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## COGNITIVE FUNCTION BATTERY

### 1. Background and Rationale

Cognitive function may decline as a result of certain risk factors and diseases. This in turn could adversely impact the physical functioning and quality of life of older adults. After a certain level of decline, dementia can develop. Dementia is a major illness and cause of disability among the elderly.

This protocol provides an overview and introduction to the battery of cognitive function tests. Instructions for “Feelings” and “Moods in the Last Week” are included below. Please refer to the individual protocols for specific administration and scoring instructions for all other tests.

### 2. Equipment and Supplies

- Clip board
- No. 2 pencils with eraser
- Black felt-tip pen
- Stop watch
- Cognitive Function Battery TeleForms
  - 3MS
  - California Verbal Learning Test (CVLT)
  - Digit Span
  - Trails B
  - Feelings
  - Moods in the Last Week
  - Verbal Fluency
  - Category Fluency
  - Functional Assessment Questionnaire

#### For 3MS

- "Close your eyes"
- Several pieces of blank paper
- Intersecting pentagons Worksheet
- Wrist watch

#### For Trails B

- Trails B sample
- Trails B Worksheet

#### For Feelings

- Card with response choices last 7 questions

### 3. Safety Issues and Exclusions

None.

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#### **4. Participant and Exam Room Preparation**

Prior to the visit, the participant should be reminded to bring in glasses or hearing aids if she wears them, as visual and auditory impairments could affect cognitive function scores.

The Cognitive Function Battery should be administered in a quiet place, with minimal distractions, at a desk or table the participant can use to write on. Unless it is policy at the clinic for examiners to never knock or open a closed examination room door, we strongly encourage that a special sign be posted indicating that tests are being administered and to please not interrupt. If a temporary condition that could interfere with a participant's optimal performance cannot be removed, the participant should be moved to another location. Make sure that the participant does not see the test administrator's TeleForms. (It is suggested that that you place the forms on a clipboard.)

Instruct the participant before the cognitive tests that they need to be sure to concentrate during these tests and to try to only respond to the questions being asked. Let her know that after the tests are completed, you can talk more freely.

A cooperative relationship between the participant and the examiner is an essential part of all assessment situations. An accepting, non-threatening tone of interaction will promote rapport. When the participant seems at ease, briefly introduce the Cognitive Function Battery in terms that are easy to understand. For example, the examiner could introduce the battery by saying:

*"We will be doing a series of tests of memory and concentration. It's important that you try to do your best. Some of the things we are going to do may be easy, and some parts may be a little harder. You're not expected to get all of them right. Just do your best and that will be fine."*

If the participant expresses misconceptions or concerns about the testing, address these concerns in a non-threatening, truthful manner.

If a participant's morale seems to be flagging, provide encouragement. You may offer some encouragement by saying "You're doing fine." or "These are not supposed to be easy."

#### **5. Detailed Measurement Procedures**

##### **5.1 General Issues**

Examiners should thoroughly familiarize themselves the protocols for each test prior to administration. The tests should be administered in the following order. This allows for a

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built in delay of 10-15 minutes between the first part of the CVLT and the second part. Please note: there are fields on all of the cognitive function tests to record if the participant “refused” to complete the test.

1. 3MS
2. CVLT: Part 1
3. Digit Span
4. Trails B
5. Feelings
6. Moods in the Last Week
7. CVLT: Part 2
8. Verbal Fluency
9. Category Fluency

### **3MS**

This test is five pages long and includes 19 items. It should take about 15 minutes to administer. Please refer to the 3MS protocol for detailed administration and scoring instructions.

### **California Verbal Learning Test (CVLT): Part 1**

The first part of this test contains two tests: Intermediate Free Recall and the Short Delay Free Recall. The Intermediate Free Recall consists of four trials, where the participant is asked to remember and repeat words from a list of 12 words. The Short Delay Free Recall is administered after a “30 second distractor” and requires the participant to recall words from the list of 12 that she was read during the Intermediate Free Recall.

A time delay is needed before Part 2 of the CVLT can be delivered. The following four tests are administered to provide this delay. See a description of Part 2 of the CVLT below.

Please refer to the CVLT protocol for detailed administration and scoring instructions.

### **Digit Span**

This test consists of two parts: Digits Forward and Digits Backward on two separate TeleForms. Please refer to the Digit Span protocol for detailed administration and scoring instructions.

### **Trails B**

Please refer to the Trails B protocol for detailed administration and scoring instructions.

### **Moods in the Last Week**

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This is the standardized measure of depression (Geriatric Depression Scale), used in prior SOF visits.

### **Feelings**

The first half of the form consists of nine questions taken from the Goldberg Anxiety Scale and will be used to measure anxiety in SOF participants. These questions ask a variety of questions about how the participant has felt over the last four weeks. All questions should be answered.

The second half of the form consists of common symptoms of anxiety and is derived from the Beck Anxiety Inventory. Participants are asked to rate their experience of these symptoms from “Not at all” to “Severely.” A card will be provided with response choices. Present this card to the participant to refer to when she is responding to the questions.

### **CVLT: Part 2**

Part 2 of the CVLT consists of the Long-Delay Free Recall and the Long-Delay Yes/No Recognition. Please refer to the CVLT protocol for detailed administration and scoring instructions.

### **Verbal and Category Fluency Exams**

Please refer to the Verbal and Category Fluency Exam protocol for detailed administration and scoring instructions.

### **Functional Assessment Questionnaire**

The Functional Assessment Questionnaire is adapted from the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) and is widely used as a screening test for dementia, particularly where the subject is unable to undergo direct cognitive testing or for screening in populations with low levels of education and literacy. The Functional Assessment Questionnaire assesses change in the participant’s functional abilities and provides information on whether the participant has experienced cognitive decline.

The Functional Assessment Questionnaire should only be administered if the participants have agreed to this in their consent form and should only be sent to the contact person specified by the participant at the time the consent is reviewed and signed. Please refer to the Functional Assessment protocol for detailed administration and scoring instructions.

## **5.2 General Scoring Issues**

The following tests should be scored directly following the participant’s exam or as soon as possible following the clinic or home visit.

1. 3MS
2. CVLT
3. Digit Span
4. Trails B
5. Verbal Fluency
6. Category Fluency
7. Functional Assessment Questionnaire

## **6. Procedures for Performing the Measurement at Home**

Same as for in-clinic measurement.

## **7. Alert Values/Follow-up/Reporting**

When the interview is completed, thank the participant without offering specific feedback on their performance. You might say, “Thank you for doing this interview.”

No alert values. A score of 80 or less is roughly comparable to a score of 24 on the 0-30 scale and is used as a screening cut point for cognitive impairment. This is a screening test that varies with age and education. Additional clinical evaluation is needed for diagnosis. The field center physician or designee should look at the 3MS score compared to baseline and in the context of what else is known about the person, discuss the results with the participant on an individual basis. This may include sending the results to their doctor with permission.

## **8. Quality Assurance**

### **8.1 Training Requirements**

The examiner requires no special qualifications or prior experience to administer the Cognitive Function battery. Training should include:

- Read and study manual
- Attend SOF training session on techniques (or observe administration by experienced examiner)
- Practice on volunteers
- Discuss problems and questions with local expert or QC officer

### **8.2 Certification Requirements**

Please refer to the individual test protocols for certification requirements.

### 8.3 Quality Assurance Checklist

Please refer to the individual test protocols for specific quality assurance requirements.