

### 3s Spreadsheet Test- v2 (Toglia & Chen, 2017)

#### *Identifying disassociations between stimulus centered and viewer centered neglect*

The 3s Spreadsheet Task was designed to assess both stimulus-centered and viewer-centered symptoms of spatial neglect.

Materials: 3s Scoresheet, 3s Spreadsheet, Scoresheet instructions and template, pen or pencil, stopwatch or timer

***Stimulus-Centered Neglect*** – also referred to as *Object-Centered neglect* or *Allocentric neglect*. In stimulus-centered neglect, a person with a Right CVA attends to the right side of a number string or object regardless of where it is placed on the page. For example, the number 112,543 may be misread as 12,543 or 2,543, even if this number is located on the right side of a page. The left side of the number is missed, regardless of the spatial location.

***Viewer-Centered Neglect*** – also referred to as *Scene Based neglect* or *Egocentric neglect*. Viewer-centered neglect is observed when a person with a Rt CVA, fails to mark items on the left side of the page or misses stimuli on the contralesional side of space relative to their body.

Spatial neglect can affect different sizes or frames of space including both large and small parts of space. For example, within small parts of space, a person can miss one side of an object, regardless of where it is placed (stimulus-centered). Information can also be missed within larger areas of space such as across one half of a page or one half of space (viewer-centered). In many cases a combination of symptoms (both stimulus and viewer centered) are observed, however these symptoms can also be disassociated. A person can show a predominant pattern of either stimulus-centered or viewer-centered neglect. The 3s Spreadsheet task can identify dissociations between stimulus-centered and viewer-centered neglect within a single administration.

The 3s Spreadsheet task examines omissions within each string of numbers, as well as the patterns of omission across the left versus right side of the page. There are sixty 3's on each side of the page and sixty 3's on the left and right side of each individual number string (total =120). The person is instructed to put a line through all the 3's in a table/ spreadsheet containing strings of numbers grouped into 10 columns (5 columns on each side of the page) and 14 rows (7 rows on upper and lower parts of page). The page can be divided into 4 equal quadrants with thirty target 3's in each quadrant. Omissions are recorded based on location, and whether they were stimulus-centered (eg. left or right side of a number string) or viewer-centered (eg. left or right side of the page).

Numbers may be more sensitive to neglect because unlike words, number strings are less predictable and are not embedded within a context. If the first 1-2 letters of a word are missed, the word may not make sense. This provides the person with a cue to search to the left. These cues are not present with number strings. In comparison to reading tasks, numbers may be more sensitive to the effects of neglect.

Chen, P., Caulfield, M. D., Hartman, A. J., O'Rourke, J., & Toglia, J. (2016). Assessing viewer-centered and stimulus-centered spatial bias: The 3s spreadsheet test version 1. *Applied Neuropsychology: Adult*, 1-8.

### 3s Spreadsheet Test- v2 Scoresheet

Participant ID \_\_\_\_\_

Participant Initials \_\_\_\_\_

Date \_\_\_\_\_

Examiner Initials \_\_\_\_\_

a. Time: \_\_\_\_:\_\_\_\_ (min:sec) = \_\_\_\_\_ sec

b. Starting column: \_\_\_\_\_

c. Number of crossed 3s in each column (left vs. right side of strings):

	1) $\frac{\ /}{6/6}$	2) $\frac{\ /}{6/6}$	3) $\frac{\ /}{6/6}$	4) $\frac{\ /}{6/6}$	5) $\frac{\ /}{6/6}$	6) $\frac{\ /}{6/6}$	7) $\frac{\ /}{6/6}$	8) $\frac{\ /}{6/6}$	9) $\frac{\ /}{6/6}$	10) $\frac{\ /}{6/6}$
# of 3s	12	12	12	12	12	12	12	12	12	12

d. Number of crossed 3s in each quadrant (left vs. right side of strings):

Upper left: $\frac{\ /}{15/15}$	Lower left: $\frac{\ /}{15/15}$	Upper right: $\frac{\ /}{15/15}$	Lower right: $\frac{\ /}{15/15}$
# of 3s 30	# of 3s 30	# of 3s 30	# of 3s 30

e. Total number of crossed 3s: \_\_\_\_\_

f. Total number of omissions: \_\_\_\_\_ = 120 - e

g. # of crossed 3s on Left side of the page: \_\_\_\_\_ = sum of Column 1 to 5

h. # of omissions on Left side of the page: \_\_\_\_\_ = 60 - g

i. # of crossed 3s on Right side of the page: \_\_\_\_\_ = sum of Column 6 to 10

j. # of omissions on Right side of the page: \_\_\_\_\_ = 60 - i

k. Page-centered omission: \_\_\_\_\_ = h - j

l. # of crossed 3s on Left side of individual strings: \_\_\_\_\_ = sum of left side of each string

m. # of omissions on Left side of individual strings: \_\_\_\_\_ = 60 - l

n. # of crossed 3s on Right side of individual strings: \_\_\_\_\_ = sum of right side of each string

o. # of omissions on Right side of individual strings: \_\_\_\_\_ = 60 - n

p. String-centered omission: \_\_\_\_\_ = m - o

**Instructions**

- Prepare a stop watch. The time to complete the task will be recorded in Item a.
- Pay attention to the first response of the examinee. The column where the first response takes place will be recorded in Item b.
- Place the test sheet in front of the examinee on a clean surface with no distraction. Align the center of the page with the examinee's body center (e.g., sternum or nose). Provide the examinee with a pen and the instruction "Put a line through all the number 3's that you find on this page. I will be timing you but it is more important to be accurate than to go too fast."

8103	83727895	769158	31678925	3294059	73914	3512407	8089170	1992939	2120
4567	8092573	45013	29758	530345	618475	12445683	30127987	366305	297539
139723	45298716	3295870	3980	253970	579340	6138	432063	81924982	6583
9813	32145678	84673	139475	58145469	13820	37428981	63017980	45607	13925647
34602458	3643	83921	4512693	4698723	836438	5801	89063	23972165	3263
42915	5853	72631	34670654	36135	4626071	83959	4959398	68130	6301
987302	9672	4286158	7807347	675246	946053	2002193	6004745	35671	1061
5732186	45013	84203	56239	671302	3004	38672168	80873	4108	371903
6837	183820	43612063	90542145	784352	3956	23781	198378	187123	6004216
3407	1792635	4067903	98103	5624	780523	56792604	37801	6356791	93956467
431025	4297589	83961	56465421	6138940	4295901	6476023	97654985	13283	21243
613947	43169857	4302	3251673	70765583	760536	37821245	4623	1308418	9212494
8077	3824510	53906	4389	80610972	3120	760530	3940	8405737	89203
579103	970943	42057	87652143	3048	497538	1230	93745125	19081257	23456

**Scoring instructions and scoring template:**

- Prepare a stop watch. The time to complete the task will be recorded in Item a.
- Pay attention to the first response of the examinee. The column where the first response takes place will be recorded in Item b.
- Count the number of 3's detected on the left (green) and right (red) half of each number string. Record the counts in Items c and d.

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