



**Diabetes Prevention Program  
Outcomes Study Phase 3  
(DPPOS-3)**

**Telephone Interview for  
Cognitive Status (TICS) Manual  
Version 1.0**

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Prepared by the DPPOS Data Coordinating Center

The George Washington University Biostatistics Center  
6110 Executive Boulevard, Suite 750  
Rockville, MD 20852

Telephone: (301) 881-9260

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*Manual adapted from the TICS Telephone Interview for Cognitive Status Professional Manual (see References for more information)*

## 1. Background and Rationale

The Telephone Interview for Cognitive Status (TICS) is a brief, standardized test of cognitive functioning that is designed to be administered over the telephone. It is intended for use in situations where in-person cognitive screening is impossible or impractical.

The TICS is composed of 11 test items and usually takes less than 10 minutes to administer and score. Among elderly community residents, TICS scores approximate a normal distribution and are not subject to ceiling effects, a limitation of many mental status examinations. The TICS correlates highly with the Mini-Mental State Examination (MMSE; Folstein, Folstein, and McHugh, 1975); it has high test-retest reliability, and its sensitivity and specificity for the detection of cognitive impairment are excellent.

## 2. Certification

### 2.1 Training requirements

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The examiner requires no special qualifications or prior experience to perform this assessment. However, the examiner should be familiar with the material presented in this manual, or trained and supervised by one.

Training should include:

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

### 2.2 Certification requirements

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- 1) Complete training requirements
- 2) Explain how to score a question if:
  - a. Participant has a hearing limitation, making task impossible
  - b. Participant has cognitive limitation
  - c. Participant does not respond or can't remember
  - d. Participant answers correctly but not within time allotted
- 3) Complete a mock TICS administration over the phone to QC officer, please allow 30 minutes.
  - a. Email Danurys Sanchez to schedule appointment (dls167@cumc.columbia.edu)
  - b. Complete one full TICS administration over phone and complete Q27 with TICS scoring sheet
  - c. Email completed sample form to Danurys Sanchez (dls167@cumc.columbia.edu) and copy Dr. Jose Luchsinger (jal94@cumc.columbia.edu)

- d. Danurys Sanchez will send pass/fail notification to clinic staff. If there are errors, then additional calls will be scheduled to discuss errors. Clinic staff may be required to complete additional mock phone administrations.
- 4) Clinics should review manual monthly or as needed to maintain certification.

### 2.3 Quality assurance checklist

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As part of Certification, examiners should use the Quality Assurance Checklist in Section 6 as a guide to ensure accurate and consistent administration of the examination.

## 3. Equipment and Supplies

- Pen
- Clock or watch (to record start and stop time)
- Q27 Telephone Interview for Cognitive Status Cover Sheet and TICS form

## 4. Detailed measurement procedures

### 4.1 General issues

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Although the TICS is simple to administer and score, examiners should be well practiced. Ideally, they should be native English speakers; any variance in pronunciation due to foreign accents should be minimal. Examiners should speak clearly and articulate distinctly. The examiner should ascertain the examinee's ability to hear spoken language at a conversational volume, as well as the street address where they are located. The room where the examinee will be interviewed should be quiet and free from distractions. In administering the TICS, the following guidelines should also be taken into consideration.

- 1) Before speaking with the participant, the examiner should speak with a proxy or person other than the participant at the same location as the participant. This person (the "proctor") must make sure the environment is appropriate for testing:
  - a. The participant is capable to hear spoken language at a conversational volume.
    - i. To test the auditory environment and the participant's ability to hear spoken language at a conversational level, have the participant repeat a few statements or sentences prior to beginning the test:

**JUST TO MAKE SURE I AM SPEAKING CLEARLY AND YOU CAN HEAR ME  
CORRECTLY, PLEASE REPEAT THESE PHRASES EXACTLY AS I SAY THEM TO YOU.**

**I GOT HOME FROM WORK.**

**LLEGUE A CASA DEL TRABAJO.**

**NEAR THE TABLE IN THE  
DINING ROOM.**

**AL LADO DE LA MESA EN EL COMEDOR.**

*Adapted from the Boston Diagnostic Aphasia Examination (BDAE) Repeating Phrases.*

- b. The room where the participant will be interviewed should be quiet and free from distractions.
  - c. Ideally, no one other than the proctor should be present.
- 2) In general, the examinee's answers should precisely match the given scoring criteria. If a precise answer is not given, the examiner should probe for the correct response. For example, if the examinee's response to "What animal does wool come from?" (Question 7) is "a ram" or "ewe" the examiner should say, "Is there another name for that?"
- 3) Reasonable judgment should be exercised regarding allowing the examinee sufficient time to answer a question before proceeding on to the next question.
- 4) If an examinee changes an incorrect response to a correct response at any time during the TICS administration session, credit should be given for the new correct response.
- 5) If an examinee changes a correct response to an incorrect response at any time during the TICS administration session, the new response should be recorded and credit should not be given.

#### 4.2 Instructions to the Examiner

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- 1) Prior to the TICS administration, examiners should ensure they have all of the participant's personal information (i.e. full name, address, etc.) available to verify the correctness of the participant's responses.
- 2) Examiners should ensure that they have a TICS Record Form available. The Spanish translation script of the TICS form should be used for Spanish speaking participants.
- 3) Only the participant ID should be written on the cover of the TICS form. All other visit or participant information should be entered on the first page of the Q27 Telephone Interview for Cognitive Status (TICS) Cover Sheet.
- 4) All participant responses should be recorded verbatim in the spaces provided on the TICS Form. Information should not be written in the margins or on the back of the TICS form.

#### 4.3 Other scoring issues

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The TICS examination asks the participants to provide information and to perform specific tasks as instructed by the examiner to assess cognitive function.

- 1) If you cannot determine how to code the response, record notes on the source document so that the scoring can be reviewed later. Bring ambiguities to the attention of the clinic quality control officer.
- 2) Score response as incorrect if the task is not successfully completed for any reason. This includes errors due to cognitive dysfunction, refusals when no hearing disability is present, lack of response, or the participant says they can't remember.

- 3) Let the participant attempt all tasks unless you determine that the participant cannot do the task. In these cases, score the question as incorrect. This includes instances in which you perceive:
- a. the participant is unable to do the task;
  - b. the participant appears to be experiencing excess stress; or
  - c. no response is received from the participant after a reasonable time period.

## 5. Administration

### 5.1 Instructions to the Proctor

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When the examiner has the proctor on the telephone, the following instructions should be given:

**Say to proctor, "IN A COUPLE OF MINUTES, I AM GOING TO BE ASKING [PARTICIPANT'S NAME] A NUMBER OF DIFFERENT QUESTIONS TO TEST [HIS/HER] THINKING AND MEMORY. BEFORE WE START, I NEED TO ASK YOU WHETHER THE ADDRESS I HAVE FOR YOUR CURRENT LOCATION IS CORRECT. PLEASE DON'T REPEAT IT OUT LOUD IF [PARTICIPANT'S NAME] IS IN THE ROOM WITH YOU, SINCE I WILL BE ASKING [HIM/HER] THE SAME QUESTION IN A FEW MINUTES. IS YOUR CURRENT ADDRESS [PARTICIPANT'S ADDRESS]?"**

If the answer is "no," ask the proctor either to step in to another room before giving you the correct address or to have the participant leave the room briefly before giving you the address.

**Say to proctor, "PLEASE BE SURE THAT ALL PAPERS, PENCILS, BOOKS, CALENDARS, NEWSPAPERS, AND EVERYTHING ELSE THAT MIGHT PROVIDE DISTRACTION OR VISUAL CUES ARE REMOVED FROM [PARTICIPANT'S NAME] SIGHT. ALSO, PLEASE BE SURE THAT THE ROOM IS QUIET; THERE SHOULD BE NO TELEVISION, RADIO, OR MUSIC PLAYING."**

**"SOME OF THE QUESTIONS MAY BE DIFFICULT FOR [PARTICIPANT'S NAME] TO ANSWER. [HE/SHE] MAY ASK YOU FOR HELP. IF [HE/SHE] DOES, JUST ENCOURAGE [HIM/HER] TO DO AS WELL [HE/SHE] CAN. [HE/SHE] SHOULD GUESS IF NECESSARY. PLEASE DO NOT GIVE [HIM/HER] ANY ANSWERS OR HINTS. OK? IF YOU AND [PARTICIPANT'S NAME] ARE READY, PLEASE PUT [HIM/HER] ON THE PHONE."**

### 5.2 Instructions to the Participant

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When the examiner has the participant on the telephone, the following instructions should be given:

**Say to the participant, "I AM GOING TO ASK YOU SOME QUESTIONS TO TEST YOUR MEMORY. SOME OF THESE ARE LIKELY TO BE EASY FOR YOU, BUT SOME MAY BE DIFFICULT. PLEASE BEAR WITH ME AND TRY TO ANSWER ALL THE QUESTIONS AS BEST YOU CAN. IF YOU CAN'T ANSWER A QUESTION, DON'T WORRY. JUST TRY YOUR BEST. ARE YOU READY?"**

These instructions may be repeated verbatim or paraphrased, if necessary. For each of the TICS items, except Questions 5 and 8, single repetitions are permitted. When the participant is ready, begin administering the TICS items according to the following instructions.

Record the start time on the Q27 TICS Cover Sheet.

### 5.2.1 Orientation to name

**Say to the participant, "PLEASE TELL ME YOUR FULL NAME."**

Score 1 point for the correct first name (or nickname) and 1 point for the correct last name.

The maximum score is 2 points.

### 5.2.2 Orientation to time

**Say to the participant, "What is today's date?"**

Score 1 point each for correct month, date, year, day of the week, and season. Probe for any of these that are not provided spontaneously (e.g. "WHAT DAY OF THE WEEK IS IT?" or "WHAT SEASON IS IT?") Precisely correct answers are required (e.g., a hot day in early June is not summer).

The maximum score is 5 points.

### 5.2.3 Orientation to place

**Say to the participant, "WHERE ARE YOU RIGHT NOW?"**

Score 1 point each for correct house number, street, city, state, and zip code. If any of these are not given spontaneously, probe (e.g., "WHAT NUMBER IS THAT?" or "WHAT IS YOUR ZIP CODE?" – 5-digit zip code is sufficient). If the examinee is in a facility with no house number (e.g., a hospital or nursing home), the name of the facility may be substituted for the house number.

The maximum score is 5 points.

### 5.2.4 Counting backward from 20 to 1

**Say to the participant, "PLEASE COUNT BACKWARD FROM 20 to 1."**

If the participant makes an error on Trial 1, ask them to try again. Score 2 points if completely correct on first trial or 1 point if correct on second trial. Score 0 points if there are any errors on the second trial.

The maximum score is 2 points.

### 5.2.5 Remembering a word list

**Say to the participant, "I AM GOING TO READ YOU A LIST OF 10 WORDS, PLEASE LISTEN CAREFULLY AND TRY TO REMEMBER THEM. WHEN I AM DONE, TELL ME AS MANY OF THE WORDS AS YOU CAN, IN ANY ORDER. READY? THE WORDS ARE (pause) CABIN, PIPE, ELEPHANT, CHEST, SILK, THEATER, WATCH, WHIP, PILLOW, GIANT. (pause) NOW TELL ME ALL THE WORDS YOU CAN REMEMBER."**

The words should be read at approximately one word every 2 seconds. No repetitions of the word list are permitted by the examiner.

Score 1 point for each correctly recalled word. Score 0 points for incorrect responses (e.g., repetitions of list words, intrusions of words not on the list).

The maximum score is 10 points.

### 5.2.6 Serial 7 subtractions

**Say to the participant, "I WOULD LIKE YOU TO TAKE THE NUMBER 100 AND SUBTRACT 7."**  
(Pause for a response) **"NOW KEEP SUBTRACTING 7 FROM THE ANSWER UNTIL I TELL YOU TO STOP."**

No further prompts or instructions are given, except to "keep going." Stop the examinee after five serial subtractions.

Do not inform the participant of incorrect responses. Score 1 point for each correct subtraction, even if the subtraction was from a previously incorrect response. For example, "93, 85, 78, 71, 65" would be awarded 3 points.

The maximum score is 5 points.

### 5.2.7 Naming to verbal description

**Say to the participant, "WHAT DO PEOPLE USUALLY USE TO CUT PAPER?"** (Pause for a response)

Score 1 point for "scissors" or "shears."

**Say to the participant, "HOW MANY THINGS ARE IN A DOZEN?"** (Pause for a response)

Score 1 point for "12."

**Say to the participant, "WHAT DO YOU CALL THE PRICKLY GREEN PLANT THAT LIVES IN THE DESERT?"** (Pause for a response)

Score 1 point for "cactus."

**Say to the participant, "WHAT ANIMAL DOES WOOL COME FROM?"** (Pause for a response).

If a participant answers "a ram" or "ewe" the examiner should say, "Is there another name for that?"

Score 1 point for "Sheep" or "lamb."

The maximum score is 4 points.

### 5.2.8 Repetition

**Say to the participant, "PLEASE REPEAT THIS AFTER ME: 'NO IFS, ANDS, OR BUTS.'" (Pause for a response) NOW, PLEASE REPEAT THIS AFTER ME: 'METHODIST EPISCOPAL.'"**



No repetitions of the phrase by the examiner are permitted.

Score 1 point for each correct repetition.

The maximum score is 2 points.

### 5.2.9 Recent memory

**Say to the participant, “WHO IS THE PRESIDENT OF THE UNITED STATES RIGHT NOW? (Pause for a response) WHO IS THE VICE-PRESIDENT?”**

Score 1 point for current president’s full (i.e., first and last) name. Score 1 point for current vice-president’s full (i.e., first and last name. If only the last name is given, probe for the full name. The participant must provide both first and last name in order to receive credit for each question.

The maximum score is 2 points.

### 5.2.10 Praxis

**Say to the participant, “WITH YOUR FINGER, TAP FIVE TIMES ON THE PART OF THE PHONE YOU SPEAK INTO.”**

If the TICS is being administered in person (e.g., to a visually impaired person), the participant should be asked to tap on the table rather than on a telephone receiver.

Score 2 points if five taps are clearly heard, 1 point if either more than or fewer than five taps are heard, and 0 points if no taps are heard.

The maximum score is 2 points.

### 5.2.11 Opposites

**Say to the participant, “I AM GOING TO SAY A WORD AND I WANT YOU TO GIVE ME ITS OPPOSITE. FOR EXAMPLE, IF I SAID ‘HOT,’ YOU WOULD SAY ‘COLD.’ WHAT IS THE OPPOSITE OF WEST?” (Pause for a response)**

Score 1 point for “east.”

**Say to the participant, “WHAT IS THE OPPOSITE OF GENEROUS?”**

Score 1 point for “cheap,” “stingy,” “tight,” “selfish,” “greedy,” “mean,” “meager,” or other correct antonym.

The maximum score is 2 points.

### 5.2.12 Conclusion of Examination

Record the stop time on the Q27 TICS Cover Sheet.

When the interview is completed, thank the participant without offering specific feedback on their performance.

### **5.3 After the Test**

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To obtain the TICS Total score, sum the number of points obtained for each of the 11 questions. A maximum of 41 points may be obtained. The examiner should exercise care to ensure that the appropriate number of points is awarded for each answer and that the addition is done correctly.

#### **5.3.1 Data entry in MIDAS**

When data entering the results in MIDAS, the TICS total score will be automatically calculated from the individual question scores. The manually calculated score will not be data entered.

## 6. Appendix

### 6.1 Quality Assurance Checklist

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- Exam performed in quiet, private area without interruptions
- Correct instructions given in clear, slow speaking voice
- Start time recorded
- Participant asked for full name
- Today's date asked for, including month, day, year, day of the week, and season, with probes, if necessary
- Participant asked where they are now, with probes (house number, street, city, state, and zip code), if necessary
- Participant asked to count backwards from 20; numbers ticked off on form
- List of words read at approximately one word every 2 seconds
- Participant instructed to tell all words they can remember from list read to them and words scored properly
- Correct instructions given to participant for taking the number 100 and subtracting 7
- Correct number of correct responses recorded
- Participant asked what people do to cut paper
- Participant asked how many things are in a dozen
- Participant asked what the prickly green plant that lives in the desert is called
- Participant asked what animal wool comes from
- Individual words and "s's" in phrase "NO IFS..." clearly enunciated
- Individual words "Methodist Episcopal" clearly enunciated
- Participant asked who the President of the United States is right now
- Participant asked who the Vice-President of the United States is right now
- Participant asked to tap five times on the part of the phone you speak into (or a hard object nearby)
- Participant asked what is opposite of West
- Participant asked what is opposite of generous
- Stop time recorded
- Responses correctly summed (QC officer should independently fill out scoring sheet)
- Reviews form for completeness
- Correctly completes form

## 7. References

Jason Brandt and Marshal F. Folstein, Telephone Interview for Cognitive Status™: Professional Manual.

Harold Goodglass, PhD, Edith Kaplan, PhD, ABPP/CN, and Barbara Barresi, PhD, Boston Diagnostic Aphasia Examination