

# CALCAP TEST MATERIALS

The CALCAP battery is available in Standard (20-25 mins) and Abbreviated (8-10 mins) versions, or can be customized to meet specific clinical or research needs. Final scoring and intermediate feedback are available using age- and education-specific norms based on 641 men, ages 21 to 58.

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## Standard Edition

Test Duration: 20-25 minutes

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The Standard program drivers for the CALCAP program were developed by Eric N. Miller, Ph.D. and Paul Satz, Ph.D. The stimulus materials assess a broad range of cognitive functions, including brief, sustained and divided attention, rapid visual scanning, form discrimination and language skills:

- C *Simple Reaction Time.* Subjects are asked to press a key as soon as they see anything at all on the screen. This procedure provides a basal measure of reaction time. This task is given at the beginning, middle and end of the computerized procedures to allow the examiner to assess fatigue effects.
- C *Choice Reaction Time for Single Digits.* Subjects are asked to press a key as soon as they see a specific number such as '7', otherwise they are to do nothing. This procedure adds a simple element of memory to the task.
- C *Serial Pattern Matching (Sequential Reaction Time).* Subjects are asked to press a key only when they see two of the same number in sequence, for example, if they see the number '3' followed by a second occurrence of the number '3'. This procedure adds a more complex element of memory since the subject must keep in mind the last number that was seen.
- C *Lexical Discrimination.* Subjects are asked to press a key when they see a word which fits into

a specific category such as animal names (such as, 'COW' or 'HORSE'), but not when they see a word which fits into a category of non-animals (such as 'DESK' or 'FOOD'). This procedure introduces an additional level of language skills by requiring meaningful differentiation between semantic categories. The task requires rapid language processing and should be sensitive to any disruption in language skills.

- C *Visual Selective Attention.* Subjects are asked to press a key as soon as they see a specific word such as 'SEVEN' in the center of the screen. An additional set of the words are displayed around the periphery of the target stimulus located in the center of the screen. These distractors require that the subject focus his or her attention much more narrowly.
- C *Response Reversal and Rapid Visual Scanning.* This task is identical to task 5 described above, but the subject must ignore the stimuli presented in the middle of the screen while responding to target stimuli displayed around the periphery of the computer screen. This task taps into the subject's ability to change cognitive set from the previous task, and requires more rapid visual scanning across the entire display screen.
- C *Form Discrimination.* Subjects are shown three geometric figures simultaneously and asked to press a key only when two of the figures are identical. This task requires rapid comparison of non-nameable forms, and, because of the brief exposure time, may measure the subject's ability to retain an iconic memory of the figures.

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## Abbreviated Version

Test Duration: 8-10 minutes

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The Abbreviated version of the CALCAP provides a very brief screening battery using a subset of the most sensitive measures from the Standard edition. This test battery is ideally suited for collecting reliable information on psychomotor functioning in a brief period of time, and can be used effectively for assessing changes over time. The task entitled Serial Pattern Matching 2 is new and is designed to be even more sensitive to subtle cognitive deficits than Serial Pattern Matching 1.

- C *Simple Reaction Time.* Subjects are asked to press a key as soon as they see anything at all on the screen. This procedure provides a basal measure of reaction time.
- C *Choice Reaction Time for Single Digits.* Subjects are asked to press a key as soon as they see a specific number such as '7', otherwise they are to do nothing. This procedure adds a simple element of memory to the task.
- C *Serial Pattern Matching 1 (Sequential Reaction Time 1).* Subjects are asked to press a key only when they see two of the same number in sequence, for example, if they see the number '3' followed by a second occurrence of the number '3'. This procedure adds a more complex element of memory since the subject must keep in mind the last number that was seen.
- C *Serial Pattern Matching 2 (Sequential Reaction Time 2).* Subjects are asked to press a key only when they see two numbers in sequence (increasing order). For example, if they see the number '3' followed by the number '4', the number '6' followed by '7' and so on.

Normative data for these tasks are available using age- and education-specific norms based on 656 men between the ages of 21 and 72.

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## Mini Version

Test Duration: 4-5 minutes

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A "Mini" version of the CALCAP was developed for clinical research protocols where testing time is extremely limited. This "Mini" version consists of the first two choice reaction time tasks from the Abbreviated reaction time task. There is no Simple Reaction Time procedure.

- C *Choice Reaction Time for Single Digits.* Subjects are asked to press a key as soon as they see a specific number such as '7', otherwise they are to do nothing. This procedure adds a simple element of memory to the task.
- C *Serial Pattern Matching 1 (Sequential Reaction Time 1).* Subjects are asked to press a key only when they see two of the same number in sequence, for example, if they see the number '3' followed by a second occurrence of the number '3'. This procedure adds a more complex element of memory since the subject must keep in mind the last number that was seen.

The normative data for these tasks are the same as those used for the Abbreviated test battery, and include age- and education-specific norms based on 656 men between the ages of 21 and 72.

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## Customized Versions

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The CALCAP routines can be special ordered to include any of the simple and choice reaction time measures described above. This flexibility allows researchers and clinicians to customize the CALCAP for specific needs that may not be met by the Standard and Abbreviated versions of the CALCAP.