A. Neuropsychological Evaluation

1. Mattis Dementia Rating Scale (DRS)

Summary: The DRS is used as a screening measure in clinical and research contexts to assess general cognitive functioning and detect the presence of dementia or other deficits. Thirty-six verbal and written tasks are grouped into subscales assessing the cognitive domains of Attention, Initiation/Perseveration, Construction, Conceptualization, and Memory.
Domains evaluated: General Cognitive Functioning
References: Mattis S. (1976). Mental status examination for organic mental syndrome in the elderly patient. In: Bellak, L., & Karasu, T. B. (Eds.). *Geriatric Psychiatry* (77-121). Grune & Stratton.

2. Wechsler Adult Intelligence Scale-III (WAIS-III)

Summary: The WAIS-III is a test of adult intelligence used in clinical and research settings. The WAIS-III assesses intelligence through verbal and nonverbal tasks administered in a series of subtests.
References: Wechsler D. (1997). *Wechsler Adult Intelligence Scale - III*. Psychological Coorporation.

    a. Letter Number (LNS) subtest

    Summary: Letter Number is a working memory task where participants are asked to repeat groups of letters and numbers back, giving the numbers in numerical order (from lowest to highest) followed by the letters in alphabetical order.
    Domains evaluated: **Episodic Memory**

    b. Digit Symbol subtest

    Summary: Digit Symbol is a 90 second task of scanning and visual processing where participants fill in empty squares based on the number/symbol key at the top of the page.
    Domains evaluated: **Speed of Processing**

    c. Matrix Reasoning subtest

    Summary: Matrix Reasoning is a 26-item test where participants are shown an illustration of a matrix in which a section is missing. Beneath the matrix are five answer choices, one of which will complete the matrix in accordance with the rest of its pattern. Participants are meant to infer the pattern governing the components of the matrix and identify from the answer choices the option which would best complete it.
    Domains evaluated: **Fluid Reasoning**

    d. Vocabulary subtest

    Summary: For WAIS Vocab participants are asked to define words of increasing difficulty.
    Domains evaluated: **Vocabulary**

    e. WAIS-III Block Design subtest

    Summary: In WAIS Blocks, participants are asked to replicate models or pictures of two-color designs of increasing difficulty using blocks with two white sides, two red sides, and two half-red half-white sides.
    Domains evaluated: **Fluid Reasoning**

3. American National Adult Reading Test (AMNART)

Summary: AMNART is a 45-item reading test that can be used to estimate IQ. Participants are scored on the number of words correctly pronounced as well as number of errors.
Domains evaluated: **Vocabulary**

References: Lowe, A. D., & Rogers, S. A. (2011). Estimating premorbid intelligence among older adults. *Journal of Aging Research,* 1-7. doi:10.4061/2011/428132.

4. Wechsler Test of Adult Reading (WTAR)

Summary: The WTAR is a reading test that can be used to estimate IQ. Participants are asked to pronounce 50 words of increasing difficulty.
Domains evaluated: **Vocabulary**
References: Wechsler D. (2001). *Wechsler Test of Adult Reading*. The Psychological Corporation.

5. Selective Reminding Test (SRT)

Summary: SRT tests participants' verbal learning and memory in the domains of Immediate Recall, Delayed Recall, and Delayed Recognition. To test Immediate Recall, participants undergo a list-learning task where 12 words are read to them and they are given one minute to recall as many words from the list as possible. They are then reminded of the words they left out and prompted to recall the entire list. This process is repeated six times. Tests of Delayed Recall and Recognition are administered 15 minutes later, without prior warning to participants. For Delayed Recall participants are asked to list all the words they can remember from the original list. For Delayed Recognition they are read a list of words and are instructed to indicate whether or not each was on the original list.
Domains evaluated: Episodic **Memory**
References: Buschke, H., & Fuld, P. A. (1974). Evaluating storage, retention, and retrieval in disordered memory and learning. *Neurology, 24*(11), 1019-25. doi: 10.1212/wnl.24.11.1019. PubMed PMID: 4473151.

6. Trail Making Test – Parts A & B

Summary: For Trail Making Part A, participants connect a randomly dispersed sequence of encircled numbers in proper order by drawing pencil lines from one to the next, beginning at 1 and ending at 25. Time of completion and error count are recorded.
For Trail Making Part B, participants use the same technique to connect a randomly dispersed sequence of encircled numbers and letters in alternating numerical and alphabetical order, drawing a line from 1 to A to 2 to B to 3 and so on until they reach 13.
Domains evaluated: **Speed of Processing, Fluid reasoning, Executive function**
References: Reitan R. (1978). *Manual for Administration of Neuropsychological Test Batteries for Adults and Children.* Reitan Neuropsychology Laboratories, Inc.

7. Stroop Color and Word Test

Summary: The Stroop Color and Word Test is a collection of three pages, each listing 100 items. The Word page lists names of colors ("RED", "BLUE", "GREEN") printed in black ink, and participants have 45 seconds to read through as many colors as they can. The Color page lists columns of "XXXX" printed in red, blue, or green ink, and participants have 45 seconds to name the ink color each item is printed in. The Color-Word page lists the words from the Word page ("RED", "BLUE", "GREEN") printed in the colored ink from the Color page – which will always be a different color than the color name that is written out (i.e., "GREEN" will never be printed in green ink). Participants have 45 seconds to name the ink color each item is printed in, ignoring the word printed itself.
Domains evaluated: **Speed of Processing**
References: Golden, C. J. (1978). *Stroop Color and Word Test*. Stolting.

8. **Category Fluency Test**

Summary: For the Category Fluency Tests participants are prompted to list as many items of a particular category as they can in a single minute. In Verbal Fluency trials participants are given a letter and instructed to list as many words as they can beginning with that letter in the time allotted. In the Animal Category Fluency trial participants are asked to name as many animals as they can. Correct, incorrect, and repeated responses are all recorded.
Domains evaluated: **Language**
References: Goodglass, H., & Kaplan, E. (1983). *The Assessment of Aphasia and Related Disorders*.

9. **Wisconsin Card Sorting Test (WCST)**

Summary: In the Wisconsin Card Sorting Test, participants are shown a key of four cards varying in number, figure, and color and are instructed to place the rest of the cards from the deck, one by one, below the key card they believe to match. The cards are matched based on the varying categories of figure, color, and number, none of which are communicated to participants. Participant are only informed whether their choice of placement was correct or incorrect, and are left to infer based on feedback where to place the next card. After 10 correct card placements in a row the category changes, without informing participants.
Domains evaluated: **Executive function: set switching**
References: Grant, D. A., & Berg, E. A. *Wisconsin Card Sorting Test.* Psychological Corporation.

10. **Grooved Pegboard**

Summary: The Grooved Pegboard consists of 25 holes with randomly positioned slots. Participants are tasked with rotating the pegs, each with a key along one side, to correctly match and fit each hole in sequence, using only one hand and picking up one peg at a time. The task is performed using participants' dominant hand first and then repeated with the non-dominant hand.
Domains evaluated: Sensorimotor speed
References: Lafayette Instruments. (2002). *Grooved pegboard test user instructions.*

11. **Mobility/Gait; Gait Letter Fluency**

Summary: Mobility and gait are assessed through standing and walking tasks performed with an accelerometer measuring mobility, gait, and posture. Measurements are taken while participants practice the respective tasks of rising from a chair and walking around the examiner, standing still for one minute, and walking up and down the hallway for one minute. Each of these exercises is performed twice. During the second trial of the standing and walking tasks, participants are instructed to repeat the verbal fluency task, given a new letter with which to produce as many words as they can while their gait is measured.
Domains evaluated: Mobility/Gait
References: Weiss, A., Herman, T., Plotnik, M., Brozgol, M., Giladi, N., & Hausdorff, J. M. (2011). An instrumented timed up and go: the added value of an accelerometer for identifying fall risk in idiopathic fallers. *Physiological Measurement, 32*(12), 2003-18. doi: 10.1088/0967-3334/32/12/009. PubMed PMID: 22094550