____ Has no difficulty stopping one task or step in order to begin the next one
12. _____ Attends to nearby conversations rather than the current task or conversation
13. _____ Tends not to initiate tasks which are within his/her capabilities
14. _____ Speed or accuracy deteriorates over several minutes on a task, but improves after a break
15. _____ Performance of comparable activities is inconsistent from one day to the next
16. _____ Fails to notice situations affecting current performance, e.g., wheelchair hitting against table
17. _____ Perseverates on previous topics of conversation or previous actions
18. _____ Detects errors in his/ her own performance
19. _____ Initiates activity (whether appropriate or not) without cuing
20. _____ Reacts to objects being directed toward him /her
21. _____ Performs better on tasks when directions are given slowly
22. _____ Begins to touch or manipulate nearby objects not related to task

The Virtual Reality Lateralized Attention Test (VRLAT) (Buxbaum et al 2008; Dawson et al 2008)





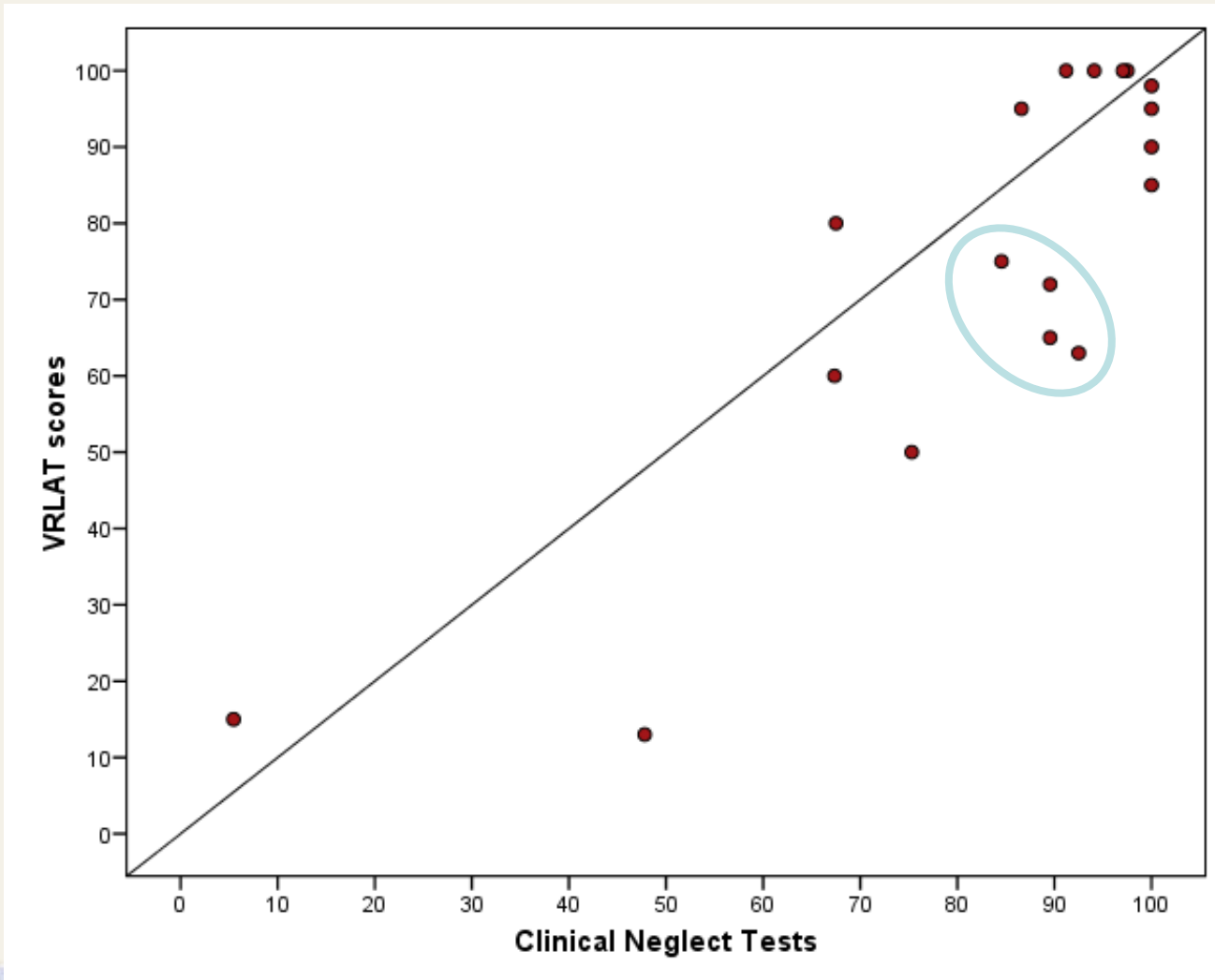
The VRLAT detects left neglect



The VRLAT correlates strongly with other neglect tests

	Mean VRLAT Score
Bell /Letter Cancel	0.83
Line Bisection	-0.50
Fluff Test	0.46
Laser Line Bisection	-0.85
Dual Task Base L	-0.43
Dual Task Dual L	-0.86
Dual Task Interference	-0.88

...yet is more sensitive than paper and pencil tests



Step 5: Data Entry

Zoho Creator - RHSC

Back Forward Reload Stop Home History Bookmarks Print

http://creator.zoho.com/mossrehab/rhsc/#Form:Eval marshmallow man

Zoho Creator - RHSC

ZOHO RHSC
Creator

Edit this application | More Options | Go To | Feedback | Sign out[mossrehab]

Home

- Eval
- Eval View

Eval More Actions ▾

Patient Number	<input type="text"/>	INTERIM EVAL	
INITIAL EVAL		Interim Date	<input type="text"/> 31 [dd-MMM-yyyy]
Initial Date	10-Dec-2009 31 [dd-MMM- yyyyHH:mm:ss]	Bell Left	<input type="text"/>
Bell Left	<input type="text"/>	Bell Right	<input type="text"/>
Bell Right	<input type="text"/>	Family Burden Questionnaire Score # True	<input type="text"/>
Family Burden Questionnaire Score # True	<input type="text"/>	CES-D	<input type="text"/>
CES-D	<input type="text"/>	Moss Anosognosia Questionnaire	<input type="text"/>
Moss Anosognosia Questionnaire	<input type="text"/>	Fluff Left	<input type="text"/>
Fluff Left	<input type="text"/>	Fluff Right	<input type="text"/>
Fluff Right	<input type="text"/>	VRLAT Forward Path Left	<input type="text"/>

Done

- Step 6: Rounds and assignment to treatment protocol(s)

Right Hemisphere Stroke Center DRAFT 10-13-09
 PATIENT CARE DOCUMENTATION
 Name: DOB:

DATE TEST DATA REVIEWED:

TREATMENT RECOMMENDATIONS Date:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRISM tx	PSYCH tx	MEDICATION tx
<input type="checkbox"/> Start 10-day Prism tx	<input type="checkbox"/> Individual Counseling	<input type="checkbox"/> Refer to Physician for:
<input type="checkbox"/> Other	<input type="checkbox"/> Family Counseling	<input type="checkbox"/> stimulants
	<input type="checkbox"/> Other	<input type="checkbox"/> anti-depressants
		<input type="checkbox"/> other
		<input type="checkbox"/> Other

TREATMENT FOLLOW UP REVIEW Date:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRISM tx	PSYCH tx	MEDICATION tx
<input type="checkbox"/> Y <input type="checkbox"/> N Prisms issued	<input type="checkbox"/> # of sessions provided	<input type="checkbox"/> Y <input type="checkbox"/> N Log Book issued
<input type="checkbox"/> Y <input type="checkbox"/> N Log Book issued	<input type="checkbox"/> individual	<input type="checkbox"/> prescription issued on
<input type="checkbox"/> # of prism treatments	<input type="checkbox"/> family	<input type="checkbox"/> medication started on
<input type="checkbox"/> Y <input type="checkbox"/> N consecutive txs?		<input type="checkbox"/> Y <input type="checkbox"/> N log book monitored
<input type="checkbox"/> Y <input type="checkbox"/> N log book monitored		

Notes:

TREATMENT FOLLOW UP REVIEW Date:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRISM tx	PSYCH tx	MEDICATION tx
<input type="checkbox"/> # of prism treatments	<input type="checkbox"/> # of sessions provided to:	<input type="checkbox"/> # days on medication
<input type="checkbox"/> Y <input type="checkbox"/> N consecutive txs?	<input type="checkbox"/> individual	<input type="checkbox"/> Y <input type="checkbox"/> N log book monitored
<input type="checkbox"/> Y <input type="checkbox"/> N log book monitored	<input type="checkbox"/> family	

Notes:

Staff in attendance:

Scheduled for Re-testing on:

Step 7: Treatment Protocols: at least
2 weeks

Step 8: Retesting with battery, and data
entry

Evaluating the program

Tracking and statistical analysis of data

1. Reduction of symptoms of right hemisphere syndrome
1. Reduction of caregiver burden and stress
1. Increase in business: number of referrals to outpatient stroke services, from RHSC to other AEHN providers and services, and number of referring physicians and networks.



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