



Visual Disturbance Following TBI

Assessment and Treatment from an SLP's Perspective

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Disclosures

- Per diem speech-language pathologist, Catholic Medical Center
- Owner, Skill Builder Speech Therapy

What is Hemispatial Neglect?

- The syndrome of hemispatial neglect is characterized by reduced awareness of stimuli on one side of space, even though there may be no sensory loss.¹
- Attention is the issue, not eyesight

How Common is it?

- The estimates are far and wide
- 27% of people with TBI
- 30-50% of stroke survivors ²
- Much more common in right brain injuries than left

Common enough to always be on a therapist's radar

Severity

Mild - Missing a date at the top left of a page, writing a half inch in from the left margin

Moderate - Only shaving one side of the face, missing food on the left side of the plate

Severe - Turning body away from the neglected side, not recognizing their own limbs

* Rarely occurs in isolation as the only symptom of TBI

Assessment

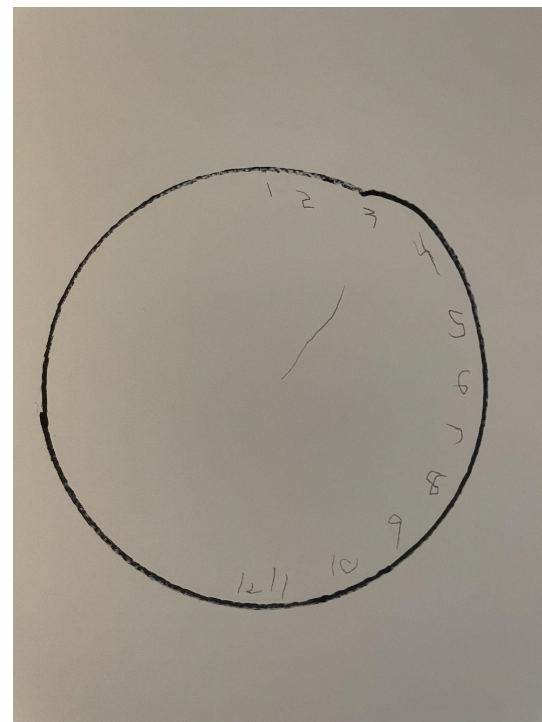
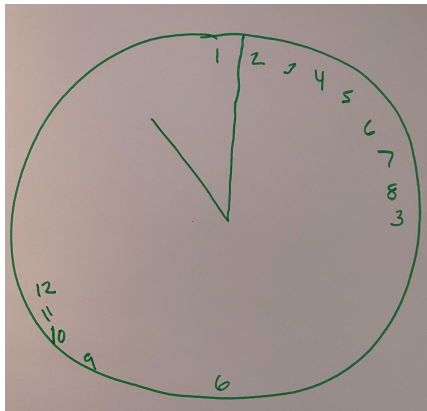
Observation

- Meal time observation, *Clinical Swallow Evaluation*
 - Only eating one side of plate, pocketing on one side, spilling from one side
- Walking to the therapy room, any drifting?
- Posture
- Eye contact
- Filling out a clinic intake form

Assessment (continued)

Clock Drawing

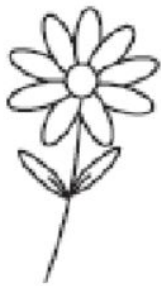
- Draw a clock face
- Place the numbers on the clock face
- Set the hands to a specific time
- Used in many standardized measure: *CLQT*, *MOCA*, *Mini-Cog*
- Scored based on accuracy, perseveration, number rotation/spacing, and distortion



Assessment (continued)

Copying and Visual Closure

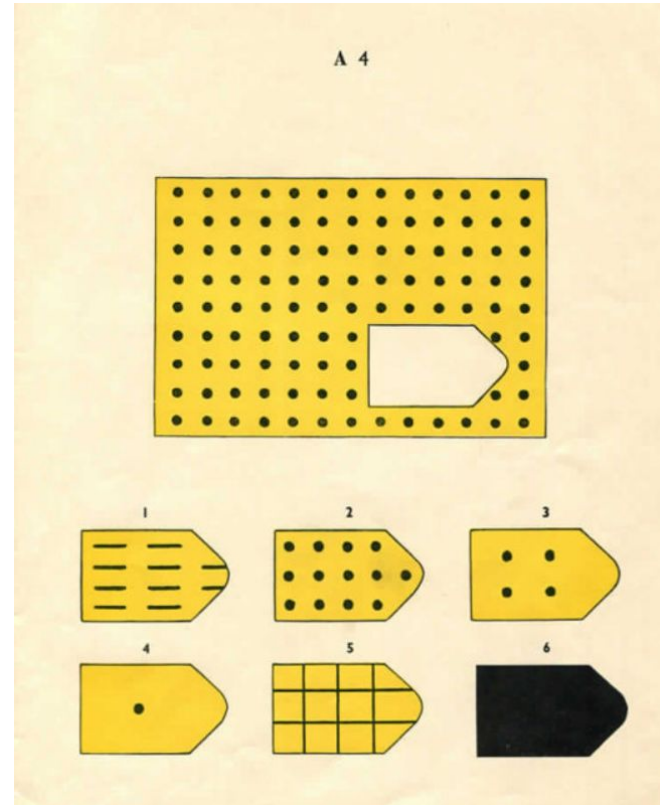
- Flower completion
- Raven's Coloured Progressive Matrices 4



Original



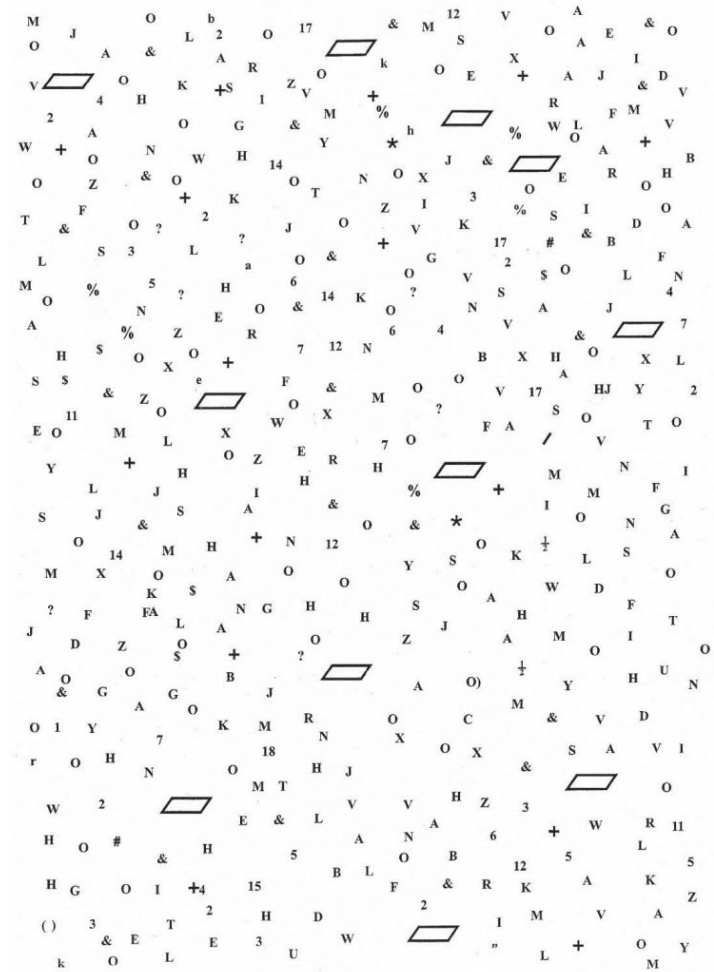
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Assessment (continued)

Scanning - Davis Visual Scan Test³

"Before you is a sheet of paper. On the other side of the sheet there are letters, numbers and symbols. When I say go, turn your sheet over and circle the first 0 that you see, and then, without picking the pen up, draw a line to the next 0 you see and circle it. Continue drawing lines and circling all of the 0s you see on the paper until you are told to stop. Are there any questions?"

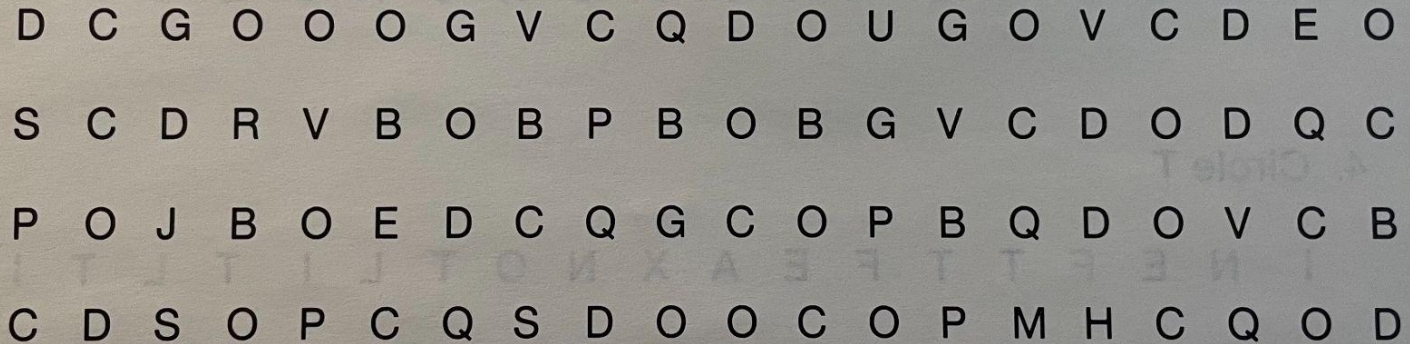


Treatment

1. Improvement of the skill
 - a. Reading text
 - b. Writing text
 - c. Visual spatial skills
 - d. Spatial awareness and safety
2. Cueing to scan left and strategies to draw attention left
 - a. “Lighthouse Technique”
3. Constraint induced therapy
4. Metacognition/awareness of deficits

Reading Text Formats

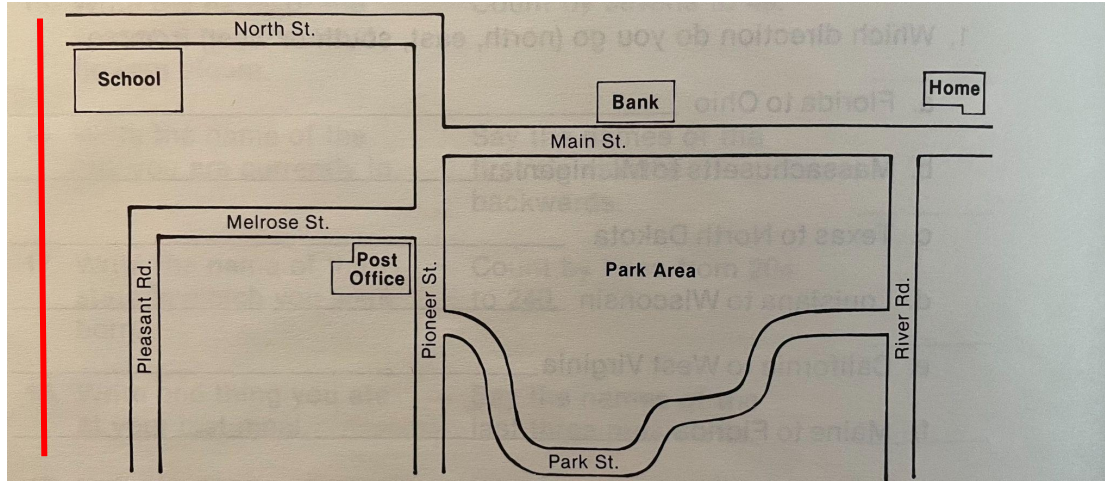
8. Circle O



D C G O O O G V C Q D O U G O V C D E O
S C D R V B O B P B O B G V C D O D Q C
P O J B O E D C Q G C O P B Q D O V C B
C D S O P C Q S D O O C O P M H C Q O D

Scanning to practice the back and forth pattern of regular format reading
Anchoring with use of salient marker to train the attention to return to the left margin

Reading Irregular Test Formats



- Maps, check books, charts, menus, bills
- Use salient left marker or blocking to guide scanning

SOUP		VEGETABLES	
S1. Chicken Mushroom Soup	4.20	V1. Sautéed Bean Sprouts	8.50
S2. Chicken Rice Soup	4.20	V2. Plain Vegetables and Almonds	10.30
S3. Chicken Egg Drop Soup	4.60	V3. Sautéed Mushrooms	9.50
S4. Wonton Soup with BBQ Pork	4.70	V4. Sautéed Broccoli and Mushrooms	10.00
▶ S5. Hot & Sour Soup (Pork or Chicken)	4.50	V5. Sautéed Mushrooms and Green Peppers	10.00
▶ S6. Hot & Sour Soup with Wonton (2 pcs)	6.00	V6. Sautéed Mixed Vegetables	10.00
S7. Vegetable Soup	4.20	V7. Sautéed Baby Corn and Mushrooms	10.00
S8. Beef Noodle Soup	4.50	▶ V8. Fried Tofu with Mixed Vegetables	10.00
S9. Chicken Noodle Soup	4.50	▶ V9. Szechuan Mixed Vegetables	10.30
		▶ V10. Chili Tofu (Dry)	10.30
APPETIZERS		SWEET & SOUR	
A1. Vegetable Spring Roll (1/2 Doz.)	11.70 (ea) 2.20	<i>(50¢ Extra for Pineapple Sauce)</i>	
A2. Mini Vegetable Spring Roll (1/2 Doz.)	5.80 (ea) 1.10	5. Sweet & Sour Spareribs	9.70
A3. Egg Roll (Pork)..... (1/2 Doz.)	8.50 (ea) 1.60	6. Sweet & Sour Chicken Balls (12)	11.80
A4. BBQ Pork Slices (Cold or Warm Cut)	12.50	7. Sweet & Sour Breaded Shrimps	12.70
A5. Chef's Appetizer Plate	14.50	8. Sweet & Sour Fried Wonton	6.90
<i>Egg Rolls (2), BBQ Ribs (4), Deep Fried Wings (4), Deep Fried Wontons, Breaded Shrimp (4) & Sweet & Sour Sauce</i>		9. Chicken Soo Guy	13.00
A6. Steamed or Grilled Pork Dumplings	11.00	<i>Gravy, Sweet & Sour or Lemon Sauce</i>	
A7. French Fries	5.80	10. Cantonese Sweet & Sour Pork or Chicken	13.00
A8. Onion Rings	6.20	11. Lemon Chicken or Pork	13.00
		12. Crabmeat Cheese Wonton	11.00
CHOW MEIN / CHOP SUEY		SEAFOOD	
<i>Bean Sprout Dish (Chop Suey + Dry Noodles = Chow Mein)</i>		13. Breaded Shrimp (12)	12.00
1. Mushroom or Vegetable	9.00	14. Fresh Shrimp with Black Bean Sauce	13.00
2. Chicken, BBQ Pork or Beef	9.50	15. Fresh Shrimp with Broccoli	13.60
3. Shrimp	13.00	16. Fresh Shrimp with Mixed Vegetables	13.60
4. Special (Chicken, Beef, Pork and Shrimp)	13.50	17. Seafood with Mixed Vegetables	14.50
		<i>Scallops, Shrimp, Crab Meat Cooked with Snowpeas and Mixed Vegetables</i>	
WINGS / RIBS		▶ 18. Hunan Shrimp	14.20
W1. Deep Fried Chicken Wings	12.00	<i>Fresh Shrimp, Mushrooms, Carrots And Broccoli in a Hunan Hot Sauce</i>	
▶ W2. Spicy Wings	12.30	19. Ginger Shrimp	14.20
W3. Honey Garlic Wings	12.30	<i>Cooked with Mostly White and Green Onions in a Ginger Sauce</i>	
▶ W4. Salt and Pepper Wings	12.30	▶ 20. Szechuan Shrimp	14.20
W5. BBQ Spareribs (Short or Long)	13.00	▶ 21. Salt and Pepper Shrimp	16.00
W6. Dried Vancouver Style Ribs (Short)	13.00	▶ 22. Kung Pao Shrimp	14.20
W7. Honey Garlic Spareribs	13.00	23. Shrimp with Vegetables and Almonds	14.20

Writing

- Forms
- Emails
- Check book
- Charts
- Calendars
- Schedules



Adult Client Information Sheet

General Information

Client Name: _____ DOB: _____

Client's Home Address: _____

Phone Number (home): _____

Phone Number (cell): _____

Email: _____ Referred by: _____

Occupation: _____ Employer: _____

Marital Status: _____ Spouse's Name: _____

Children (include names, genders, ages): _____

Physician Name: _____ Physician Phone: _____

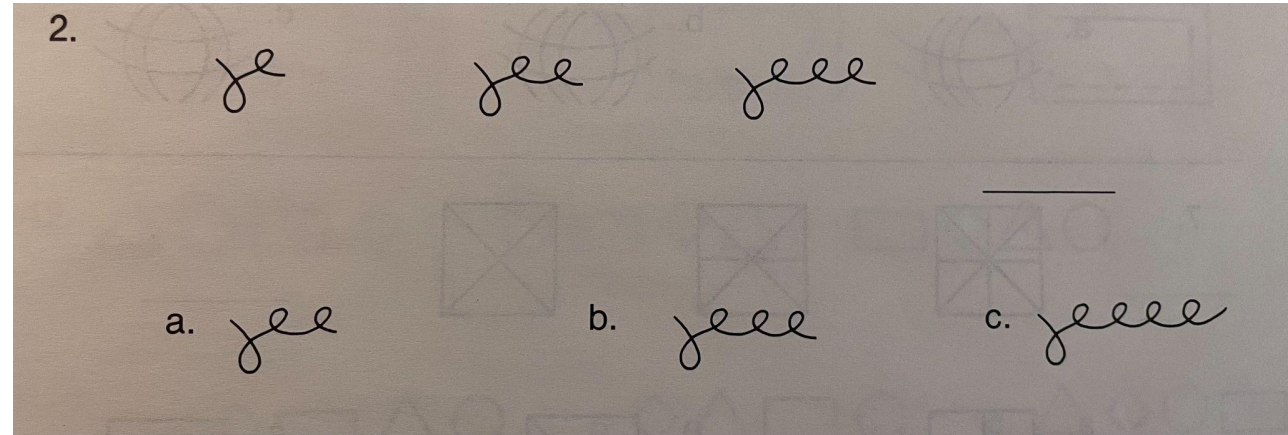
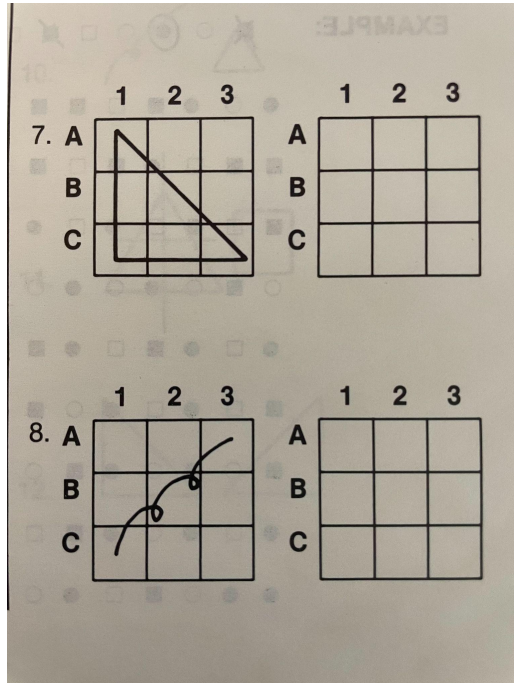
Physician Address: _____

Secondary Contact Name: _____ Relationship: _____

Phone: _____ Email: _____

Address: _____

Visual Spatial Skills



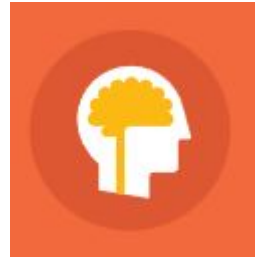
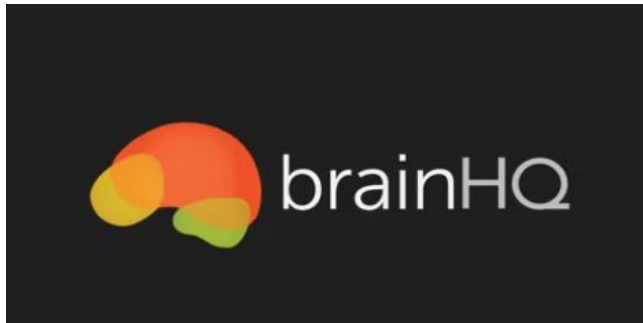
1. Copying drawings
2. Series completion

Spatial Awareness and Safety

- Sit on the left
- Set up important items on the left
 - Items needed to complete a task
 - Dessert
 - The remote control
- Be a lighthouse - use the left anchor strategy and constantly scan left, then right, and back again

Technology

- Apps can be your friends and can help with awareness of deficit and home carry over
- Tactus Therapy, Constant Therapy, Posit Science, Lumocity...and many more
- Apps should be used concurrently with professional therapy services, or as part of a home-program once maximum gains have been reached in therapy



 **Constant Therapy®**

Metacognition Awareness of Deficit

TEACH-M

TEACH-M is an acronym for 6 ways to learn new skills (Ehlhardt et al., 2005). Use TEACH-M to help your patients increase independence with daily tasks (e.g. medication management).

TASK ANALYSIS. Help your patient break down the task into smaller steps.

ERRORLESS LEARNING. Focus on accuracy throughout the task. Emphasize not guessing. Minimize guessing by giving enough help (e.g. verbal cues to double check the medication labels).

ASSESS PERFORMANCE. Teach your patient to check their accuracy after each step of the task.

CUMULATIVE REVIEW. Have your patient repeat all the steps of the entire task. Then review how they did on the entire task.

HIGH NUMBER OF PRACTICE TRIALS. Have your patient complete the entire task over and over again.

METACOGNITION. Help patients improve awareness about how they perform on a task.

- Before the task, ask the patient to predict how they'll do.
- After the task, ask them to assess how they did.
- Discuss how their assessment of their own performance compares with how they actually did on the task.

References

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2. Barrett A., Buxbaum L., Branch Coslett, H., Edwards, Kenneth M. Heilman, Argye E. Hillis, William P. Milberg, Ian H. Robertson; (2006) Cognitive Rehabilitation Interventions for Neglect and Related Disorders: Moving from Bench to Bedside in Stroke Patients. *Journal of Cognitive Neurology* 18 (7): 1223–1236. Doi: <https://doi.org/10.1162/jocn.2006.18.7.1223>
3. Bennett, J. (2006) *Davis Scan Test Normative Data for A Sample*. Ferris State University, Michigan College of Optometry.
4. Raven, J., Court J; (1978). *Manual for Raven's progressive matrices and vocabulary scales*. London : Los Angeles, Calif. : Western Psychological Services