

Documentation for Cognitive Vitality Substudy Datasets (Includes Years 3, 5, 7, and 9)

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COGNITIVE VITALITY SUBSTUDY

1. Design:

The cognitive vitality substudy subset was created by selecting 65 “well functioning” participants and 65 randomly selected participants from each Field Center in each race/gender category, in hopes of recruiting 50 from each category. “Well functioning” was defined as the 65 fastest complete Long Distance Corridor Walk times from Year 2. Since not all Year 2 data were entered by the start of Year 3, a tentative subset list was drawn up from the available data, and then the “well functioning” list was modified after all data entry was complete. This resulted in some participants having cognitive vitality substudy measurements who were not on the final substudy list. It also resulted in a few participants who were on the final list but had already had their clinic visit by the time the final list was available and who did not wish to return for measurements. In addition, at about mid-year, a reconciliation was done between the substudy list and the entered data to see whether a sufficient sample size of each race/gender subgroup would be collected by the end of the year, once refusals, ineligible, deaths, and missed visits were factored in. It became apparent that the rate of participation was lower in the African-American male and African-American female subgroups than in the white male and white female subgroups, particularly in the randomly selected subgroups. An additional sample of 30 randomly selected African-American males and 30 African-American females was added to the subset for each Field Center to correct for this.

In Years 5, 7, and 9, most of the cognitive vitality substudy measurements were repeated in all participants enrolled in the substudy who were available and willing to participate. Please see Appendix III for a complete list of measurements done in each of the 4 years.

2. Sample characteristics:

The datasets each contains 1207 records (all participants from the year 3 cognitive vitality substudy even if they refused to participate or were deceased). The race and gender breakdown of participants with follow-up data (based on the those who entered workbooks with at least one checklist item marked “yes”) is as follows:

| | N (Year 3) | N (Year 5) | N (Year 7) | N (Year 9) |
|-------------------------|------------|------------|------------|------------|
| African-American female | 234 | 201 | 206 | 180 |
| African-American male | 216 | 183 | 175 | 150 |
| White female | 234 | 212 | 214 | 193 |
| White male | 245 | 226 | 220 | 201 |
| Total | 929 | 822 | 815 | 724 |

3. Data sources:

The 4 datasets for this substudy come from the following sources. Please see Appendix III for more detailed information about which measurements are found on each of the listed workbooks.

Year 3

Cognitive Vitality Substudy Workbook

Clinic Visit Workbook

Year 5

Cognitive Vitality Substudy Workbook

Clinic Visit Workbook

Core Home Visit Workbook

Year 5 Visit-Specific Home Visit Workbook

Year 7

Cognitive Vitality Substudy Workbook

Year 9

Cognitive Vitality Substudy Workbook

Please note that not all variables on the annotated forms are contained in the dataset. All variables not found in the dataset are listed in Dropped Variables and Alternates (Appendix I). Alternate variables to use (if applicable) are also listed. A list of the calculated variables can be found in Calculated Variables for the Cognitive Vitality Substudy (Appendix IV). A complete list of variable names can be found in the Contents.lst (zipped with data the file).

4. Dataset structure and contents

The Cognitive Vitality datasets each contains a single observation per participant.

Key variables:

| | |
|--------|--|
| HABCID | HABC Enrollment ID without the 2-letter prefix |
| SITE | HABC Clinic site: 1=Memphis; 2=Pittsburgh |

5. Special Missing Value Codes

SAS allows for stratification of missing values. The following missing values have been assigned:

. = 'Missing Form'
.A = 'A:Not Applicable'
.M = 'M:Missing'
.N = 'N:Not Required'

Description

. : Missing Form

Used when a value is missing because the entire form has not been entered or the participant does not exist in the database from the corresponding Reading Center.

A: Not Applicable

Used when a value is missing but the value is not required (due to simple skip pattern logic)

M:Missing

Used to flag missing values when the value is required (i.e., true missing values).

N:Not Required

Used when a value is missing but the value is not required (not due to simple skip pattern logic). For example, for checkbox variables which are “Check all that apply”: each one, individually, is not required. Some variables whose skip pattern logic is non-standard (i.e., the skip pattern involves several variables and forms) also have .N flags when missing, whether or not a response was required due to the skip pattern. In all of these cases, a special cross check was used to edit missing responses.

6. Dataset index formulation and key variable mapping

The datasets are sorted by HABCID, which is a unique identifier for each participant.

7. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

8. Strengths and weaknesses of dataset items:

All participants eligible for follow-up in the substudy who at had at least some kind of annual contact are represented by at least a checklist. Those who refused all tests may or may not have the remainder of the workbook.

In version 3.14, the Y3CogVit accidentally had Year 5 Teng MMSE scores. This error has been corrected in version 3.2. In addition, in versions 3.2, 5.2, 7.1, and 9.1, an error has been corrected that scored MMMSCORE (the 3MS score for the Teng Mini-Mental State Exam (MMSE)) one point too low for participants who incorrectly identified the current month by one month within 5 days of the beginning or end of the month. Digit Symbol Substitution (DSS) scores have also been further edited. As of versions 3.2, 5.2, 7.1, and 9.1, these datasets are in sync with the scoring in all other years in all other dataset with these same version numbers.

Appendix I

YEAR 3 DROPPED VARIABLES AND ALTERNATES

| Variable omitted | Variable to use |
|-------------------------|------------------------|
| CJACROS | N/A (confidentiality) |
| CKACROS – CKACRO17 | N/A (confidentiality) |
| CJLINK | N/A (bookkeeping) |
| CJID | HABCID |
| CKID – CKID17 | HABCID |
| CKSTFID2 – CKSTID17 | CKSTFID |
| GCSRTAM1 | GCSRT241 |
| GCSRTAM2 | GCSRT242 |
| GCSRTM1 | GCSRT241 |
| GCSRTM2 | GCSRT242 |

YEAR 5 DROPPED VARIABLES AND ALTERNATES

| Variable omitted | Variable to use |
|------------------|-----------------------|
| ECACROS | N/A (confidentiality) |
| EDACROS | N/A (confidentiality) |
| ECLINK | N/A (bookkeeping) |
| EDLINK | N/A (bookkeeping) |
| ECID | HABCID |
| EDID | HABCID |
| EDSRTAM1 | EDSRT241 |
| EDSRTAM2 | EDSRT242 |
| EDSRTM1 | EDSRT241 |
| EDSRTM2 | EDSRT242 |

YEAR 7 DROPPED VARIABLES AND ALTERNATES

| Variable omitted | Variable to use |
|------------------|-----------------------|
| GBACROS | N/A (confidentiality) |
| GCACROS | N/A (confidentiality) |
| GCACROS2 | N/A (confidentiality) |
| GBLINK | N/A (bookkeeping) |
| GCLINK | N/A (bookkeeping) |
| GBID | HABCID |
| GCID | HABCID |
| GCID2 | HABCID |
| GCSRTAM1 | GCSRT241 |
| GCSRTAM2 | GCSRT242 |
| GCSRTM1 | GCSRT241 |
| GCSRTM2 | GCSRT242 |
| GCT1W1 – GCT7W12 | N/A (bookkeeping) |

YEAR 9 DROPPED VARIABLES AND ALTERNATES

| Variable omitted | Variable to use |
|-------------------|-----------------------|
| J1ACROS – J9ACROS | N/A (confidentiality) |
| JAACROS – JSACROS | N/A (confidentiality) |
| J1ID – J9ID | HABCID |
| JAID – JSID | HABCID |
| J2STFID-J9STFID | J1STFID |
| JASTFID-JSSTFID | J1STFID |
| JBSRTAM1 | JBSRT241 |
| JBSRTAM2 | JBSRT242 |
| JBSRTM1 | JBSRT241 |
| JBSRTM2 | JBSRT242 |
| JBT1W1 – JBT7W12 | N/A (bookkeeping) |

Appendix II

Cognitive Vitality Substudy Workbooks

NOTE: For variables that were done as a part of the usual annual exam rather than as a part of the Cognitive Vitality Substudy, please refer to the annotated forms for that annual visit. This applies to the following measurements:

Teng Mini-Mental State Exam (Years 3 and 5)

CES-D10 Depression Scale (Years 3 and 5)

Digit Symbol Substitution Test (Year 5)

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CJID

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CJACROS

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Year

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CJSTFID

COGNITIVE VITALITY SUBSTUDY PROCEDURE CHECKLIST

| Test | Page Numbers | Please check if done | | | Comments |
|---|--------------|----------------------|-------------------------|------------------|----------------|
| | | Yes | No, participant refused | No, other reason | |
| 1. Buschke Selective Reminding Test (SRT) | 3 | | | | |
| a. Trial 1 | | ① | ① | ② | CJSRT1 |
| b. Total Recall | | ① | ① | ② | CJSRTTR |
| c. Trial 6 LTS | | ① | ① | ② | CJSRT6 |
| d. 20-30 Minute Recall | | ① | ① | ② | CJSRT20 |
| 2. Activity Assessment | 5 | ① | ① | ② | CJAA |
| 3. Social Contact | 6 | ① | ① | ② | CJSC |
| 4. Personality Assessment | 7 | ① | ① | ② | CJPA |
| 5. Boxes Test | 8 | ① | ① | ② | CJBT |
| 6. Digit Copying Test | 10 | ① | ① | ② | CJDCT |
| 7. Pattern Comparison Test | 12 | ① | ① | ② | CJPCT |
| 8. Letter Comparison Test | 15 | ① | ① | ② | CJLCT |
| 9. Simple Reaction Time Test | 18 | ① | ① | ② | CJSRTT |
| 10. Digit Digit Test | 19 | ① | ① | ② | CJDDT |
| 11. Digit Symbol Test | 20 | ① | ① | ② | CJDST |

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| HABC Enrollment ID # | Acrostic | Date Form Completed | Staff ID # |
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| CKID | CKACROS | Month Day Year | CKSTFID |

CKDATE

SCREENER FOR COGNITIVE VITALITY SUBSTUDY

1 Do you have difficulty seeing large print? **CKLPRINT**

- 1 Yes
 0 No
 8 Don't know
 7 Refused

Participant is NOT eligible for Cognitive Vitality Substudy. Go to Question #3.

2 Do you have a health or physical problem that makes it difficult for you to grasp and use a pen?

- 1 Yes
 0 No
 8 Don't know
 7 Refused
 CKGRASP

Participant is NOT eligible for Cognitive Vitality Substudy. Go to Question #3.

3 Is the participant eligible for the Cognitive Vitality Substudy?

- 1 Yes
 0 No
 CKELIG

Not eligible. Do NOT administer Cognitive Vitality Substudy. STOP.

Administer Cognitive Vitality Substudy. Go to Question #4.

4 Did the participant refuse all of the Cognitive Vitality Substudy tests?

- 1 Yes
 0 No
 CKREF

Administer Cognitive Vitality Substudy.

Do NOT administer Cognitive Vitality Substudy.

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|---|---|---|---|
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| CKID2 | CKACROS2 | CKDATE2 | CKSTFID2 |

COGNITIVE VITALITY SUBSTUDY

BUSCHKE SELECTIVE REMINDING TEST (SRT)

Purpose:

To measure verbal learning and memory during a multiple-trial list-learning task.

Administration:

Have the participant sit comfortably at a desk or table.

Script: "This is a test to see how quickly you can learn a list of words. I am going to read you a list of 12 words. I want you to listen carefully, because when I stop, I want you to tell me as many of the words as you can recall. The words do not have to be in any particular order. When you have given me all the words that you can recall, I will tell you the words you didn't give me from the list; then I want you to give me the entire list all over again. We do this 6 times, and each time I want you to try to give me all 12 words."

Place a laminated card (**show Card #1**) with the first word on the list in front of the participant. Say the word aloud. After 5 seconds, repeat this procedure with the second word (**show Card #2**). Repeat this procedure for all 12 words, showing one card every 5 seconds (**show Cards #3 through #12**). After the last word is shown, ask the participant to recall as many words as they can.

Script: "I want you to tell me as many of the words as you can."

Place an "X" next to each word recalled under the column headed Trial 1. After 60 seconds, read the list of words at the rate of one word per 2 seconds skipping over the words that were recalled correctly on the preceding trial. Always present the words in order beginning with the top of the list and working to the bottom. Give the participant 60 seconds for each trial. Mark with an "X" all words correctly recalled for each trial. If the participant is able to recall correctly all 12 words on three consecutive trials, discontinue, but score as if all trials had been given. That is, give the participant a score of 12 for each of the remaining trials, and a score of 12 for the long-term storage (LTS) component (see below). If the participant recalls words not on the list, inform the participant, by saying something like "cat is not one of the words."

The final learning trial is Trial 6. Count the number of words recalled at least twice in a row that were also recalled in Trial 6. If the second time a word is recalled twice in a row is Trial 6, it still counts as an LTS (long-term storage).

Immediately following the sixth trial, set the timer for 28 minutes, then administer the Activity Assessment.

After at least 20 minutes but no more than 30 minutes, ask the participant to recall all 12 words.

Script: "Remember the list of words I gave you earlier? I want you to tell me as many of the words as you can recall."

During the 20 to 30-minute delay, the other components of the Cognitive Vitality Substudy should be administered.



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| CKID3 | CKACROS3 | CKDATE3 | CKSTFID3 |

COGNITIVE VITALITY SUBSTUDY BUSCHKE SELECTIVE REMINDING TEST (SRT)

| | Trial 1 | Trial 2 | Trial 3 | Trial 4 | Trial 5 | Trial 6 | 20-30 min |
|----------|---------|---------|---------|---------|---------|---------|-----------|
| bowl | | | | | | | |
| passion | | | | | | | |
| dawn | | | | | | | |
| judgment | | | | | | | |
| grant | | | | | | | |
| bee | | | | | | | |
| plane | | | | | | | |
| county | | | | | | | |
| choice | | | | | | | |
| seed | | | | | | | |
| wool | | | | | | | |
| meal | | | | | | | |

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|---|---|
| a. Trial 1: Count the number of words recalled in Trial 1 (maximum=12). | <input type="text"/> <input type="text"/> CKSRTT1 |
| b. Total Recall: Count the number of words recalled over the first 6 trials (maximum=72). | <input type="text"/> <input type="text"/> CKSRTREC |
| c. Trial 6 LTS (long-term storage): Count the number of words recalled at least twice in a row that were also recalled in Trial 6 (the final learning trial). If the second time a word is recalled twice in a row is Trial 6, it still counts as an LTS (maximum=12). | <input type="text"/> <input type="text"/> CKSRTLTS |
| d. Record time of <u>start</u> of 20-30 minute recall period (time when timer is set for 28 minutes). | <input type="text"/> : <input type="text"/> <input type="text"/> <input type="text"/> ^① am CKSRTM1 ^② pm CKSRTAM1 |
| e. Record time of <u>end</u> of 20-30 minute recall period. | <input type="text"/> : <input type="text"/> <input type="text"/> <input type="text"/> ^① am CKSRTM2 ^② pm CKSRTAM2 |
| f. 20-30 minute Recall: Count the number of words recalled after 20-30 minute delay (maximum=12). | <input type="text"/> <input type="text"/> CKSRT20R |
| g. Was the complete Buschke Selective Reminding Test administered (Trials 1-6 and 20-30 minute recall)? | ^① Yes ^② No, participant refused ^③ No, other reason CKSRTC |

Page Link #

Draft



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CKID4

CKACROS4

Month

Day

Year

CKSTFID4

COGNITIVE VITALITY SUBSTUDY ACTIVITY ASSESSMENT

Script: "For each of the following activities, please tell me how often you did them in the past year: (REQUIRED: Show Card #13). Not at all (0), Once or twice only (1), Less than once a month (2), At least monthly (3), Less than once a week (4), At least every week (5), Several times a week (6), or Daily (7). You can just say the number next to your choice if you want."

| Activity In the past 12 months, how often did you...? | Frequency | | | | | | | | | |
|---|------------|--------------------|------------------------|------------------|-----------------------|---------------------|----------------------|-------|------------|---------|
| | Not at all | Once or twice only | Less than once a month | At least monthly | Less than once a week | At least every week | Several times a week | Daily | Don't know | Refused |
| 1. Do a crossword or other word puzzle. CKAA01 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2. Work on a jigsaw puzzle. CKAA02 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 3. Read a newspaper or magazine article. CKAA03 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. Read a novel or other fiction. CKAA04 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 5. Read non-fiction like a biography or history book. CKAA05 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 6. Play board games, bingo, bridge, or other card games. CKAA06 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7. Use a computer. CKAA07 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 8. Go to the library. CKAA08 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 9. Play a musical instrument. CKAA09 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10. Participate in recreational games like darts, pool, horseshoes, etc. CKAA10 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 11. Write a letter, article, poem, or story. CKAA11 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 12. Travel 100 miles or more from your home. CKAA12 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 13. Do handcrafts, sewing, or needlework. CKAA13 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 14. Do carpentry, wood working, or model building. CKAA14 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 15. Do art projects, sketching or drawing, photography, or painting. CKAA15 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 16. Go out to a movie. CKAA16 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 17. Attend a concert or the theater. CKAA17 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 18. Visit a museum, zoo, aquarium, or science center. CKAA18 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 19. Attend a sports event like a baseball, football, basketball game. CKAA19 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 20. Take a class or adult education course. CKAA20 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 21. Attend a lecture, discussion, or public meeting. CKAA21 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 22. Participate in church, community, or social club activities (in addition to those mentioned above). CKAA22 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

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| HABC Enrollment ID # <input type="text" value="H"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKID5 | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKACROS5 | Date Form Completed CKDATE5 <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> Month Day Year CKSTFID5 | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKSTFID5 |
|---|--|---|--|

**COGNITIVE VITALITY SUBSTUDY
SOCIAL CONTACT**

1 Please tell me, in a typical week, how often do you get together with friends or neighbors?
(REQUIRED: Show Card #14)

- 4 At least once a day **CKSCFRND**
- 3 4-6 times/week
- 2 2-3 times/week
- 1 1 time/week
- 0 Less than once/week
- 8 Don't know
- 7 Refused

2 In a typical week, how often do you get together with children or other relatives?
(REQUIRED: Show Card #14)

- 4 At least once a day **CKSCREL**
- 3 4-6 times/week
- 2 2-3 times/week
- 1 1 time/week
- 0 Less than once/week
- 8 Don't know
- 7 Refused

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CKID6
CKACROS6

Month Day Year

CKSTFD6

COGNITIVE VITALITY SUBSTUDY PERSONALITY ASSESSMENT

Script: "Now I'm going to read some statements. Listen carefully. For each statement, choose the response on this card that best represents your opinion. **(REQUIRED: Show Card #15)** Choose Strongly disagree (1) if the statement is definitely false for you. Choose Disagree (2) if the statement is mostly false. Choose Neutral (3) if you can't decide. Choose Agree (4) if the statement is mostly true. Choose Strongly agree (5) if the statement is definitely true for you. For example, if the statement was "I laugh easily," and this was definitely true for you, you would say "Strongly agree."

Examiner Note: If the participant is not familiar with a word used in a statement, you may give them a synonym for the unfamiliar word. Appropriate substitutions are listed in the operations manual.

| Statement | Level of Agreement | | | | | |
|---|--------------------|----------|---------|-------|----------------|---------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | Refused |
| 1. I don't like to waste my time daydreaming. CKPA01 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 2. I keep my belongings neat and clean. CKPA02 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 3. Once I find the right way to do something, I stick to it. CKPA03 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 4. I'm pretty good about pacing myself so as to get things done on time. CKPA04 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 5. I am intrigued by the patterns I find in art and nature. CKPA05 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 6. I am not a very methodical person. CKPA06 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 7. I believe letting students hear controversial speakers can only confuse and mislead them. CKPA07 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 8. I try to perform all the tasks assigned to me conscientiously. CKPA08 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 9. Poetry has little or no effect on me. CKPA09 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 10. I have a clear set of goals and work toward them in an orderly fashion. CKPA10 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 11. I often try new and foreign foods. CKPA11 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 12. I waste a lot of time before settling down to work. CKPA12 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 13. I seldom notice the moods or feelings that different environments produce. CKPA13 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 14. I work hard to accomplish my goals. CKPA14 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 15. I believe we should look to our religious authorities for decisions on moral issues. CKPA15 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 16. When I make a commitment, I can always be counted on to follow through. CKPA16 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 17. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement. CKPA17 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 18. Sometimes I'm not as dependable or reliable as I should be. CKPA18 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 19. I have little concern in speculating on the nature of the universe or the human condition. CKPA19 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 20. I am a productive person who always gets the job done. CKPA20 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 21. I have a lot of intellectual curiosity. CKPA21 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 22. I never seem to be able to get organized. CKPA22 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 23. I often enjoy playing with theories or abstract ideas. CKPA23 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |
| 24. I strive for excellence in everything I do. CKPA24 | ① 1 | ② 2 | ③ 3 | ④ 4 | ⑤ 5 | ⑦ Ref |



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| HABC Enrollment ID # <input type="text" value="H"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKID7 | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKACROS7 | Date Form Completed <input type="text"/> / <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Month Day Year CKDATE7 | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKSTFID7 |
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**COGNITIVEVITALITY SUBSTUDY
BOXES TEST**

- ◆ Give the participant a pen and place the Boxes Test worksheet on the desk or table in front of the participant. Using the first three boxes at the top of the Boxes Test worksheet, demonstrate the task to the participant. Have the participant practice the test with the remaining seven boxes.

Script: "Please complete as many boxes as you can, like this."
[Demonstrate, working rapidly. Use the first three boxes.]
"Now, you try the rest of the boxes above the line."
[After the participant completes the practice boxes, show the participant where to begin the test.]
"Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."

- ◆ Start timing.
- ◆ After 30 seconds, say: *"STOP. Thank you."*
- ◆ For scoring, count the number of successfully completed boxes below the line and record this number below.

| | |
|--|--|
| <p align="center">CKBOX</p> <p>Score: <input type="text"/> <input type="text"/> <input type="text"/> number completed</p> | <p align="center">CKBOXREF</p> <p><input type="checkbox"/> Participant refused Boxes Test</p> |
|--|--|

- ◆ Go on to the next test.

| HABC Enrollment ID # | Acrostic | Date Form Completed | Staff ID # |
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| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> / <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| CKID8 | CKACROS8 | CKDATE8 | CKSTFID8 |

**COGNITIVEVITALITY SUBSTUDY
DIGIT COPYING TEST**

- ◆ Give the participant a pen and place the Digit Copying Test worksheet on the desk or table in front of the participant. Using the boxes at the top of the Digit Copying Test worksheet, demonstrate the task to the participant.

Script: "Please copy the number that appears in the top box in the bottom box, like this."

[Demonstrate, working rapidly. Use the first three boxes.]

"Now, you try the rest of the boxes above the line."

[After the participant completes the practice boxes, show the participant where to begin the test.]

"Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."

- ◆ Start timing. After 30 seconds, say: "STOP. Thank you."
- ◆ For scoring, count the number of digits correctly copied onto the Digit Copying Test worksheet (below the line) and record this number below.

| | | | | | |
|----------------|--|------------------|-----------------|--|--|
| CKDIGIT | | | CKDIGREF | | |
| Score: | <input type="text"/> <input type="text"/> <input type="text"/> | number completed | ① | Participant refused Digit Copying Test | |

- ◆ Go on to the next test.

| | | | |
|---|---|---|--|
| HABC Enrollment ID # | Acrostic | Date Form Completed | Staff ID # |
| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> / <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |
| CKID9 | CKACROS9 | CKDATE9 | CKSTFID9 |

COGNITIVEVITALITY SUBSTUDY PATTERN COMPARISON TEST

- ◆ Give the participant a pen and place the Pattern Comparison Practice worksheet on the desk or table in front of the participant.

Script: "In this test you will be asked to determine whether two patterns of lines are the same or different. If the two patterns are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box marked "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair of line patterns. Try the following examples."

- ◆ Make sure the participant understands the instructions before continuing. Place the Pattern Comparison Test Sheet face down in front of the participant, then say:

Script: "You will have 30 seconds to compare as many line patterns as possible. When I say go, turn the sheet over and start. Ready? Go."

- ◆ Start timing immediately after the participant turns the test worksheet over. After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Pattern Comparison Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear to the data managers that these answers are not to be counted as completed. Go on to the next test.

CKPCRF

① Participant refused Pattern Comparison Test



| HABC Enrollment ID # | Acrostic | Date Form Completed | Staff ID # |
|--|--|--|--|
| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> / <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |
| CKID10 | CKACRO10 | CKDATE10 | CKSTID10 |

**COGNITIVEVITALITY SUBSTUDY
PATTERN COMPARISON PRACTICE**

| | | | |
|----------------------|----------------------|-------------------------------|------------------------------------|
| <input type="text"/> | <input type="text"/> | <input type="checkbox"/> Same | <input type="checkbox"/> Different |
| <input type="text"/> | <input type="text"/> | <input type="checkbox"/> Same | <input type="checkbox"/> Different |
| <input type="text"/> | <input type="text"/> | <input type="checkbox"/> Same | <input type="checkbox"/> Different |



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| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | CKDATE11 <input type="text"/> / <input type="text"/> / <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| CKID11 | CKACRO11 | Month Day Year | CKSTID11 |

**COGNITIVEVITALITY SUBSTUDY
PATTERN COMPARISON TEST**

| | |
|---|---|
| 1.   CKPC01 1 Same 2 Different | 16.   CKPC16 1 Same 2 Different |
| 2.   CKPC02 1 Same 2 Different | 17.   CKPC17 1 Same 2 Different |
| 3.   CKPC03 1 Same 2 Different | 18.   CKPC18 1 Same 2 Different |
| 4.   CKPC04 1 Same 2 Different | 19.   CKPC19 1 Same 2 Different |
| 5.   CKPC05 1 Same 2 Different | 20.   CKPC20 1 Same 2 Different |
| 6.   CKPC06 1 Same 2 Different | 21.   CKPC21 1 Same 2 Different |
| 7.   CKPC07 1 Same 2 Different | 22.   CKPC22 1 Same 2 Different |
| 8.   CKPC08 1 Same 2 Different | 23.   CKPC23 1 Same 2 Different |
| 9.   CKPC09 1 Same 2 Different | 24.   CKPC24 1 Same 2 Different |
| 10.   CKPC10 1 Same 2 Different | 25.   CKPC25 1 Same 2 Different |
| 11.   CKPC11 1 Same 2 Different | 26.   CKPC26 1 Same 2 Different |
| 12.   CKPC12 1 Same 2 Different | 27.   CKPC27 1 Same 2 Different |
| 13.   CKPC13 1 Same 2 Different | 28.   CKPC28 1 Same 2 Different |
| 14.   CKPC14 1 Same 2 Different | 29.   CKPC29 1 Same 2 Different |
| 15.   CKPC15 1 Same 2 Different | 30.   CKPC30 1 Same 2 Different |



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| HABC Enrollment ID # H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKID12 | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Date Form Completed CKDATE12 <input type="text"/> / <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Month Day Year | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKSTID12 |
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CKACRO12

**COGNITIVEVITALITY SUBSTUDY
LETTER COMPARISON TEST**

- ◆ Give the participant a pen and place the Letter Comparison Practice worksheet on the desk or table in front of the participant.

Script: "In this test you will be asked to determine whether two strings of letters are the same or different. If the letters in the two strings are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box labeled "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair of letter strings. Try the following examples."

- ◆ Make sure the participant understands the instructions before continuing. Place the Letter Comparison Test worksheet face down in front of the participant, then say:

Script: "You will have 30 seconds to compare as many pairs of letter strings as possible. When I say go, turn the sheet over and start. Ready? Go."

- ◆ Start timing immediately after the participant turns the test worksheet over. After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Letter Comparison Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear to the data managers that these answers are not to be counted as completed. Go on to the next test.

CKLCRF
① Participant refused Letter Comparison Test

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CKSTID13

**COGNITIVEVITALITY SUBSTUDY
LETTER COMPARISON PRACTICE**

| | | | |
|-----------|-----------|-------------------------------|------------------------------------|
| YCX | YMX | <input type="checkbox"/> Same | <input type="checkbox"/> Different |
| HTRBDP | HTRBDP | <input type="checkbox"/> Same | <input type="checkbox"/> Different |
| LNDPRSKQB | LNDPRSJQB | <input type="checkbox"/> Same | <input type="checkbox"/> Different |

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CKID14

CKACRO14

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Day

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CKSTID14

COGNITIVEVITALITY SUBSTUDY LETTER COMPARISON TEST

| | | | | | | | |
|-----|-----------|-----------|----------------------------|------|----------------------------|-----------|--------|
| 1. | HCF | RCF | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC01 |
| 2. | QTPRJX | QTPNJX | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC02 |
| 3. | MZDYGVGKQ | MZDYGLGKQ | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC03 |
| 4. | FQTNMK | JQTNMK | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC04 |
| 5. | CLJ | CLJ | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC05 |
| 6. | JGDMNSVPW | JGZMNSVPW | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC06 |
| 7. | FPTVHKCBJ | FPTVHKCBJ | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC07 |
| 8. | XRPZBS | ZRPZBH | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC08 |
| 9. | ZSQ | ZSP | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC09 |
| 10. | MPZRXL | MPZRXL | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC10 |
| 11. | KJH | KRH | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC11 |
| 12. | SMNHVTFCB | SMNHVTFCB | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC12 |
| 13. | KJWTQF | KJWTQF | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC13 |
| 14. | CHDKQGLMB | CHDKQGLMB | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC14 |
| 15. | GHQ | GHQ | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC15 |
| 16. | GFVMRH | GFVMRH | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC16 |
| 17. | RSM | RSM | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC17 |
| 18. | BSRJTRMLG | BSFJTRMLG | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC18 |
| 19. | NBGFSM | NBGFSM | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC19 |
| 20. | RNV | FNV | <input type="checkbox"/> 1 | Same | <input type="checkbox"/> 2 | Different | CKLC20 |

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| HABC Enrollment ID # <input type="text" value="H"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKID15 | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Date Form Completed CKDATE15 <input type="text"/> / <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Month Day Year | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKSTID15 |
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CKACRO15

COGNITIVEVITALITY SUBSTUDY SIMPLE REACTION TIME TEST

Script: "The next set of tests measure reaction time and are done using a computer screen and keyboard."

Have the participant sit comfortably facing a computer screen and keyboard, then sit down next to and to the right of the participant. Make sure the computer is running in DOS mode and the directory is set to the **digtime** directory. **Type in "GO."**

For testing, briefly describe the reaction time tests to the participant.

Script: "For the first test, all you need to do is press the "/" key with your right index finger, like this **[demonstrate]**, whenever any images appear on the screen. Please respond as quickly as you can. The images will appear very quickly. Ignore the numbers and words on the screen, for now. Just, hit the "/" key as quickly as you can. The first test is for practice. Are you ready?"

Script: "Ready? Go,"

Then press <ENTER> to start the test. After one practice trial, repeat the Simple Reaction Time Test.

Script: "Now, let's do the test for real. Please respond as quickly as you can. Ready? Go,"

Press <ENTER> to start the test. When finished, thank the participant.

| | |
|---------|---|
| Test #1 | CKSRTT1C |
| | ① Test completed |
| | ① Test not completed, participant refused |
| | ② Test not completed, other reason |

| |
|---|
| Score: Test #1 |
| <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| CKSRTT1S |
| median time (msecs) |



| | | | |
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| HABC Enrollment ID # <input type="text" value="H"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKID16 | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKACRO16 | Date Form Completed CKDATE16 <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> Month Day Year | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKSTID16 |
|--|--|---|--|

COGNITIVEVITALITY SUBSTUDY DIGIT DIGIT TEST

Script: "For this test, a box will appear with two numbers, as shown here. [Show Card #16]. When the numbers in the box are the same, press the "/>

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/>

Script: "Please respond as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test trials. When finished, thank the participant.

Digit Digit - Practice

| | |
|-----------------------|--|
| Test #2 | CKDDT2C |
| <input type="radio"/> | Practice test completed |
| <input type="radio"/> | Practice test not completed, participant refused |
| <input type="radio"/> | Practice test not completed, other reason |

Digit Digit - Trial 1

| | |
|-----------------------|---|
| Test #3 | CKDDT3C |
| <input type="radio"/> | Test completed |
| <input type="radio"/> | Test not completed, participant refused |
| <input type="radio"/> | Test not completed, other reason |

| | | |
|----------------|---|-----------------|
| Score: Test #3 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> percent accuracy | CKDDT3PA |
| | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> median time (msecs) | CKDDT3MT |

Digit Digit - Trial 2

Repeat Digit Digit following instructions above.

| | |
|-----------------------|---|
| Test #4 | CKDDT4C |
| <input type="radio"/> | Test completed |
| <input type="radio"/> | Test not completed, participant refused |
| <input type="radio"/> | Test not completed, other reason |

| | | |
|----------------|---|-----------------|
| Score: Test #4 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> percent accuracy | CKDDT4PA |
| | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> median time (msecs) | CKDDT4MT |



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| HABC Enrollment ID # H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKID17 | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKACRO17 | Date Form Completed CKDATE17 <input type="text"/> / <input type="text"/> / <input type="text"/> <input type="text"/> Month Day Year | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> CKSTID17 |
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**COGNITIVEVITALITY SUBSTUDY
DIGIT SYMBOL TEST**

Script: "For this test, a box will appear with a number in the top and a symbol in the bottom, as shown here. [Show Card #17]. When the number and symbol in the box match the key displayed at the top of the screen, press the "/." If the number and symbol do not match the key, press the "Z." You will get one short practice then two longer test trials."

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/."

Script: "Please respond as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test trials. When finished, thank the participant.

Digit Symbol - Practice

| | |
|-----------------------|--|
| Test #5 | CKDST5C |
| <input type="radio"/> | Practice test completed |
| <input type="radio"/> | Practice test not completed, participant refused |
| <input type="radio"/> | Practice test not completed, other reason |

Digit Symbol - Trial 1

| | |
|-----------------------|---|
| Test #6 | CKDST6C |
| <input type="radio"/> | Test completed |
| <input type="radio"/> | Test not completed, participant refused |
| <input type="radio"/> | Test not completed, other reason |

| | | |
|----------------|---|--|
| Score: Test #6 | <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/> | CKDST6PA percent accuracy |
| | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | CKDST6MT median time (msecs) |

Digit Symbol - Trial 2

Repeat Digit Symbol following instructions above.

| | |
|-----------------------|---|
| Test #7 | CKDST7C |
| <input type="radio"/> | Test completed |
| <input type="radio"/> | Test not completed, participant refused |
| <input type="radio"/> | Test not completed, other reason |

| | | |
|----------------|---|--|
| Score: Test #7 | <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/> | CKDST7PA percent accuracy |
| | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | CKDST7MT median time (msecs) |





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| HABC Enrollment ID # H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Date Form Completed <input type="text"/> / <input type="text"/> / 200 <input type="text"/> <input type="text"/> | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> |
| ECID | ECACROS | Month Day Year ECDATE | ECSTFID |

COGNITIVE VITALITY SUBSTUDY PROCEDURE CHECKLIST

| Test | Page #'s | Please check if done | | | | Comments |
|---|----------|----------------------------------|--------------------------------------|-------------------------|------------------|-----------------|
| | | Yes: measurement fully completed | Yes: measurement partially completed | No: participant refused | No: other reason | |
| 1. Screener for Cognitive Vitality Substudy | 2 | ① | ③ | ① | ② | ECSCREEN |
| 2. Buschke Selective Reminding Test (SRT) | 3 | ① | ③ | ① | ② | ECSRT |
| a. Trial 1 | 4 | ① | ③ | ① | ② | ECSRT1 |
| b. Total Recall | 4 | ① | ③ | ① | ② | ECSRTTR |
| c. Trial 6 LTS | 4 | ① | ③ | ① | ② | ECSRT6 |
| d. 20-30 Minute Recall | 4 | ① | ③ | ① | ② | ECSRT20 |
| 3. Activity Assessment | 5 | ① | ③ | ① | ② | ECAA |
| 4. Cognitive Vitality Questionnaire | 6 | ① | ③ | ① | ② | ECQUEST |
| 5. Boxes Test | 12 | ① | ③ | ① | ② | ECBT |
| 6. Digit Copying Test | 14 | ① | ③ | ① | ② | ECDCT |
| 7. Pattern Comparison Test | 16 | ① | ③ | ① | ② | ECPCT |
| 8. Letter Comparison Test | 19 | ① | ③ | ① | ② | ECLCT |
| 9. Simple Reaction Time Test | 22 | ① | ③ | ① | ② | ECSRTT |
| 10. Digit Digit Test | 23 | ① | ③ | ① | ② | ECDDT |
| 11. Digit Symbol Test | 24 | ① | ③ | ① | ② | ECDST |

Page Link #

ECLINK

Draft



| | | | |
|-----------------------|---------------------|-------------------------------------|-----------------|
| HABC Enrollment ID # | Acrostic | Date Form Completed | Staff ID # |
| H [] [] [] [] [] | [] [] [] [] [] | [] [] / [] [] / [] [] [] [] | [] [] [] [] |
| EDID | EDACROS | Month Day EDDATE Year | EDSTFID |

SCREENER FOR COGNITIVE VITALITY SUBSTUDY

1 Do you have difficulty seeing large print?

Yes
 No
 Don't know
 Refused **EDLPRINT**

Participant is NOT eligible for Cognitive Vitality Substudy. Go to Question #3.

2 Do you have a health or physical problem that makes it impossible for you to grasp and use a pen?

Yes
 No
 Don't know
 Refused **EDGRASP**

Participant is NOT eligible for Cognitive Vitality Substudy. Go to Question #3.

3 Is the participant eligible for the Cognitive Vitality Substudy?

Yes
 No **EDELIG**

Not eligible. Do NOT administer Cognitive Vitality Substudy. STOP.

Administer Cognitive Vitality Substudy. Go to Question #4.

4 Did the participant refuse to participate in this Cognitive Vitality Substudy?

Yes
 No **EDREF**

Administer Cognitive Vitality Substudy.

Do NOT administer Cognitive Vitality Substudy.

COGNITIVE VITALITY SUBSTUDY
BUSCHKE SELECTIVE REMINDING TEST (SRT)**Purpose:**

To measure verbal learning and memory during a multiple-trial list-learning task.

Administration:

Have the participant sit comfortably at a desk or table.

Script: "I'm going to read you a list of 12 words. Please listen carefully, because when I stop, I want you to tell me as many of the words as you can remember. They don't have to be in any order. You will get 6 chances to learn all 12 words. Each time I will tell you the words that you missed, then I want you to repeat as many of the 12 words as you can. Many people remember only about half of the words."

Show Card #1 with the first word on the list in front of the participant. Say the word aloud. After 5 seconds, repeat this procedure with the second word (**show Card #2**). Repeat this procedure for all 12 words, showing one card every 5 seconds (**show Cards #3 through #12**). After the last word is shown, ask the participant to recall as many words as they can.

Script: "I want you to tell me as many of the words as you can."

Place an "✓" next to each word recalled under the column headed Trial 1. After 60 seconds, read the list of words at the rate of one word per 2 seconds skipping over the words that were recalled correctly on the preceding trial. Always present the words in order beginning with the top of the list and working to the bottom. Give the participant 60 seconds for each trial. Mark with an "✓" all words correctly recalled for each trial. If the participant is able to recall correctly all 12 words on three consecutive trials, discontinue, but score as if all trials had been given. That is, give the participant a score of 12 for each of the remaining trials, and a score of 12 for the long-term storage (LTS) component (see below). If the participant recalls words not on the list, inform the participant, by saying something like "*cat is not one of the words.*"

Immediately following the sixth trial, set the timer for 28 minutes, then administer the Activity Assessment on page 5.

After at least 20 minutes but no more than 30 minutes, ask the participant to recall all 12 words.

Script: "Remember the list of words I gave you earlier? I want you to tell me as many of the words as you can remember."

During the 20 to 30-minute delay, the other components of the Cognitive Vitality Substudy should be administered.

**COGNITIVE VITALITY SUBSTUDY
BUSCHKE SELECTIVE REMINDING TEST (SRT)**

| | Trial 1 | Trial 2 | Trial 3 | Trial 4 | Trial 5 | Trial 6 | 20-30 min |
|----------|---------|---------|---------|---------|---------|---------|-----------|
| bowl | | | | | | | |
| passion | | | | | | | |
| dawn | | | | | | | |
| judgment | | | | | | | |
| grant | | | | | | | |
| bee | | | | | | | |
| plane | | | | | | | |
| county | | | | | | | |
| choice | | | | | | | |
| seed | | | | | | | |
| wool | | | | | | | |
| meal | | | | | | | |

| | |
|---|--|
| a. Trial 1: Count the number of words recalled in Trial 1 (maximum=12). | <input type="text"/> <input type="text"/> EDSRTT1 words |
| b. Total Recall: Count the number of words recalled over the first 6 trials (maximum=72). | <input type="text"/> <input type="text"/> EDSRTREC words |
| c. Trial 6 LTS (long-term storage): Count the number of words recalled at least twice in a row that were also recalled in Trial 6 (the final learning trial). If the second time a word is recalled twice in a row is Trial 6, it still counts as an LTS (maximum=12). | <input type="text"/> <input type="text"/> EDSRTLTS words |
| d. Record time of <u>start</u> of 20-30 minute recall period (time when timer is set for 28 minutes). EDSRTM1 | <input type="text"/> <input type="text"/> : <input type="text"/> <input type="text"/> ^① am ^② pm |
| e. Record time of <u>end</u> of 20-30 minute recall period. EDSRTM2 | <input type="text"/> <input type="text"/> : <input type="text"/> <input type="text"/> ^① am ^② pm |
| f. 20-30 minute Recall: Count the number of words recalled after 20-30 minute delay (maximum=12). | <input type="text"/> <input type="text"/> words EDSRT20R |
| g. Was the complete Buschke Selective Reminding Test administered (Trials 1-6 and 20-30 minute recall)? EDSRTC | ^① Yes ^② No, participant refused ^③ No, other reason |

EDSRTAM1

EDSRTAM2



COGNITIVE VITALITY SUBSTUDY ACTIVITY ASSESSMENT

Script: "For each of the following activities, please tell me how often you did them in the past year: (REQUIRED: Show Card #13). Not at all (0), Once or twice only (1), Less than once a month (2), At least monthly (3), Less than once a week (4), At least every week (5), Several times a week (6), or Daily (7). You can just say the number next to your choice if you want."

(Examiner Note: If the activity is sporadic (e.g., several days in a row, a few times a year) and the participant cannot choose a response, choose at least monthly as the response.)

| Activity In the past 12 months, how often did you...? | Frequency | | | | | | | | | |
|---|------------|--------------------|------------------------|------------------|-----------------------|---------------------|----------------------|-------|------------|---------|
| | Not at all | Once or twice only | Less than once a month | At least monthly | Less than once a week | At least every week | Several times a week | Daily | Don't know | Refused |
| 1. Do a crossword or other word or jigsaw puzzle. EDAA01N | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 2. Read a newspaper or magazine article. EDAA03 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 3. Read a novel or non-fiction book, such as a biography. EDAA04N | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 4. Play board games, bingo, bridge, or other card games. EDAA06 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 5. Use a computer. EDAA07 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 6. Write a letter, article, poem, or story. EDAA11 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 7. Travel 100 miles or more from your home. EDAA12 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 8. Do handcrafts, sewing, needlework, carpentry, wood working, model building, art projects, sketching or drawing, photography, or painting. EDAA13N | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 9. Go out to a movie; attend a concert, the theater, or a sports event; or visit a museum, zoo, aquarium, or science center. EDAA16N | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 10. Take a class or adult education course. EDAA20 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 11. Attend a lecture, discussion, or public meeting. EDAA21 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 12. Participate in church, community, or social club activities (in addition to any mentioned above). EDAA22 | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |



1 Please tell me, in a typical week, how often do you get together with friends or neighbors?
(REQUIRED: Show Card #14)

- 4 At least once a day
- 3 4 to 6 times per week
- 2 2 to 3 times per week

EDSCFRND 1 1 time per week

- 0 Less than once per week
- 8 Don't know
- 7 Refused

2 In a typical week, how often do you get together with children or other relatives?
(REQUIRED: Show Card #14)

- 4 At least once a day
- 3 4 to 6 times per week
- 2 2 to 3 times per week

EDSCREL 1 1 time per week

- 0 Less than once per week
- 8 Don't know
- 7 Refused



4 Do you currently do any volunteer work?

① Yes ② No ③ Don't know ④ Refused **EDVWCURV**

Go to Question #5

a. On average, how many hours do you volunteer per week?

EDVWAHVW hours ① Don't know **EDVWADK**

b. How many months of the year do you do this?

EDVWMOV months ① Don't know **EDVWMDK**

c. Which of the following categories best describes the type of activity you do?
(Examiner Note: REQUIRED - Show card #15.)

- ① Mainly sitting
- ② Sitting, some standing and/or walking
- EDVWVACT** ③ Mostly standing and/or walking
- ④ Mostly walking and lifting and/or carrying; heavy manual work
- ⑤ Don't know

5 Do you currently provide any regular care or assistance to a child or a disabled or sick adult?

① Yes ② No ③ Don't know ④ Refused **EDVWCURA**

Go to Question #6

About how many hours per week do you provide care to another person?
If you are unsure, please make your best guess.

EDVWAHAW hours ① Don't know **EDVWDK**



6 About how many hours per week do you spend watching television?
(Examiner Note: **REQUIRED - Show card #16.**)

- 0 Zero
- 1 More than 0 but less than 7 hours/week
- 2 At least 7, but less than 14 hours/week
- 3 At least 14, but less than 21 hours/week
- 4 At least 21, but less than 28 hours/week
- 5 At least 28, but less than 35 hours/week
- 6 35 or more hours/week
- 8 Don't know
- 7 Refused

EDVWTV

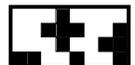
Do you usually use a remote control for your TV?

- 1 Yes
- 0 No
- 8 Don't know

EDVWTVRM

7 About how many hours per week do you spend reading, including books, newspapers, and magazines?

EDVWREAD hours 8 Don't know 7 Refused EDVWRDRF



8 During the past week, have you felt nervous or shaky inside?

- 1** Yes **0** No **8** Don't know **7** Refused **EDSSNRVS**

How nervous or shaky have you felt? Would you say a little, quite a bit, or extremely nervous and shaky inside?

- 1** A little
2 Quite a bit
3 Extremely
8 Don't know

EDSSNDEG

9 During the past week, have you felt tense or keyed up?

- 1** Yes **0** No **8** Don't know **7** Refused **EDSSTENS**

How tense or keyed up have you felt? Would you say a little, quite a bit, or extremely tense or keyed up?

- 1** A little
2 Quite a bit
3 Extremely
8 Don't know

EDSSTDEG

10 Please tell me whether you agree or disagree with this statement:
I can do just about anything I really set my mind to. Would you say you agree or disagree?

EDSSCAN ① Agree ② Disagree ⑧ Don't know ⑦ Refused

Would you say you agree strongly or agree somewhat?
① Agree strongly
② Agree somewhat
⑧ Don't know

EDSSCANA

Would you say you disagree strongly or disagree somewhat?
① Disagree strongly
② Disagree somewhat
⑧ Don't know

EDSSCAND

11 Do you agree or disagree with this statement:
I often feel helpless in dealing with the problems of life. Would you say you agree or disagree?

EDSSOFH ① Agree ② Disagree ⑧ Don't know ⑦ Refused

Would you say you agree strongly or agree somewhat?
① Agree strongly
② Agree somewhat
⑧ Don't know

EDSSOFHA

Would you say you disagree strongly or disagree somewhat?
① Disagree strongly
② Disagree somewhat
⑧ Don't know

EDSSOFHD



COGNITIVE VITALITY SUBSTUDY
BOXES TEST

- ◆ Give the participant a pen and place the Boxes Test worksheet on the desk or table in front of the participant. Using the first three boxes at the top of the Boxes Test worksheet, demonstrate the task to the participant. Have the participant practice the test with the remaining seven boxes.
- ◆ **Script:** "Please complete as many boxes as you can, like this."
- ◆ Demonstrate, working rapidly. Use the first three boxes.
- ◆ **Script:** "Now, you try the rest of the boxes above the line."
- ◆ After the participant completes the practice boxes, show the participant where to begin the test.
- ◆ **Script:** "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."
- ◆ Start timing.
- ◆ After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Boxes Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- ◆ For scoring, count the number of successfully completed boxes below the line (on page 13) and record this number below.
- ◆ If the participant refused the Boxes Test, please mark the bubble below.

| | |
|--|---|
| EDBOX | EDBOXREF |
| Score: <input type="text"/> <input type="text"/> <input type="text"/> number completed | <input type="checkbox"/> Participant refused Boxes Test |

- ◆ Go to the next test.



COGNITIVE VITALITY SUBSTUDY
DIGIT COPYING TEST

- ◆ Give the participant a pen and place the Digit Copying Test worksheet on the desk or table in front of the participant. Using the boxes at the top of the Digit Copying Test worksheet, demonstrate the task to the participant.
- ◆ **Script:** "Please copy the number that appears in the top box in the bottom box, like this."
- ◆ Demonstrate, working rapidly. Use the first three boxes.
- ◆ **Script:** "Now, you try the rest of the boxes above the line."
- ◆ If the participant appears to be trying to copy the numbers exactly, or if the participant asks if they need to copy the numbers exactly, tell the participant: "Copy the numbers as you would normally write them."
- ◆ After the participant completes the practice boxes, show the participant where to begin the test.
- ◆ **Script:** "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."
- ◆ Start timing. After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Digit Copying Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- ◆ For scoring, count the number of digits correctly copied onto the Digit Copying Test worksheet below the line (on page 15) and record this number below.
- ◆ If the participant refused the Digit Copy Test, please mark the bubble below.

| | |
|--|---|
| EDDIGIT | EDDIGREF |
| Score: <input type="text"/> <input type="text"/> <input type="text"/> number completed | <input type="checkbox"/> Participant refused Digit Copying Test |

- ◆ Go to the next test.

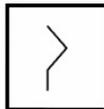
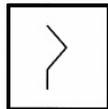
COGNITIVE VITALITY SUBSTUDY
PATTERN COMPARISON TEST

- ◆ Give the participant a pen and place the Pattern Comparison Practice worksheet on the desk or table in front of the participant.
- ◆ **Script:** "In this test you will be asked to determine whether two patterns of lines are the same or different. If the two patterns are the SAME, put an "X" in the box labeled "Same."
If they are DIFFERENT, put an "X" in the box marked "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair of line patterns.
Try the following examples."
- ◆ Make sure the participant understands the instructions before continuing.
Place the Pattern Comparison Test Sheet face down in front of the participant, then say:
- ◆ **Script:** "You will have 30 seconds to compare as many line patterns as possible.
When I say go, turn the sheet over and start. Ready? Go."
- ◆ Start timing immediately after the participant turns the test worksheet over.
After 30 seconds, say: "**STOP. Thank you.**"
- ◆ Look over the Pattern Comparison Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear to the data managers that these answers are not to be counted as completed. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses.
Go to the next test.
- ◆ If the participant refused the Pattern Comparison Test, please mark the bubble below.

EDPCRF

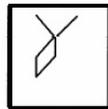
 Participant refused Pattern Comparison Test

COGNITIVE VITALITY SUBSTUDY
PATTERN COMPARISON PRACTICE



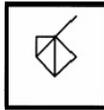
Same

Different



Same

Different



Same

Different



**COGNITIVE VITALITY SUBSTUDY
PATTERN COMPARISON TEST**

| | | | | | |
|-----|--|-------------------------------------|-----|--|-------------------------------------|
| 1. | | EDPC01 1 Same 2 Different | 16. | | EDPC16 1 Same 2 Different |
| 2. | | EDPC02 1 Same 2 Different | 17. | | EDPC17 1 Same 2 Different |
| 3. | | EDPC03 1 Same 2 Different | 18. | | EDPC18 1 Same 2 Different |
| 4. | | EDPC04 1 Same 2 Different | 19. | | EDPC19 1 Same 2 Different |
| 5. | | EDPC05 1 Same 2 Different | 20. | | EDPC20 1 Same 2 Different |
| 6. | | EDPC06 1 Same 2 Different | 21. | | EDPC21 1 Same 2 Different |
| 7. | | EDPC07 1 Same 2 Different | 22. | | EDPC22 1 Same 2 Different |
| 8. | | EDPC08 1 Same 2 Different | 23. | | EDPC23 1 Same 2 Different |
| 9. | | EDPC09 1 Same 2 Different | 24. | | EDPC24 1 Same 2 Different |
| 10. | | EDPC10 1 Same 2 Different | 25. | | EDPC25 1 Same 2 Different |
| 11. | | EDPC11 1 Same 2 Different | 26. | | EDPC26 1 Same 2 Different |
| 12. | | EDPC12 1 Same 2 Different | 27. | | EDPC27 1 Same 2 Different |
| 13. | | EDPC13 1 Same 2 Different | 28. | | EDPC28 1 Same 2 Different |
| 14. | | EDPC14 1 Same 2 Different | 29. | | EDPC29 1 Same 2 Different |
| 15. | | EDPC15 1 Same 2 Different | 30. | | EDPC30 1 Same 2 Different |



COGNITIVE VITALITY SUBSTUDY LETTER COMPARISON TEST

- ◆ Give the participant a pen and place the Letter Comparison Practice worksheet on the desk or table in front of the participant.

Script: "In this test you will be asked to determine whether two sets of letters are the same or different. If the letters are the **SAME**, put an "X" in the box labeled "Same." If they are **DIFFERENT**, put an "X" in the box labeled "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair. Try the following examples."

- ◆ Make sure the participant understands the instructions before continuing.
Place the Letter Comparison Test worksheet face down in front of the participant, then say:

Script: "You will have 30 seconds to compare as many pairs as possible.
When I say go, turn the sheet over and start. Ready? Go."

- ◆ Start timing immediately after the participant turns the test worksheet over.
After 30 seconds, say: "**STOP. Thank you.**"
- ◆ Look over the Letter Comparison Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear to the data managers that these answers are not to be counted as completed. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses. Go to the next test.
- ◆ If the participant refused the Letter Comparison Test, please mark the bubble below.

EDLCRF

① Participant refused Letter Comparison Test



| | | |
|-----------|-----------|--|
| YCX | YMX | <input type="checkbox"/> Same <input type="checkbox"/> Different |
| HTRBDP | HTRBDP | <input type="checkbox"/> Same <input type="checkbox"/> Different |
| LNDPRSKQB | LNDPRSJQB | <input type="checkbox"/> Same <input type="checkbox"/> Different |

COGNITIVE VITALITY SUBSTUDY LETTER COMPARISON TEST

| | | | | | |
|-----|-----------|-----------|-------------------------------|------------------------------------|------------------------|
| 1. | HCF | RCF | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC01 |
| 2. | QTPRJX | QTPNJX | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC02 |
| 3. | MZDYGVGKQ | MZDYGLGKQ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC03 |
| 4. | FQTNMK | JQTNMK | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC04 |
| 5. | CLJ | CLJ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC05 |
| 6. | JGDMNSVPW | JGZMNSVPW | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC06 |
| 7. | FPTVHKCBJ | FPTVHKCBJ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC07 |
| 8. | XRPZBS | ZRPZBH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC08 |
| 9. | ZSQ | ZSP | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC09 |
| 10. | MPZRXL | MPZRXL | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC10 |
| 11. | KJH | KRH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC11 |
| 12. | SMNHVTFCB | SMNHVTFCB | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC12 |
| 13. | KJWTOF | KJWTOF | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC13 |
| 14. | CHDKOGLMB | CHDKOGLMB | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC14 |
| 15. | GHQ | GHQ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC15 |
| 16. | GFVMRH | GFVMRH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC16 |
| 17. | RSM | RSM | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC17 |
| 18. | BSRJTRMLG | BSFJTRMLG | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC18 |
| 19. | NBGFSM | NBGFSM | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC19 |
| 20. | RNV | FNV | <input type="checkbox"/> Same | <input type="checkbox"/> Different | EDLC20 |



COGNITIVE VITALITY SUBSTUDY SIMPLE REACTION TIME TEST

Script: "The next set of tests measure reaction time and are done using a computer screen and keyboard."

Have the participant sit comfortably facing a computer screen and keyboard, then sit down next to and to the right of the participant. Make sure the computer is running in DOS mode and the directory is set to the digtime directory. Type in "GO."

Script: "For the first test, all you need to do is press the "/" key with your right index finger, like this [demonstrate], whenever you see numbers in this box. Please hit the key as fast as you can. The first test is for practice. Are you ready?"

If a participant has difficulty understanding the directions, the examiner should demonstrate the procedure in the following way: The examiner points to the number box on the screen that changes with the "/" keystroke and makes the numbers change.

Script: "In this task you hit the "/" key as fast as you can whenever you see numbers in this box, like this."

Hit "/" key several times.

Script: "Now you try it."

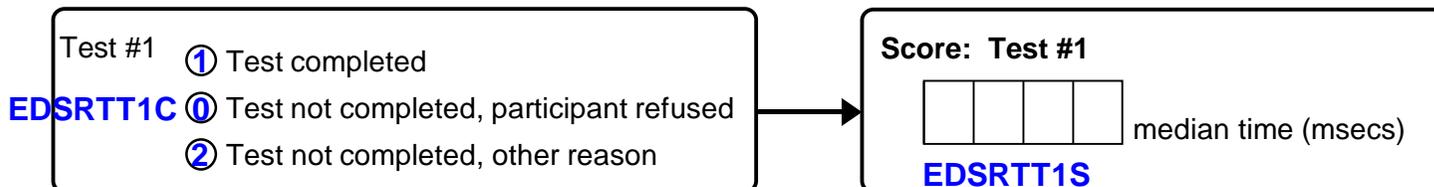
Make sure the participants understand and if needed demonstrate again. Occasionally a participant may press the slash key too hard and cause the slash to automatically be repeated. If this happens, instruct the participant to hit the key correctly (by demonstrating a second time), and begin the reaction time tests again.

Script: "Ready? Go."

Then press <ENTER> to start the test. After one practice trial, repeat the Simple Reaction Time Test.

Script: "Now, let's do the test for real. Please hit the key as fast as you can. Ready? Go."

Press <ENTER> to start the test. When finished, thank the participant.



**COGNITIVE VITALITY SUBSTUDY
DIGIT SYMBOL TEST**

Script: "For this test, a box will appear with a number in the top and a symbol in the bottom, as shown here [Show Card #18]. When the number and symbol in the box match at the top of the screen, press the "." If the number and symbol do not match, press the "Z." You will get one short practice then two longer tests."

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: "For example, on this card the 2 and upside down V symbol do not match the 2 and upside down T here [Point], therefore you would hit the "Z" key for different. Now you try a few examples."

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "."

Script: "Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

Digit Symbol - Practice

- Test #5
- ① Practice test completed
 - EDDST5C** ② Practice test not completed, participant refused
 - ③ Practice test not completed, other reason

Digit Symbol - Trial 1

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|--|---|---|--|--|-------------------------------------|---|--|--|--|--|--|--|
| <p>Test #6</p> <ul style="list-style-type: none"> ① Test completed EDDST6C ② Test not completed, participant refused ③ Test not completed, other reason | → | <p>Score: Test #6</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> </td> <td style="text-align: center; vertical-align: middle;">·</td> <td style="text-align: center;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> </td> <td style="padding-left: 10px; vertical-align: middle;">EDDST6PA percent accuracy</td> </tr> <tr> <td style="text-align: center;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> </td> <td></td> <td></td> <td style="padding-left: 10px; vertical-align: middle;">EDDST6MT median time (msecs)</td> </tr> </table> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> | | | | · | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> | | | EDDST6PA percent accuracy | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> | | | | | | EDDST6MT median time (msecs) |
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Digit Symbol - Trial 2

Repeat Digit Symbol following instructions above.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|--|---|---|--|--|-------------------------------------|---|--|--|--|--|--|--|
| <p>Test #7</p> <ul style="list-style-type: none"> ① Test completed EDDST7C ② Test not completed, participant refused ③ Test not completed, other reason | → | <p>Score: Test #7</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> </td> <td style="text-align: center; vertical-align: middle;">·</td> <td style="text-align: center;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> </td> <td style="padding-left: 10px; vertical-align: middle;">EDDST7PA percent accuracy</td> </tr> <tr> <td style="text-align: center;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> </td> <td></td> <td></td> <td style="padding-left: 10px; vertical-align: middle;">EDDST7MT median time (msecs)</td> </tr> </table> | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> | | | | · | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> | | | EDDST7PA percent accuracy | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> | | | | | | EDDST7MT median time (msecs) |
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| <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> | | | | | | EDDST7MT median time (msecs) | | | | | | | | | | | | |
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|---|---|--|--|--|
| HABC Enrollment ID # H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Date Form Completed Month / Day / Year <input type="text"/> / <input type="text"/> / 200 <input type="text"/> <input type="text"/> | | Staff ID # <input type="text"/> <input type="text"/> <input type="text"/> |
| GBID | GBACROS | GBDATE | | GBSTFID |

YEAR 7 COGNITIVE VITALITY SUBSTUDY PROCEDURE CHECKLIST

| Test | Page #'s | Please check if done | | | | Comments |
|---|----------|----------------------------------|--------------------------------------|-------------------------|------------------|-----------------|
| | | Yes: measurement fully completed | Yes: measurement partially completed | No: participant refused | No: other reason | |
| 1. Screener for Cognitive Vitality Substudy | 2 | ① | ③ | ① | ② | GBSCREEN |
| 2. Teng Mini-Mental State Exam | 3 | ① | ③ | ① | ② | GBTMM |
| 3. Boxes Test | 9 | ① | ③ | ① | ② | GBBT |
| 4. Digit Copying Test | 11 | ① | ③ | ① | ② | GBDCT |
| 5. Buschke Selective Reminding Test (SRT) | 13 | ① | ③ | ① | ② | GBSRT |
| a. Trial 1 | 14 | ① | ③ | ① | ② | GBSRT1 |
| b. Total Recall | 14 | ① | ③ | ① | ② | GBSRTTR |
| c. Trial 6 LTS | 14 | ① | ③ | ① | ② | GBSRT6 |
| d. 20-30 Minute Recall | 14 | ① | ③ | ① | ② | GBSRT20 |
| 6. Activity Assessment | 15 | ① | ③ | ① | ② | GBAA |
| 7. Cognitive Vitality Questionnaire | 16 | ① | ③ | ① | ② | GBQUEST |
| 8. Pattern Comparison Test | 21 | ① | ③ | ① | ② | GBPCT |
| 9. Letter Comparison Test | 24 | ① | ③ | ① | ② | GBLCT |
| 10. Simple Reaction Time Test | 27 | ① | ③ | ① | ② | GBSRTT |
| 11. Digit Digit Test | 28 | ① | ③ | ① | ② | GBDDT |
| 12. Digit Symbol Test | 29 | ① | ③ | ① | ② | GBDST |
| 13. CES-D | 30 | ① | ③ | ① | ② | GBCESD |
| 14. Digit Symbol Substitution Test | 31 | ① | ③ | ① | ② | GBDSST |

GBREASON and **GBCOMM** were added to Checklist after the start of Year 7. The data system prompts clinics to enter data for these variables when all Checklist exam variables have a value of "2" ("No: other reason"). Clinics then enter the reason why the participant did not do the substudy exams. Clinics complete **GBREASON** by choosing one answer from a drop-down list that most closely describes the reason. If the clinic feels an additional explanation is needed, they may enter it in the text field **GBCOMM**.



| | | | |
|---|---|--|---|
| HABC Enrollment ID # | Acrostic | Date Form Completed | Staff ID # |
| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> / <input type="text"/> / 2 0 0 <input type="text"/> | <input type="text"/> <input type="text"/> |
| GCLD | GCACROS | Month / Day / Year GCDATE | GCSTFID |

YEAR 7 SCREENER FOR COGNITIVE VITALITY SUBSTUDY

1 Do you have difficulty seeing large print?

GCLPRINT Yes No Don't know Refused

2 Do you have a health or physical problem that makes it impossible for you to grasp and use a pen?

CGGRASP Yes No Don't know Refused



| | | | |
|---|---|--|---|
| HABC Enrollment ID # H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Acrostic <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Date Form Completed <input type="text"/> / <input type="text"/> / 200 | Staff ID # <input type="text"/> <input type="text"/> |
| GCID2 | GCACROS2 | Month Day Year GCDATE2 | GCSTFID2 |

**YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM**

Are you comfortable? I would like to ask you a few questions that require concentration and memory. Some are a little bit more difficult than others. Some questions will be asked more than once.

(Examiner Note: Record responses. If the participant does not answer, mark the "No response" option.)

1 When were you born? **GCBORNRF**

a. / / **1** No response

Month Day Year

GCBORNM GCBORND GCBORNY

Where were you born? (Place of Birth?)

| | | | |
|------------------|---------------|-------------------|-------------------------|
| | Answer given | Can't do/ Refused | Not attempted/ disabled |
| d. City/town | 1 | 7 | 3 |
| | GCCITY | | |
| e. State/Country | 1 | 7 | 3 |
| | GCSTE | | |

**Examiner Note:
Ask again in Question #18.**

3 a. I would like you to count from 1 to 5. **GCCNT**

- 1** Able to count forward **2** Unable to count forward
Say 1-2-3-4-5

b. Now I would like to you count backwards from 5 to 1. Record the responses in the order given:
(Examiner Note: Enter "99999" if no response) **GCCNTBK**

4 a. Spell "world." **GCSPL**

- 1** Able to spell **2** Unable to spell
"It's spelled W-O-R-L-D."

b. Now spell "world" backwards
(Examiner Note: Record letter in order given. Enter "xxxxx" if no response.)

GCSPWLD

2 I am going to say three words for you to remember. Repeat them after I have said all three words:
Shirt, Blue, Honesty

(Examiner Note: Do not repeat the words for the participant until after the first trial. The participant may give the words in any order. If there are errors on the first trial, repeat the items up to six times until they are learned. Record responses to first attempt below.)

| | Correct | Error/ Refused | Not attempted/ disabled | |
|---|----------|----------------|-------------------------|----------------------------|
| a. Shirt | 1 | 7 | 3 | GCSHRT |
| b. Blue | 1 | 7 | 3 | GCBLU |
| c. Honesty | 1 | 7 | 3 | GCHON |
| d. Numbers of presentations necessary for the participant to repeat the sequence: | | | <input type="text"/> | GCNUM presentations |

Page Link #



YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

5 What three words did I ask you to remember earlier?

(Examiner Note: The words may be repeated in any order. If the participant cannot give the correct answer after a category cue, provide the three choices listed. If the participant still cannot give the correct answer from the three choices, score "Unable to recall/refused" and provide the correct answer.)

a. Shirt

- GC SHRM
- 1 Spontaneous recall
 - 2 Correct word/incorrect form
 - 3 After "Something to wear"
 - 4 After "Was it shirt, shoes, or socks?"
 - 7 Unable to recall/refused (provide the correct answer)
 - 6 Not attempted/disabled

b. Blue

- GC BLRM
- 1 Spontaneous recall
 - 2 Correct word/incorrect form
 - 3 After "A color"
 - 4 After "Was it blue, black, or brown?"
 - 7 Unable to recall/refused (provide the correct answer)
 - 6 Not attempted/disabled

c. Honesty

- GC HNRM
- 1 Spontaneous recall
 - 2 Correct word/incorrect form
 - 3 After "A good personal quality"
 - 4 After "Was it honesty, charity, or modesty?"
 - 7 Unable to recall/refused (provide the correct answer)
 - 6 Not attempted/disabled

6 a. What is today's date?

(Examiner Note: If the participant does not answer, mark the "No response" option.)

GCTDAYM / GCTDAYD GCTDAYY 1 No response
Month Day Year GCTDAYRF

b. What is the day of the week?

(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)

- 1 Correct GCDAYWK
7 Error/refused Day of the week
3 Not attempted/disabled

c. What season of the year is it?

(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)

- 1 Correct GCSEAS
7 Error/refused Season
3 Not attempted/disabled

7 a. What state are we in?

(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)

- 1 Correct GCSTAT
7 Error/refused State
3 Not attempted/disabled

b. What county are we in?

(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)

- 1 Correct GCCNTY
7 Error/refused County
3 Not attempted/disabled

c. What (city/town) are we in?

(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)

- 1 Correct GCCITN
7 Error/refused City/town
3 Not attempted/disabled

d. Are we in a clinic, store, or home?

(Examiner Note: If correct answer is not among the three alternatives [e.g., hospital or nursing home], substitute it for the middle alternative [store]. If the participant states that none is correct, ask them to make the best choice of the three options.)

- 1 Correct GCWHRE
7 Error/refused
3 Not attempted/disabled

Page Link #

Draft



**YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM**

8 (Examiner Note: Point to the object or a part of your own body and ask the participant to name it. Score "Error/Refused" if the participant cannot name it within 2 seconds or gives an incorrect name. Do not wait for the participant to mentally search for the name.)

| | Correct | Error/ Refused | Not attempted/ disabled |
|--|---------|-------------------|-------------------------------|
| a. Pencil: What is this? | ① | ⑦ | ③ |
| | | GCPENC | |
| b. Watch: What is this? | ① | ⑦ | ③ |
| | | GCWTCH | |
| c. Forehead: What do you call this part of the face? | ① | ⑦ | ③ |
| | | GCFRHD | |
| d. Chin: And this part? | ① | ⑦ | ③ |
| | | GCCHIN | |
| e. Shoulder: And this part of the body? | ① | ⑦ | ③ |
| | | GCSHLD | |
| f. Elbow: And this part? | ① | ⑦ | ③ |
| | | GCELP | |
| g. Knuckle: And this part? | ① | ⑦ | ③ |
| | | GCKNK | |

9 What animals have four legs?
Tell me as many as you can.

(Examiner Note: Discontinue after 30 seconds. Record the total number of correct responses. If the participant gives no response in 10 seconds and there are still at least 10 seconds remaining, gently remind them [once only].)

"What (other) animals have four legs?"

The first time an incorrect answer is provided, say,

"I want four-legged animals."

Do not correct for subsequent errors.

Score (total correct responses):

GCE2SCR

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

(Examiner Note: Write any additional correct answers on a separate sheet of paper.)

10 (Examiner Note: If the initial response is scored "Lesser correct answer" or "Error," coach the participant by saying: "An arm and a leg are both limbs or extremities" to reinforce the correct answer. Coach only for Question #10a. No other prompting or coaching is allowed.)

a. In what way are an arm and a leg alike?

- ① Limbs, extremities, appendages
- ② Lesser correct answer (e.g., body parts, both bend, have joints)
- ⑦ Error/refused (e.g., states differences, gives unrelated answer)
- ③ Not attempted/disabled

b. In what way are laughing and crying alike?

- ① Expressions of feelings, emotions
- ② Lesser correct answer (e.g., sounds, expressions, other similar responses)
- ⑦ Error/refused (e.g., states differences, gives unrelated answer)
- ③ Not attempted/disabled

c. In what way are eating and sleeping alike?

- ① Necessary bodily functions, essential for life
- ② Lesser correct answer (e.g., bodily functions, relaxing, good for you or other similar responses)
- ⑦ Error/refused (e.g. states differences, gives unrelated answer)
- ③ Not attempted/disabled

11 Repeat what I say: "I would like to go out."
(Examiner Note: Pronounce the individual words distinctly but with normal tempo of a spoken sentence.)

- ① Correct
- ② 1 or 2 words missed
- ⑦ 3 or more words missed/refused
- ③ Not attempted/disabled

Page Link #

Draft



YEAR 7 COGNITIVE VITALITY SUBSTUDY
 TENG MINI-MENTAL STATE EXAM

12 Now repeat: "No ifs, ands or buts."

(Examiner Note: Pronounce the individual words distinctly but with normal tempo of a spoken sentence. Give no credit if the participant misses the "s.")

| | Correct | Error/Refused | Not attempted/disabled |
|------------|---------|---------------|------------------------|
| a. no ifs | ① | ⑦ GCIF | ③ |
| b. ands | ① | ⑦ GCAND | ③ |
| c. or buts | ① | ⑦ GCBUT | ③ |

14 Please write the following sentence:
 I would like to go out.

(Examiner Note: Hand participant a piece of blank paper and a #2 pencil with eraser. If necessary, repeat the sentence word by word as the participant writes. Allow a maximum of 1 minute after the first reading of the sentence for scoring the task. Either printing or cursive writing is allowed. Score "Correct" for each correct word, but no credit for "I". For each word, score "Error/Refused" if there are spelling errors or incorrect mixed capitalizations [all letters printed in uppercase are permissible]. Self-corrected errors are acceptable.)

| | Correct | Error/Refused | Not attempted/disabled |
|----------|---------|---------------|------------------------|
| a. would | ① | ⑦ GCWLD | ③ |
| b. like | ① | ⑦ GCLKE | ③ |
| c. to | ① | ⑦ GCTO | ③ |
| d. go | ① | ⑦ GCGO | ③ |
| e. out | ① | ⑦ GCOUT | ③ |

(Examiner Note: Note which hand the participant uses to write. If this task is not done, ask participant if they are right or left handed. [Use in Question #16])

① Right

GCHAND ② Left

⑧ Unknown

13 *Examiner Note: Hold up Card #1 and say,*

"Please do this."

If the participant does not close their eyes within 5 seconds, prompt by pointing to the sentence and saying

"Read and do what this says."

If the participant has already read the sentence aloud spontaneously, simply say,

"Do what this says."

Allow 5 seconds for the response. Assign the appropriate score (see below). As soon as the participant closes their eyes, say

"Open."

- ① Closes eyes without prompting
- ② Closes eyes after prompting
- ③ Reads aloud, but does not close eyes
- ⑦ Does not read aloud or close eyes/refused
- ⑤ Not attempted/disabled

GCCRD1



YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

15 Here is a drawing. Please copy the drawing onto this piece of paper.
(Examiner Note: Hand participant Card #2. Allow 1 minute for copying. For right-handed participants, present the sample on the left side; for left-handed participants, present the sample on the right side. Allow a maximum of 1 minute for response. Do not penalize for self-corrected errors, tremors, minor gaps, or overshoots.)

a. Pentagon 1

- GCSENT1**
- ① 5 approximately equal sized
 - ② 5 sides, but longest:shortest side is >2:1
 - ③ nonpentagon enclosed figure
 - ④ 2 or more lines, but it is not an enclosed figure
 - ⑦ less than 2 lines/refused
 - ⑥ not attempted/disabled

b. Pentagon 2

- GCSENT2**
- ① 5 approximately equal sized
 - ② 5 sides, but longest:shortest side is >2:1
 - ③ nonpentagon enclosed figure
 - ④ 2 or more lines, but it is not an enclosed figure
 - ⑦ less than 2 lines/refused
 - ⑥ not attempted/disabled

c. Intersection

- GCINT**
- ① 4-cornered enclosure
 - ② not a 4-cornered enclosure
 - ⑦ no enclosure/refused
 - ④ not attempted/disabled

16 *(Examiner Note: Refer to Question #14 to check whether the participant is right- or left-handed. Ask them to take the paper in their non-dominant hand.)*

"Take this paper with your left (right for left handed person) hand, fold it in half using both hands, and hand it back to me."

(Examiner Note: After saying the whole command, hold the paper within reach of the participant. Do not repeat any part of the command. Do not move the paper toward the participant. The participant may hand back the paper with either hand.)

| | Correct | Error/ Refused | Not attempted/ disabled |
|--------------------------------|---------|--------------------|-------------------------------|
| a. Takes paper in correct hand | ① | ⑦ GCPCOR | ③ |
| b. Folds paper in half | ① | ⑦ GCPFLD | ③ |
| c. Hands paper back | ① | ⑦ GCPHND | ③ |



YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

17 What three words did I ask you to remember earlier?
(Examiner Note: Administer this item even when the participant scored one or more "unable to recall/refused" on Question #5. The words may be repeated in any order. For each word not readily given, provide the category followed by multiple choices when necessary. Do not wait more than 3 seconds for spontaneous recall and do not wait more than 2 seconds after category cueing before providing the next level of help.)

a. Shirt

- ① Spontaneous recall
- ② Correct word/incorrect form
- GCSH2** ③ After "Something to wear"
- ④ After "Was it shirt, shoes, or socks?"
- ⑦ Unable to recall/refused (provide the correct answer)
- ⑥ Not attempted/disabled

b. Blue

- ① Spontaneous recall
- ② Correct word/incorrect form
- GCBLU2** ③ After "A color"
- ④ After "Was it blue, black, or brown?"
- ⑦ Unable to recall/refused (provide the correct answer)
- ⑥ Not attempted/disabled

c. Honesty

- ① Spontaneous recall
- ② Correct word/incorrect form
- GCHON2** ③ After "A good personal quality"
- ④ After "Was it honesty, charity, or modesty?"
- ⑦ Unable to recall/refused (provide the correct answer)
- ⑥ Not attempted/disabled

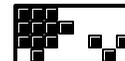
18 Would you please tell me again where you were born?

(Examiner Note: Ask this question only when a response was given in Question #1d and #1e. Score the response by checking against the response in Question #1d and #1e.)

| Place of Birth? | Matches | Does not match/ Refused | Not attempted/ disabled |
|---------------------------|---------|----------------------------|----------------------------|
| a. _____ City/town | ① | ⑦ GCCITY2 | ③ |
| b. _____ State/Country | ① | ⑦ GCSTE2 | ③ |

19 *(Examiner Note: If physical/functional disabilities or other problems exist which cause the participant difficulty in completing any of the tasks, record the nature of the problem listed below. Mark all that apply.)*

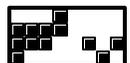
- ① Vision **GCVIS**
- ① Hearing **GCHEAR**
- GCWRITE** ① Writing problems due to injury or illness
- ① Illiteracy or lack of education **GCILLIT**
- ① Language **GCLANG**
- GCOTH** ① Other *(Please record the specific problem in the space provided.)*



- ◆ Determine if participant wears glasses for reading.
- ◆ Script: "Do you usually wear glasses to read?" **GCGLS** ① Yes → Ask the participant to put on their glasses.
② No
- ◆ Give the participant a pen and place the Boxes Test worksheet on the desk or table in front of the participant. Using the first three boxes at the top of the Boxes Test worksheet, demonstrate the task to the participant. Have the participant practice the test with the remaining seven boxes.
- ◆ Script: "Please complete as many boxes as you can, like this."
- ◆ Demonstrate, working rapidly. Use the first three boxes.
- ◆ Script: "Now, you try the rest of the boxes above the line."
- ◆ After the participant completes the practice boxes, show the participant where to begin the test.
- ◆ Script: "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."
- ◆ Start timing.
- ◆ After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Boxes Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- ◆ For scoring, count the number of successfully completed boxes below the line (on page 10) and record this number below.
- ◆ If the participant refused the Boxes Test, please mark the bubble below.

| | |
|--|--|
| <p>GCBOX</p> <p>Score: <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> number completed</p> | <p>GCBOXREF</p> <p>① Participant refused Boxes Test</p> |
|--|--|

- ◆ Go to the next test.





- ◆ Give the participant a pen and place the Digit Copying Test worksheet on the desk or table in front of the participant. Using the boxes at the top of the Digit Copying Test worksheet, demonstrate the task to the participant.
- ◆ **Script:** "Please copy the number that appears in the top box in the bottom box, like this."
- ◆ Demonstrate, working rapidly. Use the first three boxes.
- ◆ **Script:** "Now, you try the rest of the boxes above the line."
- ◆ If the participant appears to be trying to copy the numbers exactly, or if the participant asks if they need to copy the numbers exactly, tell the participant: "Copy the numbers as you would normally write them."
- ◆ After the participant completes the practice boxes, show the participant where to begin the test.
- ◆ **Script:** "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."
- ◆ Start timing. After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Digit Copying Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- ◆ For scoring, count the number of digits correctly copied onto the Digit Copying Test worksheet below the line (on page 12) and record this number below.
- ◆ If the participant refused the Digit Copy Test, please mark the bubble below.

| | |
|---|---|
| GCDIGIT | GCDIGREF |
| Score: <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> number completed | <input type="checkbox"/> Participant refused Digit Copying Test |

- ◆ Go to the next test.



Purpose:

To measure verbal learning and memory during a multiple-trial list-learning task.

Administration:

Have the participant sit comfortably at a desk or table.

Script: "I'm going to read you a list of 12 words. Please listen carefully, because when I stop, I want you to tell me as many of the words as you can remember. They don't have to be in any order. You will get 6 chances to learn all 12 words. Each time I will tell you the words that you missed, then I want you to repeat as many of the 12 words as you can. Many people remember only about half of the words."

Show Card #3 with the first word on the list in front of the participant. Say the word aloud. After 5 seconds, repeat this procedure with the second word (**show Card #4**). Repeat this procedure for all 12 words, showing one card every 5 seconds (**show Cards #5 through #14**). After the last word is shown, ask the participant to recall as many words as they can.

Script: "I want you to tell me as many of the words as you can."

For each word correctly recalled, place an "X" in the corresponding box under the Trial column. After 60 seconds, read the list of words at the rate of one word per 2 seconds skipping over the words that were recalled correctly on the preceding trial. Always present the words in order beginning with the top of the list and working to the bottom. Give the participant 60 seconds for each trial. Mark with an "X" in the corresponding box all words correctly recalled for each trial. If the participant is able to recall correctly all 12 words on three consecutive trials, discontinue, but score as if all trials had been given. That is, give the participant a score of 12 for each of the remaining trials, and a score of 12 for the long-term storage (LTS) component (see below). If the participant recalls words not on the list, inform the participant, by saying something like *"cat is not one of the words."*

Immediately following the sixth trial, set the timer for 28 minutes, then administer the Activity Assessment on page 15.

After at least 20 minutes but no more than 30 minutes, ask the participant to recall all 12 words.

Script: "Remember the list of words I gave you earlier? I want you to tell me as many of the words as you can remember."

During the 20 to 30-minute delay, the other components of the Cognitive Vitality Substudy should be administered.

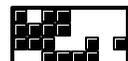
Examiner Note: Write an "X" in the corresponding box for each word correctly recalled during each trial. Please make sure that the "X" stays within the box.

| | Trial 1 GCT1W1 | Trial 2 GCT2W1 | Trial 3 GCT3W1 | Trial 4 GCT4W1 | Trial 5 GCT5W1 | Trial 6 GCT6W1 | 20-30 min GCT7W1 |
|----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------|
| bowl | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| passion | GCT1W2 | GCT2W2 | GCT3W2 | GCT4W2 | GCT5W2 | GCT6W2 | GCT7W2 |
| dawn | GCT1W3 | GCT2W3 | GCT3W3 | GCT4W3 | GCT5W3 | GCT6W3 | GCT7W3 |
| judgment | GCT1W4 | GCT2W4 | GCT3W4 | GCT4W4 | GCT5W4 | GCT6W4 | GCT7W4 |
| grant | GCT1W5 | GCT2W5 | GCT3W5 | GCT4W5 | GCT5W5 | GCT6W5 | GCT7W5 |
| bee | GCT1W6 | GCT2W6 | GCT3W6 | GCT4W6 | GCT5W6 | GCT6W6 | GCT7W6 |
| plane | GCT1W7 | GCT2W7 | GCT3W7 | GCT4W7 | GCT5W7 | GCT6W7 | GCT7W7 |
| county | GCT1W8 | GCT2W8 | GCT3W8 | GCT4W8 | GCT5W8 | GCT6W8 | GCT7W8 |
| choice | GCT1W9 | GCT2W9 | GCT3W9 | GCT4W9 | GCT5W9 | GCT6W9 | GCT7W9 |
| seed | GCT1W10 | GCT2W10 | GCT3W10 | GCT4W10 | GCT5W10 | GCT6W10 | GCT7W10 |
| wool | GCT1W11 | GCT2W11 | GCT3W11 | GCT4W11 | GCT5W11 | GCT6W11 | GCT7W11 |
| meal | GCT1W12 | GCT2W12 | GCT3W12 | GCT4W12 | GCT5W12 | GCT6W12 | GCT7W12 |

| | |
|---|---|
| a. Trial 1: Count the number of words recalled in Trial 1 (maximum=12). | <input type="text"/> <input type="text"/> GCSRTT1 words |
| b. Total Recall: Count the number of words recalled over the first 6 trials (maximum=72). | <input type="text"/> <input type="text"/> GCSRTREC words |
| c. Trial 6 LTS (long-term storage): Count the number of words recalled at least twice in a row that were also recalled in Trial 6 (the final learning trial). If the second time a word is recalled twice in a row is Trial 6, it still counts as an LTS (maximum=12). | <input type="text"/> <input type="text"/> GCSRTLTS words |
| d. Record time of <u>start</u> of 20-30 minute recall period (time when timer is set for 28 minutes). | <input type="text"/> : <input type="text"/> <input type="text"/> GCSRTM1 ① am GCSRTAM1 ② pm |
| e. Record time of <u>end</u> of 20-30 minute recall period. | <input type="text"/> : <input type="text"/> <input type="text"/> GCSRTM2 ① am GCSRTAM2 ② pm |
| f. 20-30 minute Recall: Count the number of words recalled after 20-30 minute delay (maximum=12). | <input type="text"/> <input type="text"/> GCSRT20R words |
| g. Was the complete Buschke Selective Reminding Test administered (Trials 1-6 and 20-30 minute recall)? | ① Yes GCSRTC ① No, participant refused ② No, other reason |

Page Link #

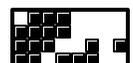
Draft



Script: "For each of the following activities, please tell me how often you did them in the past year: (REQUIRED: Show Card #15). Not at all (0), Once or twice only (1), Less than once a month (2), At least monthly (3), Less than once a week (4), At least every week (5), Several times a week (6), or Daily (7). You can just say the number next to your choice if you want."

(Examiner Note: If the activity is sporadic (e.g., several days in a row, a few times a year) and the participant cannot choose a response, choose at least monthly as the response.)

| Activity In the past 12 months, how often did you...? | Frequency | | | | | | | | | |
|--|------------|--------------------|------------------------|------------------|-----------------------|---------------------|----------------------|-------|------------|---------|
| | Not at all | Once or twice only | Less than once a month | At least monthly | Less than once a week | At least every week | Several times a week | Daily | Don't know | Refused |
| 1. Do a crossword or other word or jigsaw puzzle. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 2. Read a newspaper or magazine article. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 3. Read a novel or non-fiction book, such as a biography. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 4. Play board games, bingo, bridge, or other card games. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 5. Use a computer. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 6. Write a letter, article, poem, or story. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 7. Travel 100 miles or more from your home. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 8. Do handcrafts, sewing, needlework, carpentry, wood working, model building, art projects, sketching or drawing, photography, or painting. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 9. Go out to a movie; attend a concert, the theater, or a sports event; or visit a museum, zoo, aquarium, or science center. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 10. Take a class or adult education course. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 11. Attend a lecture, discussion, or public meeting. | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |
| 12. Participate in church, community, or social club activities (in addition to any mentioned above). | 0 0 | 1 1 | 2 2 | 3 3 | 4 4 | 5 5 | 6 6 | 7 7 | 8 Dk | 9 Ref |



| | |
|---|---|
| HABC Enrollment ID # | Acrostic |
| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| GDID | GDACROS |

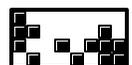
YEAR 7 COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

1 Please tell me, in a typical week, how often do you get together with friends or neighbors?
(REQUIRED: Show Card #16)

- GDSCFRND
- 4 At least once a day
 - 3 4 to 6 times per week
 - 2 2 to 3 times per week
 - 1 1 time per week
 - 0 Less than once per week
 - 8 Don't know
 - 7 Refused

2 In a typical week, how often do you get together with children or other relatives?
(REQUIRED: Show Card #16)

- GDSCREL
- 4 At least once a day
 - 3 4 to 6 times per week
 - 2 2 to 3 times per week
 - 1 1 time per week
 - 0 Less than once per week
 - 8 Don't know
 - 7 Refused



The next set of questions are about any work, volunteer, and caregiving activities that you do.

3 Do you currently work for pay, either at a regular job, consulting, or doing odd jobs?

GDVWCURJ ① Yes ② No ③ Don't know ④ Refused

↓ ↓ ↓ ↓

Go to Question #4

a. On average, how many hours do you work per week?

GDVWAHWR hours **GDVWAHDK** ① Don't know

b. How many months of the year do you work?

GDVWMOW months **GDVWMODK** ① Don't know

c. Which of the following categories best describes the type of activity that you do in your job? Would you say...
(Examiner Note: REQUIRED - Show Card #17.)

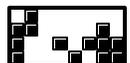
① Mainly sitting

② Sitting, some standing and/or walking

③ Mostly standing and/or walking

④ Mostly walking and lifting and/or carrying; heavy manual work

⑤ Don't know



4 Do you currently do any volunteer work?

GDVWCURV 1 Yes 0 No 8 Don't know 7 Refused

Go to Question #5

a. On average, how many hours do you volunteer per week?

GDVWAHVW

hours

GDVWADK

1 Don't know

b. How many months of the year do you do this?

GDVWMOV

months

GDVWMDK

1 Don't know

c. Which of the following categories best describes the type of activity you do?
(Examiner Note: **REQUIRED - Show Card #17.**)

GDVWVACT

- 1 Mainly sitting
- 2 Sitting, some standing and/or walking
- 3 Mostly standing and/or walking
- 4 Mostly walking and lifting and/or carrying; heavy manual work
- 8 Don't know

5 About how many hours per week do you spend watching television?
(Examiner Note: **REQUIRED - Show Card #18.**)

0 Zero

GDVWTV

- 1 More than 0 but less than 7 hours/week
- 2 At least 7, but less than 14 hours/week
- 3 At least 14, but less than 21 hours/week
- 4 At least 21, but less than 28 hours/week
- 5 At least 28, but less than 35 hours/week
- 6 35 or more hours/week
- 8 Don't know
- 7 Refused

Do you usually use a remote control for your TV?

GDVWTVRM

1 Yes 0 No 8 Don't know

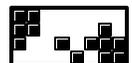
6 About how many hours per week do you spend reading, including books, newspapers, and magazines?

GDVWRDRF

GDVWREAD

hours

8 Don't know 7 Refused



7 During the past week, have you felt nervous or shaky inside?

GSSNRVS Yes No Don't know Refused

How nervous or shaky have you felt? Would you say a little, quite a bit, or extremely nervous and shaky inside?

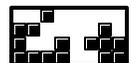
- GSSNDEG**
- A little
 - Quite a bit
 - Extremely
 - Don't know

8 During the past week, have you felt tense or keyed up?

GDSSTENS Yes No Don't know Refused

How tense or keyed up have you felt? Would you say a little, quite a bit, or extremely tense or keyed up?

- GDSSTDEG**
- A little
 - Quite a bit
 - Extremely
 - Don't know



10 Please tell me whether you agree or disagree with this statement:
I can do just about anything I really set my mind to. Would you say you agree or disagree?

GDSSCAN ① Agree ② Disagree ③ Don't know ④ Refused

Would you say you agree strongly or agree somewhat?

① Agree strongly
② Agree somewhat
③ Don't know

GDSSCANA

Would you say you disagree strongly or disagree somewhat?

① Disagree strongly
② Disagree somewhat
③ Don't know

GDSSCAND

11 Do you agree or disagree with this statement:
I often feel helpless in dealing with the problems of life. Would you say you agree or disagree?

GDSSOFH ① Agree ② Disagree ③ Don't know ④ Refused

Would you say you agree strongly or agree somewhat?

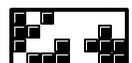
① Agree strongly
② Agree somewhat
③ Don't know

GDSSOFHA

Would you say you disagree strongly or disagree somewhat?

① Disagree strongly
② Disagree somewhat
③ Don't know

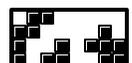
GDSSOFHD

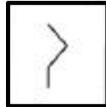


- ◆ Give the participant a pen and place the Pattern Comparison Practice worksheet on the desk or table in front of the participant.
- ◆ **Script:** "In this test you will be asked to determine whether two patterns of lines are the same or different. If the two patterns are the SAME, put an "X" in the box labeled "Same."
If they are DIFFERENT, put an "X" in the box marked "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair of line patterns.
Try the following examples."
- ◆ Make sure the participant understands the instructions before continuing.
Place the Pattern Comparison Test Sheet face down in front of the participant, then say:
- ◆ **Script:** "You will have 30 seconds to compare as many line patterns as possible.
When I say go, turn the sheet over and start. Ready? Go."
- ◆ Start timing immediately after the participant turns the test worksheet over.
After 30 seconds, say: "STOP. Thank you."
- ◆ Draw a line through both answer boxes for any answers that are marked by the participant after you say "Stop." Initial the correction so that it is clear to the data managers that these answers are not to be counted as completed.
- ◆ Look over the Pattern Comparison Test worksheet. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses.
Go to the next test.
- ◆ If the participant refused the Pattern Comparison Test, please mark the bubble below.

Participant refused Pattern Comparison Test

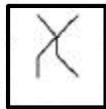
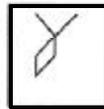
GDPCRf





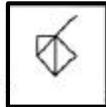
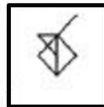
Same

Different



Same

Different



Same

Different



| | | | | | |
|-----|--|-------------------------------------|-----|--|-------------------------------------|
| 1. | | GDPC01 1 Same 2 Different | 16. | | GDPC16 1 Same 2 Different |
| 2. | | GDPC02 1 Same 2 Different | 17. | | GDPC17 1 Same 2 Different |
| 3. | | GDPC03 1 Same 2 Different | 18. | | GDPC18 1 Same 2 Different |
| 4. | | GDPC04 1 Same 2 Different | 19. | | GDPC19 1 Same 2 Different |
| 5. | | GDPC05 1 Same 2 Different | 20. | | GDPC20 1 Same 2 Different |
| 6. | | GDPC06 1 Same 2 Different | 21. | | GDPC21 1 Same 2 Different |
| 7. | | GDPC07 1 Same 2 Different | 22. | | GDPC22 1 Same 2 Different |
| 8. | | GDPC08 1 Same 2 Different | 23. | | GDPC23 1 Same 2 Different |
| 9. | | GDPC09 1 Same 2 Different | 24. | | GDPC24 1 Same 2 Different |
| 10. | | GDPC10 1 Same 2 Different | 25. | | GDPC25 1 Same 2 Different |
| 11. | | GDPC11 1 Same 2 Different | 26. | | GDPC26 1 Same 2 Different |
| 12. | | GDPC12 1 Same 2 Different | 27. | | GDPC27 1 Same 2 Different |
| 13. | | GDPC13 1 Same 2 Different | 28. | | GDPC28 1 Same 2 Different |
| 14. | | GDPC14 1 Same 2 Different | 29. | | GDPC29 1 Same 2 Different |
| 15. | | GDPC15 1 Same 2 Different | 30. | | GDPC30 1 Same 2 Different |

- ◆ Give the participant a pen and place the Letter Comparison Practice worksheet on the desk or table in front of the participant.

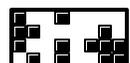
Script: "In this test you will be asked to determine whether two sets of letters are the same or different. If the letters are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box labeled "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair. Try the following examples."

- ◆ Make sure the participant understands the instructions before continuing.
Place the Letter Comparison Test worksheet face down in front of the participant, then say:

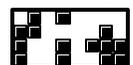
Script: "You will have 30 seconds to compare as many pairs as possible.
When I say go, turn the sheet over and start. Ready? Go."

- ◆ Start timing immediately after the participant turns the test worksheet over.
After 30 seconds, say: "STOP. Thank you."
- ◆ Draw a line through both answer boxes for any answers that are marked by the participant after you say "Stop." Initial the correction so that it is clear to the data managers that these answers are not to be counted as completed.
- ◆ Look over the Letter Comparison Test worksheet. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses.
Go to the next test.
- ◆ If the participant refused the Letter Comparison Test, please mark the bubble below.

Participant refused Letter Comparison Test
GDLCRF



| | | |
|------------------|------------------|--|
| YCX | YMX | <input type="checkbox"/> Same <input type="checkbox"/> Different |
| HTRBDP | HTRBDP | <input type="checkbox"/> Same <input type="checkbox"/> Different |
| LNDPRSKQB | LNDPRSJQB | <input type="checkbox"/> Same <input type="checkbox"/> Different |



| | | | | |
|---------------|-----------|-------------------------------|------------------------------------|--------|
| 1. HCF | RCF | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC01 |
| 2. QTPRJX | QTPNJX | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC02 |
| 3. MZDYGVGKQ | MZDYGLGKQ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC03 |
| 4. FQTNMK | JQTNMK | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC04 |
| 5. CLJ | CLJ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC05 |
| 6. JGDMNSVPW | JGZMNSVPW | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC06 |
| 7. FPTVHKCBJ | FPTVHKCBJ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC07 |
| 8. XRPZBS | ZRPZBH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC08 |
| 9. ZSQ | ZSP | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC09 |
| 10. MPZRXL | MPZRXL | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC10 |
| 11. KJH | KRH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC11 |
| 12. SMNHVTFCB | SMNHVTFCB | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC12 |
| 13. KJWTQF | KJWTQF | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC13 |
| 14. CHDKQGLMB | CHDKQGLMB | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC14 |
| 15. GHQ | GHQ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC15 |
| 16. GFVMRH | GFVMRH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC16 |
| 17. RSM | RSM | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC17 |
| 18. BSRJTRMLG | BSFJTRMLG | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC18 |
| 19. NBGFSM | NBGFSM | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC19 |
| 20. RNV | FNV | <input type="checkbox"/> Same | <input type="checkbox"/> Different | GDLC20 |



Script: "The next set of tests measure reaction time and are done using a computer screen and keyboard."

Have the participant sit comfortably facing a computer screen and keyboard, then sit down next to and to the right of the participant. Make sure the computer is running in DOS mode and the directory is set to the digtime directory. Type in "GO."

Script: "For the first test, all you need to do is press the "/" key with your right index finger, like this [demonstrate], whenever you see numbers in this box. Please hit the key as fast as you can. The first test is for practice. Are you ready?"

If a participant has difficulty understanding the directions, the examiner should demonstrate the procedure in the following way: The examiner points to the number box on the screen that changes with the "/" keystroke and makes the numbers change.

Script: "In this task you hit the "/" key as fast as you can whenever you see numbers in this box, like this."

Hit "/" key several times.

Script: "Now you try it."

Make sure the participants understand and if needed demonstrate again. Occasionally a participant may press the slash key too hard and cause the slash to automatically be repeated. If this happens, instruct the participant to hit the key correctly (by demonstrating a second time), and begin the reaction time tests again.

Script: "Ready? Go."

Then press <ENTER> to start the test. After one practice trial, repeat the Simple Reaction Time Test.

Script: "Now, let's do the test for real. Please hit the key as fast as you can. Ready? Go."

Press <ENTER> to start the test. When finished, thank the participant.



Script: "For this test, a box will appear with two numbers, as shown here. [Show Card #19]. When the numbers in the box are the same, press the "/"." If the numbers are different, press the "Z." You will get one short practice then two longer tests."

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: "For example, on this card the numbers are 2 and 7 and these are not the same so you would need to press the "Z" key for different. Now you try a few examples."

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/".

Script: "Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

Digit Digit - Practice

Test #2

- ① Practice test completed **GDDDT2C**
- ② Practice test not completed, participant refused
- ③ Practice test not completed, other reason

Digit Digit - Trial 1

Test #3

- ① Test completed **GDDDT3C**
- ② Test not completed, participant refused
- ③ Test not completed, other reason

Score: Test #3

.

GDDDT3PA
percent accuracy

GDDDT3MT median time (msecs)

Digit Digit - Trial 2

Repeat Digit Digit following instructions above.

Test #4

- ① Test completed **GDDDT4C**
- ② Test not completed, participant refused
- ③ Test not completed, other reason

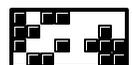
Score: Test #4

.

GDDDT4PA
percent accuracy

GDDDT4MT median time (msecs)

Page Link #



Script: "For this test, a box will appear with a number in the top and a symbol in the bottom, as shown here [Show Card #20]. When the number and symbol in the box match at the top of the screen, press the "/." If the number and symbol do not match, press the "Z." You will get one short practice then two longer tests."

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: "For example, on this card the 2 and upside down V symbol do not match the 2 and upside down T here [Point], therefore you would hit the "Z" key for different. Now you try a few examples."

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/."

Script: "Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

Digit Symbol - Practice

- Test #5
- ① Practice test completed **GDDST5C**
 - ② Practice test not completed, participant refused
 - ③ Practice test not completed, other reason

Digit Symbol - Trial 1

- Test #6
- ① Test completed **GDDST6C**
 - ② Test not completed, participant refused
 - ③ Test not completed, other reason

Score: Test #6

. **GDDST6PA**
percent accuracy

GDDST6MT
median time (msecs)

Digit Symbol - Trial 2

Repeat Digit Symbol following instructions above.

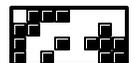
- Test #7
- ① Test completed **GDDST7C**
 - ② Test not completed, participant refused
 - ③ Test not completed, other reason

Score: Test #7

. **GDDST7PA**
percent accuracy

GDDST7MT
median time (msecs)

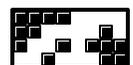
Page Link #



Now I have some questions about your feelings during the past week. For each of the following statements, please tell me if you felt that way: Rarely or None of the time; Some of the time; Much of the time; Most or All of the time.

(Interviewer Note: REQUIRED - Show Card #21.)

| | Rarely or None of the time (<1 day) | Some of the time (1-2 days) | Much of the time (3-4 days) | Most or All of the time | Don't know | Refused |
|--|-------------------------------------|-----------------------------|-----------------------------|-------------------------|------------|---------|
| a. I was bothered by things that usually don't bother me. GDFBOTH | ① | ② | ③ | ④ | ⑧ | ⑦ |
| b. I had trouble keeping my mind on what I was doing. GDFMIND | ① | ② | ③ | ④ | ⑧ | ⑦ |
| c. I was depressed. GDFDOWN | ① | ② | ③ | ④ | ⑧ | ⑦ |
| d. I felt that everything I did was an effort. GDFEFFRT | ① | ② | ③ | ④ | ⑧ | ⑦ |
| e. I felt hopeful about the future. GDFHOPE | ① | ② | ③ | ④ | ⑧ | ⑦ |
| f. I felt fearful. GDFFEAR | ① | ② | ③ | ④ | ⑧ | ⑦ |
| g. My sleep was restless. GDFSLEEP | ① | ② | ③ | ④ | ⑧ | ⑦ |
| h. I was happy. GDFHAPPY | ① | ② | ③ | ④ | ⑧ | ⑦ |
| i. I felt lonely. GDFLONE | ① | ② | ③ | ④ | ⑧ | ⑦ |
| j. I could not get going. GDFNOGO | ① | ② | ③ | ④ | ⑧ | ⑦ |



① Place the task sheet before the participant and point to the task.

Script: "Look at these boxes across the top of the page. On the top of each box is a number from one through nine. On the bottom part of each box there is a symbol. Each symbol is paired with a number."

② Point to the four rows of boxes.

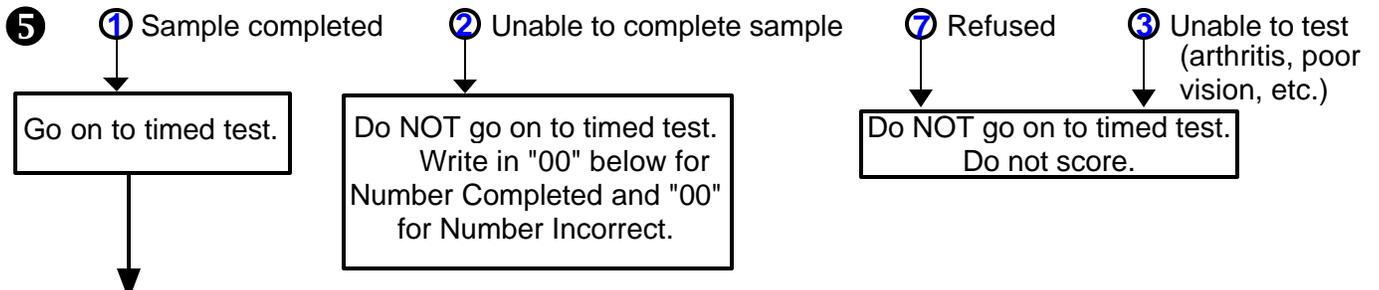
Script: "Down here are boxes with numbers on the top, but the bottom part is blank. What I want you to do is to put the correct symbol in each box like this."

③ Fill in the first three sample boxes.

Script: "Now I want you to fill in all boxes up to this line."

④ Point to the line separating the samples from the test proper.

GDTST



Script: "When I tell you to begin, start here and fill in the boxes in these four rows. Do them in order and don't skip any. Please try to work as quickly as possible. Let's begin."

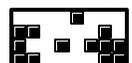
Stop the participant after 90 seconds. Say:

Script: "That's good. That completes this set of tasks."

Score: *(Examiner Note: Use Card #22 to score test.
DO NOT COUNT ANY SYMBOLS AFTER TWO BLANKS IN A ROW).*

GDNC
Number Completed:

GDNI
Number Incorrect:



| DIGIT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | SCORE |
|--------|---|---|---|---|---|---|---|---|---|----------------------|
| SYMBOL | — | L | 3 | L | U | 0 | Λ | X | = | <input type="text"/> |

SAMPLES

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 3 | 7 | 2 | 4 | 8 | 1 | 5 | 4 | 2 | 1 | 3 | 2 | 1 | 4 | 2 | 3 | 5 | 2 | 3 | 1 | 4 | 6 | 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 4 | 2 | 7 | 6 | 3 | 5 | 7 | 2 | 8 | 5 | 4 | 6 | 3 | 7 | 2 | 8 | 1 | 9 | 5 | 8 | 4 | 7 | 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 2 | 5 | 1 | 9 | 2 | 8 | 3 | 7 | 4 | 6 | 5 | 9 | 4 | 8 | 3 | 7 | 2 | 6 | 1 | 5 | 4 | 6 | 3 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 2 | 8 | 1 | 7 | 9 | 4 | 6 | 8 | 5 | 9 | 7 | 1 | 8 | 5 | 2 | 9 | 4 | 8 | 6 | 3 | 7 | 9 | 8 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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| | | |
|----------------------|----------|------------|
| HABC Enrollment ID # | Acrostic | Staff ID # |
| H | | |

Year of Visit: Year 9 20 22 24 26

J2ID J2ACROS J2STFID

18

J2CONTAC

SCREENER FOR COGNITIVE VITALITY SUBSTUDY

- 1 Do you have difficulty seeing large print?
- Yes No Don't know Refused

J2LPRINT

- 2 Do you have a health or physical problem that makes it impossible for you to grasp and use a pen?
- Yes No Don't know Refused

J2GRASP



| | | |
|-------------------------------|---------------------|---------------------|
| HABC Enrollment ID # | Acrostic | Staff ID # |
| J3ID H [] [] [] [] [] | [] [] [] [] [] | [] [] [] [] [] |

J3CONTAC

J3ACROS J3STFID

Year of Visit: Year 9 20 22 24 26

CVS - TENG MINI-MENTAL STATE EXAM (3MS)

Are you comfortable? I would like to ask you a few questions that require concentration and memory. Some are a little bit more difficult than others. Some questions will be asked more than once.

(Examiner Note: Record responses. If the participant does not answer, mark the "No response" option.)

★ ① When were you born? **J3BORNND** **J3BORNRF**

a. [] [] / b. [] [] / c. [] [] No response

Month Day Year

J3BORNND **J3BORNRF** **J3BORNMY**

Where were you born? (Place of Birth?) **Answer given** **Can't do/Refused** **Not attempted/disabled**

d. City/town 1 7 3

e. State/Country 1 7 3

J3CITY **J3STE**

Examiner Note: Ask again in Question #18.

★ ③ a. I would like you to count from 1 to 5.

J3CNT 1 Able to count forward 2 Unable to count forward Say 1-2-3-4-5

b. Now I would like to you count backwards from 5 to 1. Record the responses in the order given:

(Examiner Note: Enter "99999" if no response) **J3CNTBK**

[] [] [] [] []

★ ④ a. Spell "world."

J3SPL

1 Able to spell 2 Unable to spell "It's spelled W-O-R-L-D."

b. Now spell "world" backwards

(Examiner Note: Record letter in order given. Enter "xxxxx" if no response.)

[] [] [] [] []

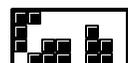
J3SPWLD

★ ② I am going to say three words for you to remember. Repeat them after I have said all three words:

Shirt, Blue, Honesty

(Examiner Note: Do not repeat the words for the participant until after the first trial. The participant may give the words in any order. If there are errors on the first trial, repeat the items up to six times until they are learned. Record responses to first attempt below.)

| | Correct | Error/Refused | Not attempted/disabled |
|---|---------------------------------------|-------------------------|-------------------------|
| a. Shirt | J3SHRT 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |
| b. Blue | J3BLU 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |
| c. Honesty | J3HON 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |
| d. Numbers of presentations necessary for the participant to repeat the sequence: | [] J3NUM | | presentations |



H [] [] [] [] [] []

[] [] [] [] [] []

Year of Visit: Year 9 20 22 24 26

5 What three words did I ask you to remember earlier?

(Examiner Note: The words may be repeated in any order. If the participant cannot give the correct answer after a category cue, provide the three choices listed. If the participant still cannot give the correct answer from the three choices, score "Unable to recall/refused" and provide the correct answer.)

a. Shirt

J4SHRM

- 1 Spontaneous recall
- 2 Correct word/incorrect form
- 3 After "Something to wear"
- 4 After "Was it shirt, shoes, or socks?"
- 7 Unable to recall/refused (provide the correct answer)
- 6 Not attempted/disabled

b. Blue

J4BLRM

- 1 Spontaneous recall
- 2 Correct word/incorrect form
- 3 After "A color"
- 4 After "Was it blue, black, or brown?"
- 7 Unable to recall/refused (provide the correct answer)
- 6 Not attempted/disabled

c. Honesty

J4HNRM

- 1 Spontaneous recall
- 2 Correct word/incorrect form
- 3 After "A good personal quality"
- 4 After "Was it honesty, charity, or modesty?"
- 7 Unable to recall/refused (provide the correct answer)
- 6 Not attempted/disabled

6 a. What is today's date?

(Examiner Note: If the participant does not answer, mark the "No response" option.)

J4TDAYM / J4TDAYD / J4TDAYY No response
 Month Day Year J4TDAYRF

b. What is the day of the week?

(Examiner Note: Write answer if incorrect.

Enter 'X' if no response and mark Error/refused.)

1 Correct _____ Day of the week
 7 Error/refused
 3 Not attempted/disabled

c. What season of the year is it?

(Examiner Note: Write answer if incorrect.

Enter 'X' if no response and mark Error/refused.)

1 Correct _____ Season
 7 Error/refused
 3 Not attempted/disabled

7 a. What state are we in?

(Examiner Note: Write answer if incorrect.

Enter 'X' if no response and mark Error/refused.)

1 Correct _____ State
 7 Error/refused
 3 Not attempted/disabled

b. What county are we in?

(Examiner Note: Write answer if incorrect.

Enter 'X' if no response and mark Error/refused.)

1 Correct _____ County
 7 Error/refused
 3 Not attempted/disabled

c. What (city/town) are we in?

(Examiner Note: Write answer if incorrect.

Enter 'X' if no response and mark Error/refused.)

1 Correct _____ City/town
 7 Error/refused
 3 Not attempted/disabled

d. Are we in a clinic, store, or home?

(Examiner Note: If correct answer [e.g., hospital or nursing home] is not among the three alternatives, substitute it for the middle alternative [store]. If the participant states that none is correct, ask them to make the best choice of the three options.)

1 Correct
 7 Error/refused
 3 Not attempted/disabled



| | |
|---|---|
| HABC Enrollment ID# | Acrostic |
| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |

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8 (Examiner Note: Point to the object or a part of your own body and ask the participant to name it. Score "Error/Refused" if the participant cannot name it within 2 seconds or gives an incorrect name. Do not wait for the participant to mentally search for the name.)

| | Correct | Error/Refused | Not attempted/disabled |
|--|-------------------------|-----------------------------------|-------------------------|
| a. Pencil: What is this? | <input type="radio"/> 1 | <input type="radio"/> 7 J5PENC | <input type="radio"/> 3 |
| b. Watch: What is this? | <input type="radio"/> 1 | <input type="radio"/> 7 J5WTCH | <input type="radio"/> 3 |
| c. Forehead: What do you call this part of the face? | <input type="radio"/> 1 | <input type="radio"/> 7 J5FRHD | <input type="radio"/> 3 |
| d. Chin: And this part? | <input type="radio"/> 1 | <input type="radio"/> 7 J5CHIN | <input type="radio"/> 3 |
| e. Shoulder: And this part of the body? | <input type="radio"/> 1 | <input type="radio"/> 7 J5SHLD | <input type="radio"/> 3 |
| f. Elbow: And this part? | <input type="radio"/> 1 | <input type="radio"/> 7 J5ELP | <input type="radio"/> 3 |
| g. Knuckle: And this part? | <input type="radio"/> 1 | <input type="radio"/> 7 J5KNK | <input type="radio"/> 3 |

10 (Examiner Note: If the initial response is scored "Lesser correct answer" or "Error," coach the participant by saying: "An arm and a leg are both limbs or extremities" to reinforce the correct answer. Coach only for Question #10a. No other prompting or coaching is allowed.)

a. In what way are an arm and a leg alike?

- 1 Limbs, extremities, appendages J5ARLG
- 2 Lesser correct answer
- 7 (e.g., body parts, both bend, have joints)
- 0 Error/refused
- 3 (e.g., states differences, gives unrelated answer)
- 0 Not attempted/disabled

b. In what way are laughing and crying alike?

- 1 Expressions of feelings, emotions J5LCRY
- 2 Lesser correct answer
- 7 (e.g., sounds, expressions, other similar responses)
- 0 Error/refused
- 3 (e.g., states differences, gives unrelated answer)
- 0 Not attempted/disabled

9 What animals have four legs? Tell me as many as you can.

(Examiner Note: Discontinue after 30 seconds. Record the total number of correct responses. If the participant gives no response in 10 seconds and there are still at least 10 seconds remaining, gently remind them [once only]. "What (other) animals have four legs?" The first time an incorrect answer is provided, say, "I want four-legged animals." Do not correct for subsequent errors.)

Score (total correct responses):

J5E2SCR

(Examiner Note: Write any additional correct answers on a separate sheet of paper.)

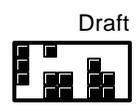
c. In what way are eating and sleeping alike?

- 1 Necessary bodily functions, essential for life
- 2 Lesser correct answer
- 7 (e.g., bodily functions, relaxing, good for you or other similar responses)
- 0 Error/refused
- 3 (e.g. states differences, gives unrelated answer)
- 0 Not attempted/disabled

J5ETSL

11 Repeat what I say: "I would like to go out." (Examiner Note: Pronounce the individual words distinctly but with normal tempo of a spoken sentence.)

- 1 Correct J5RPT
- 2 1 or 2 words missed
- 7 3 or more words missed/refused
- 3 Not attempted/disabled



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| HABC Enrollment ID# | Acrostic |
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★ 12 Now repeat: "No ifs, ands or buts."

(Examiner Note: Pronounce the individual words distinctly but with normal tempo of a spoken sentence. Give no credit if the participant misses the "s.")

| | Correct | Error/ Refused | Not attempted/ disabled |
|------------|---------|----------------|-------------------------|
| a. no ifs | 10 | 70 | 30 |
| | | J6IF | |
| b. ands | 10 | 70 | 30 |
| | | J6AND | |
| c. or buts | 10 | 70 | 30 |
| | | J6BUT | |

13 Examiner Note: Hold up Card #1 and say,

"Please do this."

If the participant does not close their eyes within 5 seconds, prompt by pointing to the sentence and saying

"Read and do what this says."

If the participant has already read the sentence aloud spontaneously, simply say,

"Do what this says."

Allow 5 seconds for the response. Assign the appropriate score (see below). As soon as the participant closes their eyes, say

"Open."

- J6CRD1
- 1 Closes eyes without prompting
 - 2 Closes eyes after prompting
 - 3 Reads aloud, but does not close eyes
 - 7 Does not read aloud or close eyes/refused
 - 5 Not attempted/disabled

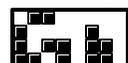
14 Please write the following sentence:
I would like to go out.

(Examiner Note: Hand participant a piece of blank paper and a #2 pencil with eraser. If necessary, repeat the sentence word by word as the participant writes. Allow a maximum of 1 minute after the first reading of the sentence for scoring the task. Either printing or cursive writing is allowed. Score "Correct" for each correct word, but no credit for "I". For each word, score "Error/Refused" if there are spelling errors or incorrect mixed capitalizations [all letters printed in uppercase are permissible]. Self-corrected errors are acceptable.)

| | Correct | Error/ Refused | Not attempted/ disabled |
|----------|---------|----------------|-------------------------|
| a. would | 10 | 70 | 30 |
| | | J6WLD | |
| b. like | 10 | 70 | 30 |
| | | J6LKE | |
| c. to | 10 | 70 | 30 |
| | | J6TO | |
| d. go | 10 | 70 | 30 |
| | | J6GO | |
| e. out | 10 | 70 | 30 |
| | | J6OUT | |

(Examiner Note: Note which hand the participant uses to write. If this task is not done, ask participant if they are right or left handed. [Use in Question #16])

- 1 Right
 - 2 Left
 - 8 Unknown
- J6HAND



| | |
|--|----------|
| HABC Enrollment ID# | Acrostic |
| J7ID H | J7ACROS |
| Year of Visit: <input type="radio"/> Year 9 <input checked="" type="radio"/> 20 <input type="radio"/> 22 <input type="radio"/> 24 <input type="radio"/> 26 | |

Year of Visit: Year 9 20 22 24 26

15 Here is a drawing. Please copy the drawing onto this piece of paper.
(Examiner Note: Hand participant Card #2. Allow 1 minute for copying. For right-handed participants, present the sample on the left side; for left-handed participants, present the sample on the right side. Allow a maximum of 1 minute for response. Do not penalize for self-corrected errors, tremors, minor gaps, or overshoots.)

a. Pentagon 1 **J7PENT1**

- 1 5 approximately equal sized
- 2 5 sides, but longest:shortest side is >2:1
- 3 nonpentagon enclosed figure
- 4 2 or more lines, but it is not an enclosed figure
- 7 less than 2 lines/refused
- 6 not attempted/disabled

b. Pentagon 2 **J7PENT2**

- 1 5 approximately equal sized
- 2 5 sides, but longest:shortest side is >2:1
- 3 nonpentagon enclosed figure
- 4 2 or more lines, but it is not an enclosed figure
- 7 less than 2 lines/refused
- 6 not attempted/disabled

c. Intersection **J7INT**

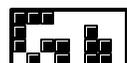
- 1 4-cornered enclosure
- 2 not a 4-cornered enclosure
- 7 no enclosure/refused
- 4 not attempted/disabled

16 *(Examiner Note: Refer to Question #14 to check whether the participant is right- or left-handed. Ask them to take the paper in their non-dominant hand.)*

"Take this paper with your left (right for left handed person) hand, fold it in half using both hands, and hand it back to me."

(Examiner Note: After saying the whole command, hold the paper within reach of the participant. Do not repeat any part of the command. Do not move the paper toward the participant. The participant may hand back the paper with either hand.)

| | Correct | Error/ Refused | Not attempted/ disabled |
|--------------------------------|-------------------------|-------------------------|-------------------------------|
| a. Takes paper in correct hand | 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |
| | | J7PCOR | |
| b. Folds paper in half | 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |
| | | J7PFLD | |
| c. Hands paper back | 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |
| | | J7PHND | |



| | | | | |
|---|--|--|--|--|
| H | | | | |
|---|--|--|--|--|

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

★ 17 What three words did I ask you to remember earlier?

(Examiner Note: Administer this item even when the participant scored one or more "unable to recall/refused" on Question #5. The words may be repeated in any order. For each word not readily given, provide the category followed by multiple choices when necessary. Do not wait more than 3 seconds for spontaneous recall and do not wait more than 2 seconds after category cueing before providing the next level of help.)

a. Shirt J8SH2

- 1 Spontaneous recall
- 2 Correct word/incorrect form
- 3 After "Something to wear"
- 4 After "Was it shirt, shoes, or socks?"
- 7 Unable to recall/refused
- 6 (provide the correct answer)
- Not attempted/disabled

b. Blue J8BLU2

- 1 Spontaneous recall
- 2 Correct word/incorrect form
- 3 After "A color"
- 4 After "Was it blue, black, or brown?"
- 7 Unable to recall/refused
- 6 (provide the correct answer)
- Not attempted/disabled

c. Honesty J8HON2

- 1 Spontaneous recall
- 2 Correct word/incorrect form
- 3 After "A good personal quality"
- 4 After "Was it honesty, charity, or modesty?"
- 7 Unable to recall/refused
- 6 (provide the correct answer)
- Not attempted/disabled

★ 18 Would you please tell me again where you were born?

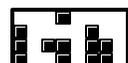
(Examiner Note: Ask this question only when a response was given in Question #1d and #1e. Score the response by checking against the response in Question #1d and #1e.)

| Place of Birth? | Matches | Does not match/ Refused | Not attempted/ disabled |
|---------------------------|-------------------------|----------------------------|----------------------------|
| a. _____ City/town | 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |
| b. _____ State/Country | 1 <input type="radio"/> | 7 <input type="radio"/> | 3 <input type="radio"/> |

J8CITY2
J8STE2

★ 19 *(Examiner Note: If physical/functional disabilities or other problems exist which cause the participant difficulty in completing any of the tasks, record the nature of the problem listed below. Mark all that apply.)*

- 1 Vision J8VIS
- 1 Hearing J8HEAR
- 1 Writing problems due to injury or illness J8WRITE
- 1 Illiteracy or lack of education J8ILLIT
- 1 Language J8LANG
- 1 Other J8OTH *(Please record the specific problem in the space provided.)*



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| J9ID H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | J9ACROS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |

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18

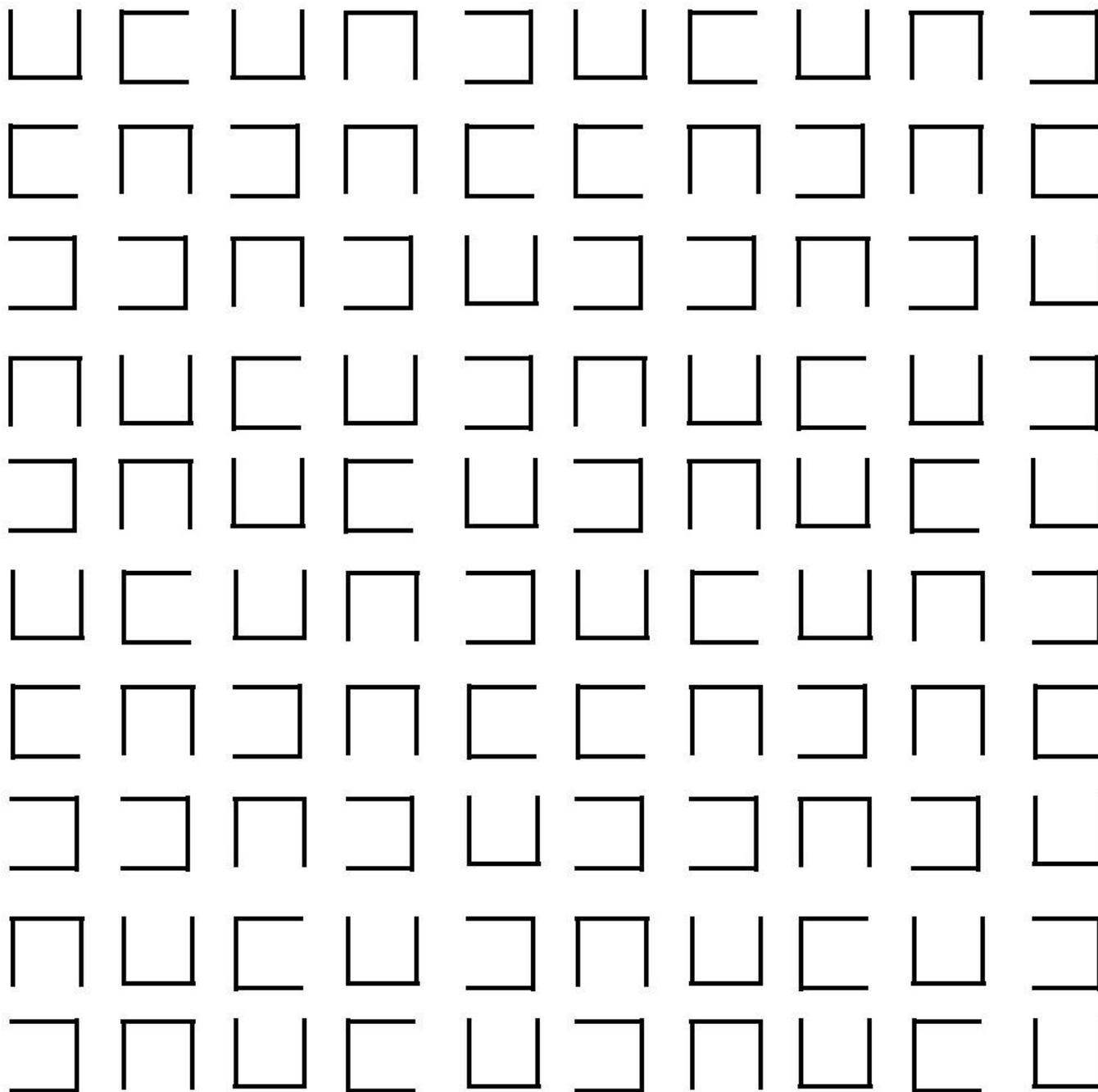
COGNITIVE VITALITY SUBSTUDY - BOXES TEST

- ◆ Determine if participant wears glasses for reading.
- ◆ Script: "Do you usually wear glasses to read?" Yes No → Ask the participant to put on their glasses.
J9GLS
- ◆ Give the participant a pen and place the Boxes Test worksheet on the desk or table in front of the participant. Using the first three boxes at the top of the Boxes Test worksheet, demonstrate the task to the participant. Have the participant practice the test with the remaining seven boxes.
- ◆ Script: "Please complete as many boxes as you can, like this."
- ◆ Demonstrate, working rapidly. Use the first three boxes.
- ◆ Script: "Now, you try the rest of the boxes above the line."
- ◆ After the participant completes the practice boxes, show the participant where to begin the test.
- ◆ Script: "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."
- ◆ Start timing.
- ◆ After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Boxes Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- ◆ For scoring, count the number of successfully completed boxes below the line (on page 10) and record this number below.
- ◆ If the participant refused the Boxes Test, please mark the bubble below.

| | |
|--|--|
| J9BOX | -1 |
| Score: <input type="text"/> <input type="text"/> <input type="text"/> number completed | <input type="radio"/> Participant refused Boxes Test |
| | J9BOXREF |

- ◆ Go to the next test.

Sample:



| | | | | | | | | |
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| HABC Enrollment ID# | | | | | Acrostic | | | |
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DIGIT COPYING TEST

- ◆ Give the participant a pen and place the Digit Copying Test worksheet on the desk or table in front of the participant. Using the boxes at the top of the Digit Copying Test worksheet, demonstrate the task to the participant.
- ◆ **Script:** "Please copy the number that appears in the top box in the bottom box, like this."
- ◆ Demonstrate, working rapidly. Use the first three boxes.
- ◆ **Script:** "Now, you try the rest of the boxes above the line."
- ◆ If the participant appears to be trying to copy the numbers exactly, or if the participant asks if they need to copy the numbers exactly, tell the participant: "Copy the numbers as you would normally write them."
- ◆ After the participant completes the practice boxes, show the participant where to begin the test.
- ◆ **Script:** "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."
- ◆ Start timing. After 30 seconds, say: "STOP. Thank you."
- ◆ Look over the Digit Copying Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- ◆ For scoring, count the number of digits correctly copied onto the Digit Copying Test worksheet below the line (on page 12) and record this number below.
- ◆ If the participant refused the Digit Copy Test, please mark the bubble below.

| | | | | | |
|----------------|----------------------|----------------------|----------------------|------------------|--|
| JADIGIT | | | JADIGREF | | |
| Score: | <input type="text"/> | <input type="text"/> | <input type="text"/> | number completed | <input type="radio"/> Participant refused Digit Copying Test |

- ◆ Go to the next test.

Sample:

NOT DATA

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 0 | 3 | 2 | 1 | 7 | 9 | 5 | 8 | 4 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 9 | 1 | 5 | 0 | 2 | 7 | 8 | 6 | 4 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 2 | 8 | 5 | 3 | 7 | 4 | 0 | 6 | 1 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 0 | 7 | 5 | 2 | 3 | 6 | 4 | 9 | 1 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 4 | 5 | 3 | 0 | 2 | 6 | 1 | 9 | 8 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 7 | 6 | 0 | 5 | 3 | 9 | 2 | 4 | 1 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 0 | 3 | 2 | 1 | 7 | 9 | 5 | 8 | 4 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 8 | 3 | 1 | 2 | 9 | 6 | 7 | 4 | 5 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 6 | 1 | 5 | 0 | 4 | 9 | 7 | 3 | 2 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 7 | 9 | 4 | 5 | 1 | 0 | 8 | 3 | 2 |
| | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 3 | 5 | 0 | 8 | 2 | 6 | 1 | 9 | 7 |
| | | | | | | | | | |

Draft



NOT DATA

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| HABC Enrollment ID# | Acrostic | | | | | | | | | | |
| <table border="1"><tr><td>H</td><td></td><td></td><td></td><td></td></tr></table> | H | | | | | <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> | | | | | |
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Year of Visit: Year 9

COGNITIVE VITALITY SUBSTUDY BUSCHKE SELECTIVE REMINDING TEST (SRT)

Purpose:

To measure verbal learning and memory during a multiple-trial list-learning task.

Administration:

Have the participant sit comfortably at a desk or table.

Script: "I'm going to read you a list of 12 words. Please listen carefully, because when I stop, I want you to tell me as many of the words as you can remember. They don't have to be in any order. You will get 6 chances to learn all 12 words. Each time I will tell you the words that you missed, then I want you to repeat as many of the 12 words as you can. Many people remember only about half of the words."

Show Card #3 with the first word on the list in front of the participant. Say the word aloud. After 5 seconds, repeat this procedure with the second word (**show Card #4**). Repeat this procedure for all 12 words, showing one card every 5 seconds (**show Cards #5 through #14**). After the last word is shown, ask the participant to recall as many words as they can.

Script: "I want you to tell me as many of the words as you can."

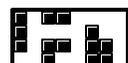
For each word correctly recalled, place an "X" in the corresponding box under the Trial column. After 60 seconds, read the list of words at the rate of one word per 2 seconds skipping over the words that were recalled correctly on the preceding trial. Always present the words in order beginning with the top of the list and working to the bottom. Give the participant 60 seconds for each trial. Mark with an "X" in the corresponding box all words correctly recalled for each trial. If the participant is able to recall correctly all 12 words on three consecutive trials, discontinue, but score as if all trials had been given. That is, give the participant a score of 12 for each of the remaining trials, and a score of 12 for the long-term storage (LTS) component (see below). If the participant recalls words not on the list, inform the participant, by saying something like "cat is not one of the words."

Immediately following the sixth trial, set the timer for 28 minutes, then administer the Activity Assessment on page 15.

After at least 20 minutes but no more than 30 minutes, ask the participant to recall all 12 words.

Script: "Remember the list of words I gave you earlier? I want you to tell me as many of the words as you can remember."

During the 20 to 30-minute delay, the other components of the Cognitive Vitality Substudy should be administered.



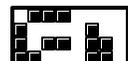
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Examiner Note: Write an "X" in the corresponding box for each word correctly recalled during each trial. Please make sure that the "X" stays within the box.

| | Trial 1 | Trial 2 | Trial 3 | Trial 4 | Trial 5 | Trial 6 | 20-30 min |
|----------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|---|-----------|
| bowl | JBT1W1 <input type="checkbox"/> | JBT2W1 <input type="checkbox"/> | JBT3W1 <input type="checkbox"/> | JBT4W1 <input type="checkbox"/> | JBT5W1 <input type="checkbox"/> | <input type="checkbox"/> JBT6W1 <input type="checkbox"/> JBT7W1 | |
| passion | JBT1W2 <input type="checkbox"/> | JBT2W2 <input type="checkbox"/> | JBT3W2 <input type="checkbox"/> | JBT4W2 <input type="checkbox"/> | JBT5W2 <input type="checkbox"/> | <input type="checkbox"/> JBT6W2 <input type="checkbox"/> JBT7W2 | |
| dawn | JBT1W3 <input type="checkbox"/> | JBT2W3 <input type="checkbox"/> | JBT3W3 <input type="checkbox"/> | JBT4W3 <input type="checkbox"/> | JBT5W3 <input type="checkbox"/> | <input type="checkbox"/> JBT6W3 <input type="checkbox"/> JBT7W3 | |
| judgment | JBT1W4 <input type="checkbox"/> | JBT2W4 <input type="checkbox"/> | JBT3W4 <input type="checkbox"/> | JBT4W4 <input type="checkbox"/> | JBT5W4 <input type="checkbox"/> | <input type="checkbox"/> JBT6W4 <input type="checkbox"/> JBT7W4 | |
| grant | JBT1W5 <input type="checkbox"/> | JBT2W5 <input type="checkbox"/> | JBT3W5 <input type="checkbox"/> | JBT4W5 <input type="checkbox"/> | JBT5W5 <input type="checkbox"/> | <input type="checkbox"/> JBT6W5 <input type="checkbox"/> JBT7W5 | |
| bee | JBT1W6 <input type="checkbox"/> | JBT2W6 <input type="checkbox"/> | JBT3W6 <input type="checkbox"/> | JBT4W6 <input type="checkbox"/> | JBT5W6 <input type="checkbox"/> | <input type="checkbox"/> JBT6W6 <input type="checkbox"/> JBT7W6 | |
| plane | JBT1W7 <input type="checkbox"/> | JBT2W7 <input type="checkbox"/> | JBT3W7 <input type="checkbox"/> | JBT4W7 <input type="checkbox"/> | JBT5W7 <input type="checkbox"/> | <input type="checkbox"/> JBT6W7 <input type="checkbox"/> JBT7W7 | |
| county | JBT1W8 <input type="checkbox"/> | JBT2W8 <input type="checkbox"/> | JBT3W8 <input type="checkbox"/> | JBT4W8 <input type="checkbox"/> | JBT5W8 <input type="checkbox"/> | <input type="checkbox"/> JBT6W8 <input type="checkbox"/> JBT7W8 | |
| choice | JBT1W9 <input type="checkbox"/> | JBT2W9 <input type="checkbox"/> | JBT3W9 <input type="checkbox"/> | JBT4W9 <input type="checkbox"/> | JBT5W9 <input type="checkbox"/> | <input type="checkbox"/> JBT6W9 <input type="checkbox"/> JBT7W9 | |
| seed | JBT1W10 <input type="checkbox"/> | JBT2W10 <input type="checkbox"/> | JBT3W10 <input type="checkbox"/> | JBT4W10 <input type="checkbox"/> | JBT5W10 <input type="checkbox"/> | <input type="checkbox"/> JBT6W10 <input type="checkbox"/> JBT7W10 | |
| wool | JBT1W11 <input type="checkbox"/> | JBT2W11 <input type="checkbox"/> | JBT3W11 <input type="checkbox"/> | JBT4W11 <input type="checkbox"/> | JBT5W11 <input type="checkbox"/> | <input type="checkbox"/> JBT6W11 <input type="checkbox"/> JBT7W11 | |
| meal | JBT1W12 <input type="checkbox"/> | JBT2W12 <input type="checkbox"/> | JBT3W12 <input type="checkbox"/> | JBT4W12 <input type="checkbox"/> | JBT5W12 <input type="checkbox"/> | <input type="checkbox"/> JBT6W12 <input type="checkbox"/> JBT7W12 | |

| | |
|--|--|
| a. Trial 1: Count the number of words recalled in Trial 1 (maximum=12). | <input type="text"/> <input type="text"/> words JBSRTT1 |
| b. Total Recall: Count the number of words recalled over the first 6 trials (maximum=72). | <input type="text"/> <input type="text"/> words JBSRTREC |
| c. Trial 6 LTS (long-term storage): Count the number of words recalled at least twice in a row that were also recalled in Trial 6 (the final learning trial). If the second time a word is recalled twice in a row is Trial 6, it still counts as an LTS (maximum=12). | <input type="text"/> <input type="text"/> words JBSRTLTS |
| d. Record time of <u>start</u> of 20-30 minute recall period (time when timer is set for 28 minutes). JBSRTM1 | <input type="text"/> <input type="text"/> : <input type="text"/> <input type="text"/> <input type="radio"/> 1 am <input type="radio"/> 2 pm |
| e. Record time of <u>end</u> of 20-30 minute recall period. JBSRTM2 | <input type="text"/> <input type="text"/> : <input type="text"/> <input type="text"/> <input type="radio"/> 1 am <input type="radio"/> 2 pm |
| f. 20-30 minute Recall: Count the number of words recalled after 20-30 minute delay (maximum=12). | <input type="text"/> <input type="text"/> words JBSRT20R |
| g. Was the complete Buschke Selective Reminding Test administered (Trials 1-6 and 20-30 minute recall)? JBSRTC | <input type="radio"/> 1 Yes <input type="radio"/> 0 No, participant refused <input type="radio"/> 2 No, other reason |



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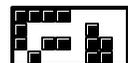
Year of Visit: Year 9 20 22 24 26

COGNITIVE VITALITY SUBSTUDY - ACTIVITY ASSESSMENT

★ *Script: "For each of the following activities, please tell me how often you did them in the past year: (REQUIRED: Show Card #15). Not at all (0), Once or twice only (1), Less than once a month (2), At least monthly (3), Less than once a week (4), At least every week (5), Several times a week (6), or Daily (7). You can just say the number next to your choice if you want."*

(Examiner Note: If the activity is sporadic (e.g., several days in a row, a few times a year) and the participant cannot choose a response, choose at least monthly as the response.)

| Activity | Frequency | | | | | | | | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------------|--------------------------------|
| | Not at all | Once or twice only | Less than once a month | At least monthly | Less than once a week | At least every week | Several times a week | Daily | Don't know | Refused |
| 1. Do a crossword or other word or jigsaw puzzle. JCAA01N | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 2. Read a newspaper or magazine article. JCAA03 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 3. Read a novel or non-fiction book such as a biography. JCAA04N | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 4. Play board games, bingo, bridge or other card games. JCAA06 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 5. Use a computer. JCAA07 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 6. Write a letter, article, poem, or story. JCAA11 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 7. Travel 100 miles or more from your home. JCAA12 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 8. Do handcrafts, sewing, needlework, carpentry, wood working, model building, art projects, sketching or drawing, photography, or painting. JCAA13N | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 9. Go out to a movie; attend a concert, the theater, or a sports event; or visit a museum, zoo, aquarium, or science center. JCAA16N | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 10. Take a class or adult education course. JCAA20 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 11. Attend a lecture, discussion, or public meeting. JCAA21 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |
| 12. Participate in church, community, or social club activities (in addition to any mentioned above). JCAA22 | 0 <input type="radio"/> | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 5 <input type="radio"/> | 6 <input type="radio"/> | 7 <input type="radio"/> | 8 Dk <input type="radio"/> | 9 Ref <input type="radio"/> |



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COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

★ ① Please tell me, in a typical week, how often do you get together with friends or neighbors?
(REQUIRED: Show Card #16)

- 4 At least once a day
- 3 4 to 6 times per week
- 2 2 to 3 times per week
- 1 1 time per week JDSCFRND
- 0 Less than once per week
- 8 Don't know
- 7 Refused

★ ② In a typical week, how often do you get together with children or other relatives?
(REQUIRED: Show Card #16)

- 4 At least once a day
- 3 4 to 6 times per week
- 2 2 to 3 times per week
- 1 1 time per week JDSCREL
- 0 Less than once per week
- 8 Don't know
- 7 Refused



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COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

The next set of questions are about any work, volunteer, and caregiving activities that you do.

★ 3 Do you currently work for pay, either at a regular job, consulting, or doing odd jobs?

1 Yes
 0 No
 8 Don't know
 7 Refused JEVWCURJ

↓ ↓ ↓ ↓

Go to Question #4

a. On average, how many hours do you work per week?

JEVWAHWR [] [] hours -1 Don't know JEVWAHDK

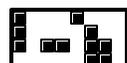
b. How many months of the year do you work?

JEVWMOW [] [] months -1 Don't know JEVWMODK

c. Which of the following categories best describes the type of activity that you do in your job? Would you say...
(Examiner Note: REQUIRED - Show Card #17.)

- 1 Mainly sitting
- 2 Sitting, some standing and/or walking
- 3 Mostly standing and/or walking
- 4 Mostly walking and lifting and/or carrying; heavy manual work
- 8 Don't know

JEVWWACT



COGNITIVE VITALITY
SUBSTUDY
QUESTIONNAIRE
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Year of Visit: Year 9 20 22 24 26

★ 4 Do you currently do any volunteer work?

1 Yes
 0 No
 8 Don't know
 7 Refused

Go to Question #5

a. On average, how many hours do you volunteer per week?

JFVWAHVW [] [] hours -10 Don't know JFVWADK

b. How many months of the year do you do this?

JFVWMOV [] [] months -10 Don't know JFVWMDK

c. Which of the following categories best describes the type of activity you do?
(Examiner Note: REQUIRED - Show Card #17.) JFVWVACT

- 10 Mainly sitting
- 20 Sitting, some standing and/or walking
- 30 Mostly standing and/or walking
- 40 Mostly walking and lifting and/or carrying; heavy manual work
- 80 Don't know

★ 5 About how many hours per week do you spend watching television?
(Examiner Note: REQUIRED - Show Card #18.)

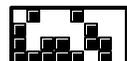
- 00 Zero
- 10 More than 0 but less than 7 hours/week
- 20 At least 7, but less than 14 hours/week
- 30 At least 14, but less than 21 hours/week
- 40 At least 21, but less than 28 hours/week
- 50 At least 28, but less than 35 hours/week
- 60 35 or more hours/week
- 80 Don't know
- 70 Refused

Do you usually use a remote control for your TV?

1 Yes
 0 No
 8 Don't know

★ 6 About how many hours per week do you spend reading, including books, newspapers, and magazines?

JFVWREAD [] [] hours 8 Don't know 7 Refused JFVWRDRF



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| HABC Enrollment ID# | Acrostic |
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COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

★ 7 During the past week, have you felt nervous or shaky inside?

- 1 Yes 0 No 8 Don't know 7 Refused JGSSNRVS

How nervous or shaky have you felt? Would you say a little, quite a bit, or extremely nervous and shaky inside?

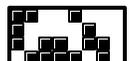
- 1 A little
 2 Quite a bit
 3 Extremely JGSSNDEG
 8 Don't know

★ 8 During the past week, have you felt tense or keyed up?

- 1 Yes 0 No 8 Don't know 7 Refused JGSSTENS

How tense or keyed up have you felt? Would you say a little, quite a bit, or extremely tense or keyed up?

- 1 A little
 2 Quite a bit
 3 Extremely JGSSTDEG
 8 Don't know



| | |
|---------------------|----------|
| HABC Enrollment ID# | Acrostic |
| H | |

Year of Visit: Year 9 20 22 24 26

COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

★ 9 Please tell me whether you agree or disagree with this statement:
I can do just about anything I really set my mind to. Would you say you agree or disagree?

1 Agree 2 Disagree 8 Don't know 7 Refused

JHSSCAN

Would you say you agree strongly or agree somewhat?

1 Agree strongly
2 Agree somewhat
8 Don't know

JHSSCAN A

Would you say you disagree strongly or disagree somewhat?

1 Disagree strongly **JHSSCAN D**
2 Disagree somewhat
8 Don't know

★ 10 Do you agree or disagree with this statement:
I often feel helpless in dealing with the problems of life. Would you say you agree or disagree?

1 Agree 2 Disagree 8 Don't know 7 Refused

JHSSOFH

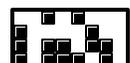
Would you say you agree strongly or agree somewhat?

1 Agree strongly
2 Agree somewhat
8 Don't know

JHSSOFH A

Would you say you disagree strongly or disagree somewhat?

1 Disagree strongly **JHSSOFH D**
2 Disagree somewhat
8 Don't know



| | |
|---|--|
| HABC Enrollment ID# | Acrostic |
| JIID <input type="text" value="H"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |

JICONTAC

JIACROS

Year of Visit: Year 9 **20** **22** **24** **26**

18

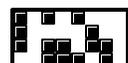
COGNITIVE VITALITY SUBSTUDY PATTERN COMPARISON TEST

- ◆ Give the participant a pen and place the Pattern Comparison Practice worksheet on the desk or table in front of the participant.
- ◆ **Script:** "In this test you will be asked to determine whether two patterns of lines are the same or different. If the two patterns are the **SAME**, put an "X" in the box labeled "Same." If they are **DIFFERENT**, put an "X" in the box marked "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair of line patterns. Try the following examples."
- ◆ Make sure the participant understands the instructions before continuing. Place the Pattern Comparison Test Sheet face down in front of the participant, then say:
- ◆ **Script:** "You will have 30 seconds to compare as many line patterns as possible. When I say go, turn the sheet over and start. Ready? Go."
- ◆ Start timing immediately after the participant turns the test worksheet over. After 30 seconds, say: "**STOP. Thank you.**"
- ◆ Draw a line through both answer boxes for any answers that are marked by the participant after you say "Stop." Initial the correction so that it is clear to the data managers that these answers are not to be counted as completed.
- ◆ Look over the Pattern Comparison Test worksheet. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses. Go to the next test.
- ◆ If the participant refused the Pattern Comparison Test, please mark the bubble below.

-1

Participant refused Pattern Comparison Test

JIPCRF



NOT DATA

| HABC Enrollment ID# | Acrostic |
|---------------------|----------|
| H | |

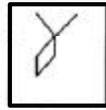
Year of Visit: Year 9

COGNITIVE VITALITY SUBSTUDY PATTERN COMPARISON TEST



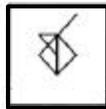
Same

Different



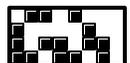
Same

Different



Same

Different



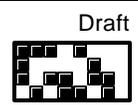
| | |
|---------------------|----------|
| HABC Enrollment ID# | Acrostic |
| H | |

Year of Visit: Year 9 20 22 24 26

18

COGNITIVE VITALITY SUBSTUDY PATTERN COMPARISON TEST

| | | | | | |
|-----|--|-------------------------------------|-----|--|-------------------------------------|
| 1. | | JKPG01 1 Same 2 Different | 16. | | JKPC16 1 Same 2 Different |
| 2. | | JKPC02 1 Same 2 Different | 17. | | JKPC17 1 Same 2 Different |
| 3. | | JKPC03 1 Same 2 Different | 18. | | JKPC18 1 Same 2 Different |
| 4. | | JKPC04 1 Same 2 Different | 19. | | JKPC19 1 Same 2 Different |
| 5. | | JKPC05 1 Same 2 Different | 20. | | JKPC20 1 Same 2 Different |
| 6. | | JKPC06 1 Same 2 Different | 21. | | JKPC21 1 Same 2 Different |
| 7. | | JKPC07 1 Same 2 Different | 22. | | JKPC22 1 Same 2 Different |
| 8. | | JKPC08 1 Same 2 Different | 23. | | JKPC23 1 Same 2 Different |
| 9. | | JKPC09 1 Same 2 Different | 24. | | JKPC24 1 Same 2 Different |
| 10. | | JKPC10 1 Same 2 Different | 25. | | JKPC25 1 Same 2 Different |
| 11. | | JKPC11 1 Same 2 Different | 26. | | JKPC26 1 Same 2 Different |
| 12. | | JKPC12 1 Same 2 Different | 27. | | JKPC27 1 Same 2 Different |
| 13. | | JKPC13 1 Same 2 Different | 28. | | JKPC28 1 Same 2 Different |
| 14. | | JKPC14 1 Same 2 Different | 29. | | JKPC29 1 Same 2 Different |
| 15. | | JKPC15 1 Same 2 Different | 30. | | JKPC30 1 Same 2 Different |



| | |
|---|--|
| HABC Enrollment ID# | Acrostic |
| JLID H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |

JLCONTAC

JLAGROS

Year of Visit: Year 9 20 22 24 26

COGNITIVE VITALITY SUBSTUDY LETTER COMPARISON TEST

- ◆ Give the participant a pen and place the Letter Comparison Practice worksheet on the desk or table in front of the participant.

Script: "In this test you will be asked to determine whether two sets of letters are the same or different. If the letters are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box labeled "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair. Try the following examples."

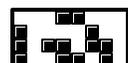
- ◆ Make sure the participant understands the instructions before continuing. Place the Letter Comparison Test worksheet face down in front of the participant, then say:

Script: "You will have 30 seconds to compare as many pairs as possible. When I say go, turn the sheet over and start. Ready? Go."

- ◆ Start timing immediately after the participant turns the test worksheet over. After 30 seconds, say: "STOP. Thank you."
- ◆ Draw a line through both answer boxes for any answers that are marked by the participant after you say "Stop." Initial the correction so that it is clear to the data managers that these answers are not to be counted as completed.
- ◆ Look over the Letter Comparison Test worksheet. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses. Go to the next test.
- ◆ If the participant refused the Letter Comparison Test, please mark the bubble below.

Participant refused Letter Comparison Test

JLLCRF

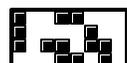


| | |
|---------------------|----------|
| HABC Enrollment ID# | Acrostic |
| H | |

Year of Visit: Year 9

COGNITIVE VITALITY SUBSTUDY
LETTER COMPARISON PRACTICE

| | | |
|------------------|------------------|--|
| YCX | YMX | <input type="checkbox"/> Same <input type="checkbox"/> Different |
| HTRBDP | HTRBDP | <input type="checkbox"/> Same <input type="checkbox"/> Different |
| LNDPRSKQB | LNDPRSJQB | <input type="checkbox"/> Same <input type="checkbox"/> Different |



| | |
|--|---|
| HABC Enrollment ID# | Acrostic |
| JNID H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |

JNCONTAC

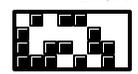
JNACROS

Year of Visit: Year 9 20 22 24 26

COGNITIVE VITALITY SUBSTUDY LETTER COMPARISON TEST

| | | | | |
|---------------|-----------|-------------------------------|------------------------------------|--------|
| 1. HCF | RCF | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC01 |
| 2. QTPRJX | QTPNJX | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC02 |
| 3. MZDYGVGKQ | MZDYGLGKQ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC03 |
| 4. FQTNMK | JQTNMK | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC04 |
| 5. CLJ | CLJ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC05 |
| 6. JGDMNSVPW | JGZMNSVPW | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC06 |
| 7. FPTVHKCBJ | FPTVHKCBJ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC07 |
| 8. XRPZBS | ZRPZBH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC08 |
| 9. ZSQ | ZSP | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC09 |
| 10. MPZRXL | MPZRXL | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC10 |
| 11. KJH | KRH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC11 |
| 12. SMNHVTFCB | SMNHVTFCB | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC12 |
| 13. KJWTQF | KJWTQF | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC13 |
| 14. CHDKQGLMB | CHDKQGLMB | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC14 |
| 15. GHQ | GHQ | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC15 |
| 16. GFVMRH | GFVMRH | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC16 |
| 17. RSM | RSM | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC17 |
| 18. BSRJTRMLG | BSFJTRMLG | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC18 |
| 19. NBGFSM | NBGFSM | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC19 |
| 20. RNV | FNV | <input type="checkbox"/> Same | <input type="checkbox"/> Different | JNLC20 |

Draft



| HABC Enrollment ID# | Acrostic |
|-----------------------|---------------------|
| H [] [] [] [] [] | [] [] [] [] [] |

Year of Visit: Year 9 **20** **22** **24** **26**

18

COGNITIVE VITALITY SUBSTUDY SIMPLE REACTION TIME TEST

Script: "The next set of tests measure reaction time and are done using a computer screen and keyboard."

Have the participant sit comfortably facing a computer screen and keyboard, then sit down next to and to the right of the participant. Make sure the computer is running in DOS mode and the directory is set to the digtime directory. Type in "GO."

Script: "For the first test, all you need to do is press the "/" key with your right index finger, like this [demonstrate], whenever you see numbers in this box. Please hit the key as fast as you can. The first test is for practice. Are you ready?"

If a participant has difficulty understanding the directions, the examiner should demonstrate the procedure in the following way: The examiner points to the number box on the screen that changes with the "/" keystroke and makes the numbers change.

Script: "In this task you hit the "/" key as fast as you can whenever you see numbers in this box, like this."

Hit "/" key several times.

Script: "Now you try it."

Make sure the participants understand and if needed demonstrate again. Occasionally a participant may press the slash key too hard and cause the slash to automatically be repeated. If this happens, instruct the participant to hit the key correctly (by demonstrating a second time), and begin the reaction time tests again.

Script: "Ready? Go."

Then press <ENTER> to start the test. After one practice trial, repeat the Simple Reaction Time Test.

Script: "Now, let's do the test for real. Please hit the key as fast as you can. Ready? Go."

Press <ENTER> to start the test. When finished, thank the participant.

Test #1

- Test completed
- Test not completed, participant refused
- Test not completed, other reason

JOSRTT1C

Score: Test #1

JOSRTT1S

[] [] [] [] median time (msecs)

| | |
|-----------------------|---------------------|
| HABC Enrollment ID # | Acrostic |
| H [] [] [] [] [] | [] [] [] [] [] |

Year of Visit: 18 Year 9 20 22 24 26

Script: "For this test, a box will appear with a number in the top and a symbol in the bottom, as shown here [Show Card #20]. When the number and symbol in the box match at the top of the screen, press the "/." If the number and symbol do not match, press the "Z." You will get one short practice then two longer tests."

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: "For example, on this card the 2 and upside down V symbol do not match the 2 and upside down T here [Point], therefore you would hit the "Z" key for different. Now you try a few examples."

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/."

Script: "Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

Digit Symbol - Practice

Test #5

- Practice test completed
- Practice test not completed, participant refused **JQDST5C**
- Practice test not completed, other reason

Digit Symbol - Trial 1

Test #6

- Test completed
- Test not completed, participant refused
- Test not completed, other reason

JQDST6C

Score: Test #6

| | | | |
|-----------------|---|---------|--|
| [] [] [] | · | [] [] | JQDST6PA percent accuracy |
| [] [] [] [] | | | JQDST6MT median time (msecs) |

Digit Symbol - Trial 2

Repeat Digit Symbol following instructions above.

Test #7

- Test completed
- Test not completed, participant refused
- Test not completed, other reason

JQDST7C

Score: Test #7

| | | | |
|-----------------|---|---------|--|
| [] [] [] | · | [] [] | JQDST7PA percent accuracy |
| [] [] [] [] | | | JQDST7MT median time (msecs) |



| | |
|---------------------------|-------------------------|
| HABC Enrollment ID# | Acrostic |
| H [] [] [] [] [] [] | [] [] [] [] [] [] |

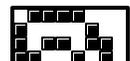
Year of Visit: Year 9 20 22 24 26

COGNITIVE VITALITY SUBSTUDY CES-D

Now I have some questions about your feelings during the past week. For each of the following statements, please tell me if you felt that way: Rarely or None of the time; Some of the time; Much of the time; Most or All of the time.

(Interviewer Note: REQUIRED - Show Card #21.)

| | Rarely or None of the time (<1 day) | Some of the time (1-2 days) | Much of the time (3-4 days) | Most or All of the time | Don't know | Refused |
|---|-------------------------------------|-----------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|
| a. I was bothered by things that usually don't bother me. JRFBOTHR | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| b. I had trouble keeping my mind on what I was doing. JRFMIND | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| c. I was depressed. JRFDOWN | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| d. I felt that everything I did was an effort. JRFEFFRT | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| e. I felt hopeful about the future. JRFHOPE | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| f. I felt fearful. JRFFEAR | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| g. My sleep was restless. JRFSLEEP | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| h. I was happy. JRFHAPPY | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| i. I felt lonely. JRFLONE | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |
| j. I could not get going. JRFNOGO | 1 <input type="radio"/> | 2 <input type="radio"/> | 3 <input type="radio"/> | 4 <input type="radio"/> | 8 <input type="radio"/> | 7 <input type="radio"/> |



| | |
|---|---|
| HABC Enrollment ID# | Acrostic |
| H <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |

Year of Visit: Year 9 20 22 24 26

COGNITIVE VITALITY SUBSTUDY DIGIT SYMBOL SUBSTITUTION

1 Place the task sheet before the participant and point to the task.

Script: "Look at these boxes across the top of the page. On the top of each box is a number from one through nine. On the bottom part of each box there is a symbol. Each symbol is paired with a number."

2 Point to the four rows of boxes.

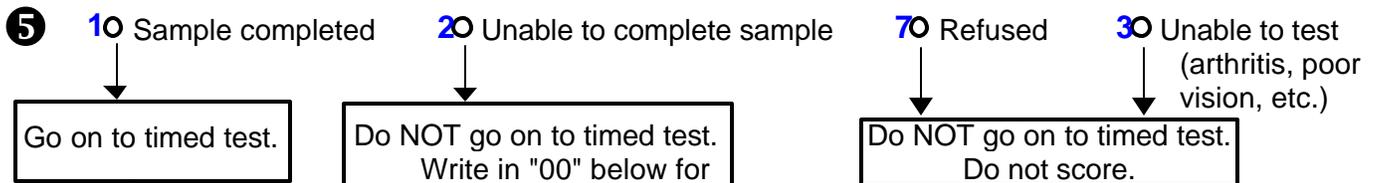
Script: "Down here are boxes with numbers on the top, but the bottom part is blank. What I want you to do is to put the correct symbol in each box like this."

3 Fill in the first three sample boxes.

Script: "Now I want you to fill in all boxes up to this line."

4 Point to the line separating the samples from the test proper.

JSTST



Script: "When I tell you to begin, start here and fill in the boxes in these four rows. Do them in order and don't skip any. Please try to work as quickly as possible. Let's begin."

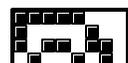
Stop the participant after 90 seconds. Say:

Script: "That's good. That completes this set of tasks."

Score: (Examiner Note: Use Card #22 to score test. DO NOT COUNT ANY SYMBOLS AFTER TWO BLANKS IN A ROW).

JSNC Number Completed:

JSNI Number Incorrect:



| DIGIT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | SCORE |
|--------|---|---|---|---|---|---|---|---|---|----------------------|
| SYMBOL | — | └ | ┐ | ┌ | U | 0 | ∧ | X | = | <input type="text"/> |

SAMPLES

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 3 | 7 | 2 | 4 | 8 | 1 | 5 | 4 | 2 | 1 | 3 | 2 | 1 | 4 | 2 | 3 | 5 | 2 | 3 | 1 | 4 | 6 | 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

NOT DATA

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 4 | 2 | 7 | 6 | 3 | 5 | 7 | 2 | 8 | 5 | 4 | 6 | 3 | 7 | 2 | 8 | 1 | 9 | 5 | 8 | 4 | 7 | 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 2 | 5 | 1 | 9 | 2 | 8 | 3 | 7 | 4 | 6 | 5 | 9 | 4 | 8 | 3 | 7 | 2 | 6 | 1 | 5 | 4 | 6 | 3 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 2 | 8 | 1 | 7 | 9 | 4 | 6 | 8 | 5 | 9 | 7 | 1 | 8 | 5 | 2 | 9 | 4 | 8 | 6 | 3 | 7 | 9 | 8 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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Appendix III: List of measurements for Each Year of the Cognitive Vitality Substudy

| EXAM | Year 3 | Year 5 | Year 7 | Year 9 | Notes |
|----------------------------------|---------------|---------------|---------------|---------------|--|
| Buschke SRT | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Activity assessment | CVS | CVS | CVS | CVS | There are 22 questions in Year 3, but only 12 questions in Years 5, 7, and 9. Some questions are combined, others are excluded. |
| Personality assessment | CVS | - | - | - | Done in Year 3 only. |
| Cognitive vitality questionnaire | CVS | CVS | CVS | CVS | Year 3 includes only the first 2 questions of the questionnaire (social contact.) Year 5 includes 10 questions. Years 7 and 9 include the same 10 questions as Year 5, and one additional question (caregiver activities.) |
| Boxes test | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Digit copying test | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Pattern comparison test | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Letter comparison test | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Simple reaction time test | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Digit digit test | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Digit symbol test | CVS | CVS | CVS | CVS | Measurement is consistent among the 4 years. |
| Teng mini-mental state exam | Annual visit | Annual visit | CVS | CVS | Done for entire cohort in Years 3 and 5, for CVS only in Years 7 and 9. |
| CES-D10 | Annual visit | Annual visit | CVS | CVS | Done for entire cohort in Years 3 and 5, for CVS only in Years 7 and 9. |
| Digit symbol substitution test | - | Annual visit | CVS | CVS | Done for entire cohort in Year 5, for CVS only in Years 7 and 9. Not done at all in Year 3. |

Appendix IV

Calculated Variables for the Cognitive Vitality Substudy

| Variable | Variable Description |
|-----------------|---|
| YxBESTDDT | Lowest median time (ms) for digit-digit test |
| YxACCDDT | Percent accuracy for digit-digit test |
| YxBESTDST | Lowest median time (ms) for digit-symbol test |
| YxACCDST | Percent accuracy for digit-symbol test |
| Y3OPENNESS | Total raw score for openness to experience |
| Y3CONSCIEN | Total raw score for conscientiousness |
| YxPSCORE | Correct pattern comparisons |
| YxLSCORE | Correct letter comparisons |
| YxSRTMIN | Total minutes in SRT recall period |
| YxCES_D10 | CES-D 10-item depression scale |
| YxDSS | Digit symbol score |
| YxMMMSCORE | Teng 3MS |
| YxMMMSFLAG | Teng 3MS prorated or set to .E |
| YxMMMPHONE | Teng 3MS administered by phone |
| YxMMMIMP | Imputed 3MS score, administered by phone |

Calculated Variables for the Cognitive Vitality Substudy

NOTE on use of prefixes in Calculated Variable documentation:

In order to make the documentation of the calculated variables generic for Years 3, 5, 7, and 9, we use the following conventions:

- Final calculated variables are listed with prefix “Yx” in the documentation. The actual prefixes in the data are “Y3”, “Y5”, “Y7”, and “Y9”*
- Input variables are listed with prefix “XX” in the documentation. For the actual prefixes in the data, please refer to the annotated forms for that year.*

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Unit: Project Office

Analysis Plan Reference Number (if applicable): AP01-90

| Variable | Descriptive Title | Detailed Description | How variable is calculated | How to handle missing or special values | Value labels |
|-----------------|--|------------------------------------|--|--|---------------------|
| YxBESTDDT | Median time for best digit-digit trial | Median time best digit-digit | Use fastest median time for trials with greater than 91% accuracy. If no trial has greater than 91% accuracy, then use fastest trial | Set all impossible values for percent accuracy ¹ or median time ² to missing before choosing best trial. If no trial remains, YxBESTDDT=. | msec |
| YxACCDDT | Percent accuracy for best digit-digit trial | Percent accuracy best digit-digit | Use percent accuracy figure for trial corresponding to YxBESTDDT | If no trial remains, YxACCDDT=. | percent |
| YxBESTDST | Median time for best digit-symbol trial | Median time best digit-symbol | Use fastest median time for trials with greater than 91% accuracy. If no trial has greater than 91% accuracy, then use fastest trial | Set all impossible values for percent accuracy ¹ or median time ² to missing before choosing best trial. If no trial remains, YxBESTDST=. | msec |
| YxACCDST | Percent accuracy for best digit-symbol trial | Percent accuracy best digit-symbol | Use percent accuracy figure for trial corresponding to YxBESTDST | If no trial remains, YxACCDST=. | percent |

¹ Percent accuracy values must be a multiple of 100/45. Since 45 discrete values could not be programmed into a possible values edit, cleanup of these values for any case where the calculated variable may be affected has been completed. The remaining impossible values have been set to missing for this release.

² Median times more than 2 standard deviations below the mean for a middle aged population were considered impossible (cutoff 300 for digit-digit; 700 for digit-symbol).

| Variable | Descriptive Title | Detailed Description | How variable is calculated | How to handle missing or special values | Value labels |
|-----------------|--|--|---|---|---------------------|
| Y3OPENNESS | Total raw score for openness to experience score on Personality Assessment Scale (page 7 of Cognitive Vitality Workbook) | Total raw score for openness to experience | For all items with values ≤ 5 , subtract 1 from response value. Reverse response values for Questions #1, 3, 7, 9, 13, 15, and 19 (i.e., if ppt responded "strongly agree", new value is 0; if ppt responded "strongly disagree", new value is 4). $OPENNESS = XXPA01 + XXPA03 + XXPA05 + XXPA07 + XXPA09 + XXPA11 + XXPA13 + XXPA15 + XXPA17 + XXPA19 + XXPA21 + XXPA23$ | Set any items coded 7 (refused) to missing Any items with values $\leq z$ remain missing If the number of missing items ≤ 2 , then pro-rate the score $(YxOPENNESS = 12 \times (\text{raw score}) / (12 - n_{\text{miss}}))$ If the number of missing > 2 , then $YxOPENNESS = .M$ | 0-48 |
| Y3CONSCIEN | Total raw score for conscientiousness on Personality Assessment Scale (page 7 of Cognitive Vitality Workbook) | Total raw score for conscientiousness | For all items with values ≤ 5 , subtract 1 from response value. Reverse response values for Questions #6, 12, 18 and 22 (i.e., if ppt responded "strongly agree", new value is 0; if ppt responded "strongly disagree", new value is 4). $YxCONSCIEN = XXPA02 + XXPA04 + XXPA06 + XXPA08 + XXPA10 + XXPA12 + XXPA14 + XXPA16 + XXPA18 + XXPA20 + XXPA22 + XXPA24$ | Set any items coded 7 (refused) to missing Any items with values $\leq z$ remain missing If the number of missing items ≤ 2 , then pro-rate the score $(CONSCIEN = 12 \times (\text{raw score}) / (12 - n_{\text{miss}}))$ If the number of missing > 2 , then $YxCONSCIEN = .M$ | 0-48 |

| Variable | Descriptive Title | Detailed Description | How variable is calculated | How to handle missing or special values | Value labels |
|-----------------|---|--|---|--|---------------------|
| YxPCSCORE | Pattern Comparison Test Score | Pattern Comparison Test Score | Patterns correctly identified as “same” or “different” score 1, patterns incorrectly identified score 0. Only comparisons completed in first 30 seconds are counted. YxPCSCORE=sum of subscores | If XXPCRf=-1, PCSCORE=. | 0-30 |
| YxLCSCORE | Letter Comparison Test Score | Letter Comparison Test Score | Letter patterns correctly identified as “same” or “different” score 1, patterns incorrectly identified score 0. Only comparisons completed in first 30 seconds are counted. YxLCSCORE=sum of subscores | If XXLCRF=-1, LCSCORE=. | 0-20 |
| YxSRTMIN | Selective Reminding Test Recall Minutes | Number of minutes in the Selective Reminding Recall (SRT) Test Recall Period | Subtract end time of 20-30 minute SRT recall period from start time | IF XXSRT241=, OR XXSRT242=., YxSRTMIN=. | Minutes |

| Variable | General Description | Detailed Description | How variable is calculated | How to handle missing or special values | Value labels |
|-----------|------------------------|---|---|---|--------------|
| YxCES_D10 | CES-D short form score | CES-D short form score calculated according to Andreson, E.M. and Malmgren, J.A. (1994). Screening for depression in well older adults: evaluation of a short form of the CES-D | <ol style="list-style-type: none"> For the following variables, use the following to convert the score: 1(rarely)=3, 2(some of time)=2, 3(much of time)=1, 4(most of time)=0: xxFHOPE, xxFHAPPY For the remainder of the variables, use the following conversion 1(rarely)=0, 2(some of time)=1, 3(much of time)=2, 4(most of time)=3 Sum the score of the 10 items. (max=30, min=0) | <p>If any item is answered 8(Don't know) or 7 (Refused), set that item to missing.</p> <p>For 1-4 missing items, assign the average score of the answered items to the missing items. If >4 items are missing, YxCES_D10 is missing.</p> | unitless |

Analyst note: Although the range for the CES_D10 (short form) score is exactly half that of the CES_D (long form) score, there is no general agreement about how the scores compare. That is, there is not general agreement that the former can simply be doubled to make it analogous to the latter.

| Variable | General Description | Detailed Description | How variable is calculated | How to handle missing or special values | Value labels |
|-----------------|---|---|-----------------------------------|--|---------------------|
| YxDSS | Number of digit symbol substitutions correctly made | Number of digit symbol substitutions correctly made | xxNC-xxNI | If either xxNC or xxNI is missing, YxDSS=.M If both are missing, YxDSS=.M. If xxNC<xxNI, YxDSS=.M | substitutions |

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| Variable | General Description | Detailed Description | How variable is calculated |
|-----------|--------------------------------------|---|---|
| YxMMMFLAG | Flag for possible invalid 3MS scores | Flag showing that one or more items were missing or marked "not att/disabled" with a disability marked in Q19. Investigators are cautioned to examine the component variables to determine whether to include ppt in analysis. | If any of the following variables is missing or marked "not att/disabled", YxMMMFLAG=1: xxBORNM, xxBORND, xxBORNY, xxSHRT, xxBLU, xxHON, xxCNTBK, xxSPWLD, xxSHRM, xxBLRM, xxHNRM, xx2DAY, xxDAYWK, xxSEAS, xxSTAT, xxCNTY, xxCITN, xxWHRE, xxFRHD, xxCHIN, xxSHLD, xxELB, xxKNK, xxE2SCR, xxARLG, xxLCRY, xxETSL, xxRPT, xxIF, xxAND, xxBUT, xxCRD1, xxWLD, xxLKE, xxTO, xxGO, xxOUT, xxPENT1, xxPENT2, xxINT, xxPCOR, xxPFLD, xxPHND, xxSH2, xxBLU2, xxHON2 Otherwise YxMMMFLAG=0 |

| General and Detailed Description | Variables Involved | Specific Instructions | How to handle missing or special values |
|--|---|---|--|
| <p>YxMMMScore</p> <p>3MS score on a 100-point scale using the method outlined in Teng (J Clin Psychiatry, 1987: 48: 314-318) and made to match CHS scoring as much as possible</p> | <p>xxBORNm-- xxBORNy</p> <p>XXSHRT-- XXHON</p> <p>XXCNT-- XXCNTBK</p> <p>XXSPL-- XXSPWLD</p> <p>XXSHRM-- XXHNRM</p> | <p><u>Date/Place of Birth:</u> Use data DOB as correct birthdate. One point each for XXBORNm, XXBORND, XXBORNy. Other responses score 0.</p> <p><u>Register 3 words:</u> Score 1 point for each correct response, (Correction for incorrect scoring of <u>first</u> response: if XXshrt=1 and XXblu=1 and XXhon=1 and XXnum>1 then do; if XXnum=2 subtract 1; else if XXnum=3 subtract 2; else if XXnum>=4 subtract 3;)</p> <p><u>Mental Reversal:</u></p> <p>Counting backwards. If participant cannot count forward (XXCNT=2) then score 0. If all correct (XXCNTBK= 54321) then score 2. If one or 2 digits out of place, score 1. Else score 0.</p> <p>Spelling backwards. If participant unable to spell WORLD (XXSPL=2) then score 0. WHIMS algorithm used to score C2SPWLD³.</p> <p><u>First Recall:</u> 1(spontaneous recall)=3 points, 2(correct word/incorrect form)=3 points, 3(after 1st prompting)= 2 points, 4(after 2nd prompting)= 1 point 7=0 points. Not attempted/disabled (6) scores 0.; Note: Teng does not have score for correct word/incorrect form</p> | <p>7(error/refused) or 3(not att/disabled) score 0.</p> <p>N/A</p> <p>N/A</p> <p>Not attempted/disabled (6) scores 0</p> |

³ Available from the Coordinating Center on request

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| YxMMMSCORE (cont) | XXDAYWK— XXSEAS | <u>Temporal Orientation</u> : XXSEAS 1=1 point, 7=0 points, 3(not attempted/disabled)=0 points. XXDAYWK 1=1point 7=0 points, 3=0 points <i>Note: TENG allows 1 point for season within 1 month, but this was not recorded.</i> | 7(error/refused) or 3(not att/disabled) score 0. |
| | XX2DAY | <u>Temporal Orientation</u> : XX2DAY compared to XXDATE2, which has been verified against XXDATE (questionnaire date) and XXDATE2 (which occasionally differs from each other due to examiner error) and then the larger of the two possible subscores used Year—correct = 8 points Year—within 1 = 4 points, within 2-5=2 points; else = 0 points Month—within 5 days=2 points Month -- within 6-30 days 1 point, else 0 points. Day—correct=3 points. Day—within 1-2 days=2 points. Day—within 3-5 days=1point, else 0 points. | N/A |
| | XXSTAT— XXWHRE | <u>Spatial Orientation</u> : For each item a correct response (1) scores 1 point (except state, which scores 2 points), and incorrect response (7) scores 0 and not attempted/disabled (3) scores 0 | 7(error/refused) or 3(not att/disabled) score 0. |
| | XXFRHD— XXKNK | <u>Naming</u> : For each item a correct response (1) scores 1 point, and incorrect response (7) scores 0 and not attempted/disabled (3) scores 0 | If XXPENC=3 & XXWTCH=3 & XXFRHD=3 & XXCHN=3 & XXSHLD=3 & XXELB=3 & XXKNK=3 set them all to missing, otherwise, 7(error/refused) or 3(not att/disabled) |

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| YxMMMScore (cont) | XXE2SCR | <u>Naming animals:</u> Number of points is equal to XXSCR, to a maximum of 10 points. | score 0. N/A |
| | XXARLG— XXETSL | <u>Similarities:</u> Correct answer (1) scores 2 points, lesser correct (2) scores 1 point, error/refused (7) scores 0 points, not attempted/disabled (3) scores 0 | 7(error/refused) or 3(not att/disabled) score 0. |
| | XXRPT | <u>Repetition:</u> Correct (1) scores 2 points Miss 1 or 2 (2) scores 1 point. Incorrect (7) scores 0 point. Not attempted/ disabled (3) scores 0 | 7(error/refused) or 3(not att/disabled) score 0. |
| | XXIF—XXBUT | Correct (1) scores 1 point Error/refused (7) scores 0 point Not attempted/disabled (3) scores 0 | 7(error/refused) or 3(not att/disabled) score 0. |
| | XXCRD1 | <u>Read and obey:</u> Correct (1) scores 3 points After Prompting (2) scores 2 points Reads, does not close eyes (3) scores 1 point Incorrect (7) scores 0 points Not attempted/disabled (5) scores 0 | If XXCRD1=5 then XXCRD1=.; *n=16; otherwise 7(error/refused) or 5(not att/disabled) score 0. |

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|-----------------------|--|---|
| YxMMMPHONE | Teng 3MS score, administered by phone | For 3MS exams administered by phone, calculated exactly as above, except score is not pro-rated for missing points |
| YxMMMIMP ⁴ | Imputed 3MS score, administered by phone | If 3MS was administered by phone, $YxMMMIMP = YxMMMPHONE / (100 - \text{missing points})$ if >40 points missing, then $YxMMMIMP = .E$ (26 points are automatically missing if administered by phone; >40 represents 20% missing over and above those 26) |

⁴ There are no data indicating that MMMIMP can be considered to measure the same thing as MMMScore; this value is merely provided as a convenience