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## DIGIT SPAN TEST (DST)

### 1. Background and Rationale

The Digit Span Test (DST) is primarily a measure of auditory attention. It is comprised of two different tests: Digits Forward Test and Digits Backward Test. Both tests consist of seven pairs of random number sequences that the examiner reads aloud at the rate of one per second.

Administration of each test requires approximately 5 minutes.

### 2. Equipment and Supplies

- Black pen

### 3. Safety Issues and Exclusions

None.

### 4. Participant and Exam Room Preparation

The participant should be seated in a quiet room at a table in a comfortable position. Have a supply of number 2 pencils and a large rubber eraser handy.

### 5. Detailed Measurement Procedures

#### 5.1 Digits Forward Test

The participant is asked to repeat each sequence exactly as it is given.

Say to the participant:

*“I am going to say some numbers. Please listen carefully as I will ask you to repeat the numbers in exactly the same order that I read them to you.”*

First, read the Trial I (from the first item). Read numbers at a rate of one digit per second. Allow the participant to repeat the numbers after you. Then, read the Trial II (from the first item). Allow the participant to repeat the numbers after you.

When the participant repeats the sequence correctly, the examiner reads the next longer sequence. Continue until the participant fails a pair of sequences (i.e., both trials of any one item). Discontinue test after failure on both trials of any item.

If the participant refuses to take the test from the start, mark “Refused” on the form. If they begin the test, but refuse to continue part way through the test will be considered complete and they will be scored up to that point.

If the participant does not get either trial correct in Item 1, they will score “0” for each and “0” for the “Total Points” at the bottom. The “Maximum Successful Digits Forward” will be “0” as well.

## 5.2 Digits Backward Test

Administer the Digits Backward Test even if the participant scores ‘0’ on Digits Forward.

Say to the participant:

*“Now I am going to say more numbers. Please listen carefully. When I stop, I want you to say them backwards-the last number first and the first number last. For example, if I say 1-2-3, you would say 3-2-1.”*

First, read the Trial I (from the first item). Read numbers at a rate of one digit per second. Allow the participant to say the numbers backwards after you. Then, read the Trial II (from the first item). Allow the participant to say the numbers backwards after you.

You may remind the participant once to recite the digits “backwards,” if she continues to recite the numbers in the order you present them. After one prompt, score as incorrect if the numbers are still being repeated in forward order.

When the participant responds correctly, the examiner reads the next longer sequence. Continue until the participant fails a pair of sequences (i.e., both trials of any one item). Discontinue test after failure on both trials of any item.

If the participant refuses to take the test from the start, mark “Refused” on the form. If they begin the test, but refuse to continue part way through the test will be considered complete and they will be scored up to that point.

If the participant does not get either trial correct in Item 1, they will score “0” for each and “0” for the “Total Points” at the bottom. The “Maximum Successful Digits Backward” will be “0” as well.

## 6. Procedures for Performing the Measurement at Home

Same as for in-clinic measurement.

## 7. Scoring

The same scoring rules apply to both Digit Forward Test and Digit Backward Test. Proceed with the test if the correct response is given. If incorrect, provide additional assistance or instruction until the participant understands the task. Administer the 2<sup>nd</sup> trial even if the 1<sup>st</sup> trial is incorrect. Discontinue the test if both trials (within one item) fail.

1 point: when either the Trial I or Trial II (from every item) is done correctly

2 points: when the Trial I and the Trial II (from every item) is done correctly

Add up the points and enter total score.

Record the maximum successful digits forward and backward at the bottom of the form. Even if the participant only correctly responded for one of the two trials in an item, record the longest number of digits she was able to recite. For example, if she successfully recites 7 digits forward in Trial 1 of Item 5, but fails Trial 2 of Item 5, and then proceed to fail Trials 1 and 2 of Item 6 (8 digits), her “maximum successful digits forward” would be 7. If the participant fails both trials in Item 1, the maximum successful digits forward and backward will be 0.

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

See Cognitive Function Battery Overview.

## **9. Quality Assurance**

### **9.1 Training Requirements**

The examiner requires no special qualifications or prior experience to perform this assessment. 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

### **9.2 Certification Requirements**

- Complete training requirements
- Conducts exam while being observed by QC officer

### **9.3 Quality Assurance Checklist**

- Subject given correct instructions and demonstration
- Both trials per item are administered, even if the participant passes the first trial
- Test is discontinued after participant fails both trials of any item.