**Appendix 1**

**TorCA Clock Scoring Criteria**

This clock scoring system was modified from Clock Drawing: A Neuropsychological Analysis by Freedman M, Leach L, Kaplan E, Winocur G, Shulman KI, Delis D. Copywrite 1994 by Oxford University Press, Inc.

Scoring is based on the clock’s contour, numbers, hands and center, separately, and with a total score based on the sum of the separate scores.

**Contour**

**1. One point** is given for a closed contour or within 1/8 of an inch (3mm), not too small to contain all the numbers.

* *A square or square-like shape would be awarded 0 points*

**2. One point** is given for a circular contour with the ratio of shortest to longest diameter being no greater than 1:1.5.

**Numbers**

**One point is given for each of the following being present:**

3. Numbers 1-12 are all present without any additional numbers

4. Numbers are either all Arabic or all Roman and not a combination

5. Numbers are in the correct order (sequence)

* *To be awarded a point at least 2 numbers (1-12) must be present and in correct order.*

6. The paper is not rotated

7. The numbers are in the approximate correct position

* At least one number must be present to score 1. Numbers may be outside contour

8. All numbers are within the contour

* If contour is absent score 0
* *A visible space must be present between a number and the contour to score 1*
* If a number touches contour score 0
* A number written as a word does not count as a number

**Hands**

**One point is given for each of the following being present:**

9. Two and only two hands are present

* *Three hands can be present if the examinee indicates that it is a second hand*

10. The hour target number (i.e., 11) is indicated in some manner

11. The minute target number (i.e., 2) is indicated in some manner

12. The hands are in the correct proportion

* Hour hand must be perceptually or measurably shorter than minute hand.
* Score 0 if only one hand present

13. There are no superfluous markings on the face

* *Marks representing minute ticks are allowed*
* *Any mark or word not allowed under any other category is considered superfluous except extra numbers. These are scored as 0 under item 3*
* Second hand superfluous if not explicitly identified as second hand by subject
* *Arrowheads on hands are not superfluous*

14. The hands overlap within 2mm (1/16 of an inch)

* *For a point to be given for the hour or minute target number to be indicated it is not adequate for there to simply be an hour or minute number indicated on the clock. Instead the numbers indicated must be the correct target numbers (i.e., 11 and 2).*

**Centre**

15. One point is given for the centre being drawn or inferred

**Appendix 2**

**Consort chart for grouping procedure**

**Appendix 3**

**Factor Analysis Results**

Factor analysis with direct oblimin (nonorthogonal) rotation for the subtests in the executive control, semantic and working memory composites.

|  |  |
| --- | --- |
| **Pattern Matrixa** |  |
|  | Component |  |
| 1 | 2 | 3 | Communalities |
| Factor Eigenvalue | 2.64 | 2.02 | 1.89 |
| Semantic Knowledge | .669 | .031 | -.103 | .447 |
| Naming- MiNT | .840 | -.239 | .065 | .651 |
| Semantic Fluency | .624 | .061 | .149 | .481 |
| Similarities | .674 | .154 | -.049 | .524 |
| Alternating Sequences | .200 | .516 | -.133 | .342 |
| Serial Seven Subtraction | -.053 | .840 | .109 | .731 |
| Serial Three Subtraction | -.062 | .837 | .105 | .721 |
| Digit Symbol Forward | .059 | -.073 | .865 | .750 |
| Digit Symbol Backward | .006 | .148 | .804 | .727 |
| Trails B-Ab | .667 | .343 | .212 | .846 |
| Extraction Method: Principal Component Analysis.Rotation Method: Oblimin with Kaiser Normalization.1. Rotation converged in 8 iterations.
2. Not included in composites due to 1. mismatch between theoretical construct (executive control) and component loading (higher loading on semantic factor). 2. High rate of missing data
 |  |
| **KMO and Bartlett’s Test󠄴\*** |  |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .767 |  |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1600.791 |  |
| df | 45 |  |
| Sig. | .000 |  |

\*The KMO measure can be interpreted as the proportion of the common variance in the data, which is considered adequate for factor analysis when higher than 0.5. Bartlett’s test compares the correlation matrix of the observed variables with the identity matrix (where correlations are all zero). Significant result suggests enough redundancy between the variables, a pre-requisite for factor analysis. None of these measures indicate evidence against performing a factor analysis.