

# Mini - Addenbrooke's Cognitive Examination (Mini-ACE) New Zealand Versions - 2020

## Administration and Scoring Instructions

The Mini - Addenbrooke's Cognitive Examination (Mini-ACE) is a brief and sensitive cognitive screening tool for mild cognitive impairment and dementia. It is vital to comply with the instructions in this Guide for every Mini-ACE assessment.

Acknowledgement: We would like to acknowledge the Strategy, Primary and Community Directorate, Southern DHB for its work in developing this booklet.

# Using the Mini-Addenbrooke's Cognitive Examination (Mini-ACE)

***The score is not diagnostic by itself. It should always be interpreted in light of other clinical information. If in doubt, seek specialist advice.***

## Background

The Mini-ACE is now the recommended cognitive test for use by New Zealand primary care and general secondary care services as part of a dementia assessment because it is well-validated, it covers several cognitive areas, it is acceptable to people, and it is freely available. It is an assessment tool to be used as part of a comprehensive assessment. It is not to be used by itself to:

- make a diagnosis,
- determine fitness to drive,
- assess competency,
- decide about safety to live independently, or
- determine access to therapeutic interventions (such as medication or Cognitive Stimulation Therapy (CST) where this service is available).

## Pre-test administration guidelines

- Ensure you have completed training to administer the Mini-ACE. This is available on <https://www.nzdementia.org/Mini-ACE>
- Ensure you have practised administering the Mini-ACE so you are confident to use it in a clinical setting.
- Make sure you are familiar with this guide and follow it closely whilst administering the test.
- Check the reason for testing to ensure that using this test can realistically assist you, given the particular clinical situation. For example, don't use this test to inform a dementia assessment when someone has a delirium or another illness that might temporarily impair their performance.
- Ideally, complete the test in a quiet environment with good lighting, when the person being assessed is most alert – preferably in the morning.
- Ensure the person being assessed has their glasses and/or hearing aids if required.
- If repeat testing is required to track progress within three months, learning effects can be reduced by using one of two alternative versions available on <https://www.nzdementia.org/Mini-ACE>
- The Mini-ACE is available in different languages for use with an appropriately trained interpreter. These versions are available on <https://www.nzdementia.org/Mini-ACE>.

## Several variables might negatively impact on a person's performance:

- Age – on average, people in the oldest age groups have reduced performance.
- Sensory impairments and receptive or expressive dysphasia.
- Impairment of use of the dominant hand (such as from hemiparesis).
- Depression, anxiety, and psychosis can negatively affect performance.
- Significantly lower levels of education levels or an intellectual or learning disability.
- The first language of the person being tested is not English.

## Post-test guidelines

- Carefully follow the guide when scoring the test (especially the clock drawing and animals tasks).
- Record any limitations affecting interpretation on the test paper.
- Fill in date / time / tester details.

## New Zealand Mini-ACE Administration and Scoring Guide – 2020

The Mini-Addenbrooke's Cognitive Examination (Mini-ACE) is a very brief and sensitive cognitive screening tool for mild cognitive impairment and dementia. The total Mini-ACE score is 30, with higher scores indicating better cognitive functioning. Administration of the Mini-ACE takes, on average, 5 minutes. It was derived from the Addenbrooke's Cognitive Examination-III (ACE-III) using a data-driven scaling method. There are 2 cut-offs: 25 and 21. The latter is recommended when the test is used with general clinical populations as part of a dementia assessment.

These instructions have been designed in order to make the questions and their scoring clear for the tester. Please read them carefully before giving the test. If possible, leave the scoring until the end of the session, since the participant will not be able to check whether the tester is ticking for correct answers or crossing for wrong ones. This might avoid anxiety, which can disturb the participant's performance on the test.

To download the Mini-ACE English and other language versions and to access this guide, visit <https://www.nzdementia.org/Mini-ACE>

### ATTENTION – Orientation – score 0 to 4

**Administration:** Ask the participant for the day, date, month, and year.

**Scoring:** Score 1 point for each correct answer. A mistake of  $\pm 2$  days is allowed for the date (e.g., 5<sup>th</sup> when the actual date is the 7<sup>th</sup>). If the participant says "23<sup>rd</sup> of the 3<sup>rd</sup>", then prompt for the name of the month.

*For people with an expressive dysphasia:* Allow the person to write down their answer if s/he is unable to give verbal responses.

### MEMORY – Anterograde Memory – Name and Address – score 0 to 7

**Administration:** Instruct the participant: "I'm going to give you a name and address and I'd like you to repeat the name and address after me. So you have a chance to learn, we'll be doing that 3 times. I'll ask you the name and address later." If the participant starts repeating along with you, ask them to wait until you give it in full. Please note that version A, B & C of the test have different addresses.

**Scoring:** Record responses for each trial but only responses from the third trial contribute to the Mini-ACE score (0 - 7 points).

### VERBAL FLUENCY – Animal Naming – score 0 to 7

**Administration:** Tell the participant: "Now can you name as many animals as possible."

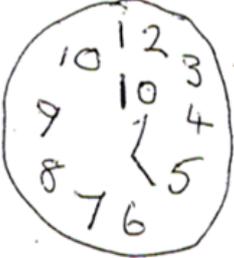
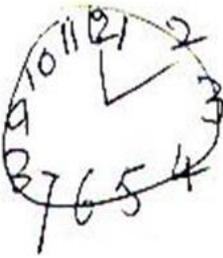
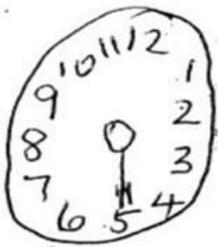
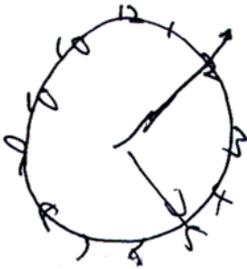
**Scoring:** Record the total number of animals that the person generates. Then, count the total number of correct words, not including higher order categories when specific exemplars are given (e.g., "fish" followed by "salmon" and "trout" – total = 3; correct = 2). All types of animals are accepted, including insects, humans, prehistoric and extinct animals, as well as mythical creatures (e.g., unicorn).

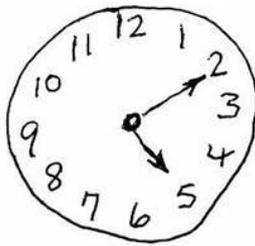
**VISUOSPATIAL ABILITIES – Clock Drawing – score 0 to 5**

**Administration:** Ask the person being tested to draw a clock face with numbers on it. When s/he has finished, ask them to put the hands at “ten past five”. If the participant does not like their first drawing and would like to do it again, you can allow that and score the second clock. Participants may also correct their mistakes by erasing them while drawing.

**Scoring:** The following scoring criteria are used below to give a total of 5 points.

<b>Circle</b>	1 point maximum if it a reasonable circle.
<b>Numbers</b>	2 points if all numbers are included within the circle and numbers are evenly distributed. A slight rotation to the overall clock face is acceptable. 1 point if all numbers are included but the numbers are either outside of the circle or the numbers are unevenly spaced. 0 points if not all numbers are included.
<b>Hands</b>	2 points if both hands are drawn, lengths are correct and placed on correct numbers (you can ask which one is the small and which is the big one if you are unsure). 1 point if both hands are drawn and placed on the correct numbers but lengths are incorrect. 1 point if both hands are drawn but only one hand is placed on the correct number and drawn with correct length. 0 points if two hands are drawn but both lengths incorrect and one number is correct. 0 points if two hands are drawn but both lengths and numbers are incorrect. 0 points if one hand is drawn

<b>Score 1</b>	<b>Score 2</b>	<b>Score 2</b>
Circle (1); not clear that all numbers are present (0); not clear where the hands are positioned (0)	Circle (1); all numbers not present (0); one hand placed on the correct number and has the correct length (1)	Circle (1); all the numbers but not placed inside the circle (1); no hands (0)
		
<b>Score 2</b>	<b>Score 3</b>	<b>Score 3</b>
Circle (1); all the numbers but not placed inside the circle (1); two hands with one number correct but lengths are even (0)	Circle (1); all the numbers present and proportionally distributed (a slight rotation of the whole clock face is OK) (2); one hand only (0)	Circle (1); numbers are not inside the circle and there are two number 10s (0); hands placed correctly and correct lengths (2)
		

<p><b>Score 3</b></p> <p>Circle (1); numbers are unevenly spaced (1); one hand placed correctly and has the correct length (1)</p> 	<p><b>Score 4</b></p> <p>Circle (1); all numbers present but not proportionally distributed (1); both hands placed correctly and person correctly indicated which hand was which (2)</p> 	<p><b>Score 4</b></p> <p>Circle (1); numbers are proportionally distributed (2); one hand placed correctly and has the correct length (1)</p> 
<p><b>Score 5</b></p> <p>Circle (1); numbers proportionally distributed on both halves of the clock face (2); hands placed correctly (2)</p> 		

**MEMORY – Recall of Name and Address – score 0 to 7**

**Administration:** Say to the participant: “Now tell me what you remember of that name and address we were repeating at the beginning”.

**Scoring:** Score 1 point for each item recalled. Here, the Version A name and address is provided as an example:

**Harry Barnes  
73 Church Street  
Woodville  
Hawkes Bay**

**Example: 1**

<p>Harry Bond 78 Church Street Woodland ....</p>	<p>1 + 0 0 + 1 + 1 0 0</p>	<p><b>Score 3 / 7</b></p>
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**Example: 2**

<p>Harry Barnes 73 Woodville Street .... Hawkes Bay</p>	<p>1 + 1 1 + 0 + 1 0 1</p>	<p><b>Score 5 / 7</b></p>
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**Example: 3**

<p>Harry Bond 33 Woodland Road Woodville Bay Napier Hawkes Bay</p>	<p>1 + 0 0 + 0 + 0 0 + 0 0 1</p>	<p><b>Score 2 / 7</b></p>
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## GOOD PRACTICE CHECKLIST

- Testing environment (including lighting, visual and auditory aides) and tools were optimised for testing
- The person being tested gave informed verbal assent
- I have complied with the Mini-ACE administration and scoring guidelines
- I have documented results, test limitations, and any recommendations in the person's notes

***Please do not sign and file the Mini-ACE test until these points have been considered***

## NEXT STEPS

- Remember that the result always needs to be interpreted in the context of a full assessment.
- Consult the Cognitive Impairment Pathway to guide the formation of an appropriate and comprehensive management plan.
- Discuss results and plan with patient and their family / whānau.