

The Edinburgh Cognitive and Behavioural ALS Screen (ECAS)

Administration and Guidance Notes 2017

English Version B & C

The ECAS is a practical screening tool that incorporates a range of short cognitive tests that have been shown to be sensitive to cognitive impairment in ALS. Two alternate versions of the ECAS (B and C) have been developed for situations where repeated assessment is required. Specific guidance on the administration of ECAS A can be obtained at <http://ecas.psy.ed.ac.uk/> or by contacting s.abrahams@ed.ac.uk. **These guidelines provide additional information on Versions, B, and C. Unless otherwise stated, administration and scoring of Versions B and C are unchanged from Version A and the original guidelines should be used.**

Language – Naming: Score 0-8

Version B Scoring: One point is given for every correct name given. **Correct answers (left to right, top to bottom): Peacock, waistcoat, tractor, zebra, spanner/wrench, hedgehog, owl, tambourine.**

Version C Scoring: One point is given for every correct name given. **Correct answers (left to right, top to bottom): Ladybird, braces, caravan, deer, saw, octopus/squid, parrot, and saxophone.** Some items in ECAS-C have accepted alternatives. See table below.

ECAS-C	Accepted alternatives ECAS-C	Alternatives Not Accepted ECAS-C
Ladybird	Ladybug	Insect, beetle
Braces	Suspenders	Rope, letter M
Caravan	-	Trailer
Deer	Stag, Reindeer	Moose
Saxophone	-	Trumpet

Language – Comprehension: Score 0-8

Version B Scoring: One point is given for every correct name given. **Correct answers (left to right, top to bottom): Waistcoat, peacock, tambourine, tractor, spanner/wrench, hedgehog, tractor, zebra.**

Version C Scoring: One point is given for every correct name given. **Correct answers (left to right, top to bottom): ladybird, saw, parrot, caravan, braces, saxophone, saw, octopus.**

Note: If the participant incorrectly *names* an item in the previous section, but *identifies* the correct item with the wrong name in the comprehension section, score as correct. For example, in the ECAS-A if the participant names the Scorpion as 'Lobster' in the naming section, but answers 'Lobster' when asked "*Something with a sting*" in the comprehension section, score as correct. In this instance, the person does not know the name of the item but does comprehend what it is.

Memory – Immediate recall: Score 0-10

Version B Scoring: Score 1 point for each (either entire or part of) underlined section recalled.

Item	Accepted responses
Three	Only the correct number 'three' is accepted
Fishing boats	'Fishing' and/or 'boats'. If the participant correctly identifies one meaning of this item, score as correct e.g., 'fishermen' is accepted, as is 'sailing boats'.
Rescue	'Helped', 'rescue', or 'saved' are accepted
Whale	Only 'whale' or 'whales' are accepted
Shore	'Shore' or responses with similar meaning are accepted e.g., 'near the beach', or 'just off the coast' are accepted
Circles	Close synonyms or responses with similar meaning should be scored as correct e.g., 'the whales were going round and round'.
Alan Williams	Score correct if the participant identifies either 'Alan', or 'Williams' or both.
Marine conservation trust	Score correct if any part of 'marine conservation trust' is recalled verbatim. Accepted responses may be semantically similar, for example, 'animal', 'nature', or 'wildlife' for <i>marine</i> . Similarly, 'board', 'group' or 'council' may be accepted for <i>trust</i> .
Thirty-two	Only the exact number 'thirty-two' is accepted.
Last winter	'Last winter' or 'this winter' are accepted. 'Last Summer' or 'this year' should not be accepted.

Version C Scoring: Score 1 point for each (either entire or part of) underlined section recalled.

Item	Acceptable responses
Helen Blake	Either 'Helen' and/or 'Blake' is accepted.
Leeds	'Leeds' only.
Northern	'Northern' or 'north' only.
Prize	'Prize', 'award', or 'competition' accepted.
Photography	'Photography', 'photographs', 'photographer'.
Forty-seven	'Forty-seven' only.
Hiking	'Walking in the country' is accepted, whereas just 'walking' is not.
Seven hundred	'Seven hundred' only.
Oak tree	'Oak', or 'oak tree' is accepted.
Autumn	'Autumns colours', 'Autumn leaves', 'autumnal' or just 'autumn' are accepted. 'Golden leaves' is not accepted.

Language – Spelling: Score 0-12

Administration: Say "Spell, either by writing or speaking, the following words."

For Version B, it may be necessary to clarify item 12, 'thought'. If so, say: "I thought dinner was at eight o'clock". For Version C, It may be necessary to clarify item 12, 'wrote'. If so, say: "I wrote a letter".

Fluency - Letters S/F/P: Score 0-12

Instructions as in Version A.

Executive – Backward Digit Span: Score 0-12

Instructions as in Version A.

Executive – Alternation: Score 0-12

Instructions as in Version A.

Fluency - Letter T/D/M: Score 0-12

For Version C, ensure that the letter 'M' is said clearly to avoid the participant mishearing. It may be necessary on occasion to specify, for example, say: *"M' as in mother"*.

Visuospatial – Dot counting: Score 0-4

Instructions as in Version A.

Visuospatial – Cube counting: Score 0-4

Version B Scoring: One point for each correct answer. **Correct answers are top left 5, top right 6, bottom left 10, and bottom right 7.**

Version C Scoring: One point for each correct answer. **Correct answers are top left 5, top right 6, bottom left 8, and bottom right 7.**

Visuospatial – Number location: Score 0-4

Version B Scoring: one point for each correct answer. **Correct answers are top left 7, top right 8, bottom left 4, and bottom right 3.**

Version C Scoring: one point for each correct answer. **Correct answers are top left 1, top right 8, bottom left 5, and bottom right 7.**

Executive – Sentence completion: Score 0-12

Scoring (all versions): Give 2 points for completely unconnected word, 1 for related word (e.g., associated or opposite meaning) and 0 for exact word. See table below for scoring examples. Note: sentences can be ungrammatical.

VERSION B				
	Item	2 points	1 point	0 points
1	She answered the phone because it was...	Purple, dangerous, sunny...	Silent, talking...	Ringling, buzzing
2	The joke was so funny, he started to...	Undress, walk, disappear...	Cry, snore, fall asleep...	Laugh, giggle, chuckle
3	Daniel unlocked the door with a...	Balloon, melon, spanner...	Hammer, penknife...	Key
4	The child cut paper with a pair of...	Shoes, glasses, bananas...	Hands, plyers...	Scissors, sheers
5	After months of practice, Lisa passed her driving...	Force, show, night...	Trial...	Test.
6	Simon ate his dinner with a knife and...	Nose, paper, pencil...	Spade, shovel, toothpick...	Fork, spoon

VERSION C				
	Item	2 points	1 point	0 points
1	Lisa went to the library to return some...	Rice, worm, umbrella...	Videos, DVDs...	Books, magazines
2	After her shower, she dried herself with a...	Sandpaper, box, lipstick...	Water, mop...	Towel, sheet.
3	He put a teabag in his mug and boiled the...	Petrol, spaghetti, orange juice...	Milk...	Kettle, water
4	He studied medicine to become a...	Plumber, engineer, carrot...	Researcher, nurse...	Doctor, psychiatrist, GP
5	The music started and everyone got up to...	Brush teeth, fly, cry...	Sit, sleep, shout, talk, yawn...	Dance, drink, go home
6	John picked up the leash and took his dog for a...	Step class, cremation, flight...	Bath, swim, drive, game of football...	Walk, run

Social Cognition – Part A

Instructions as in Version A.

Social Cognition – Part B: Score 0-12

Instructions as in Version A.

Memory – Delayed recall: Score 0-10

Instructions as in Version A.

Memory – Delayed recognition: Score 0-4

Instructions as in Version A.

Scores & Abnormality Cut Offs

The scores and cut-offs for abnormality are the same for all three versions of the ECAS. These are shown below.

			CUT OFF FOR ABNORMALITY
DOMAIN	SUBTESTS	MAX SCORE	≤ A, B, C
Language	<i>Naming, Comprehension, Spelling</i>	<i>/28</i>	26
Verbal Fluency	<i>Free Fluency (S,F,P), Restricted Fluency (T,D,M)</i>	<i>/24</i>	14
Executive	<i>Reverse Digit Span, Alternation, Sentence Completion, Social Cognition</i>	<i>/48</i>	33
ALS-SPECIFIC:		/100	77
Memory	<i>Immediate recall, Delayed recall score, Delayed recognition</i>	<i>/24</i>	13
Visuospatial	<i>Dot Counting, Cube Counting, Number Location</i>	<i>/12</i>	10
ALS NON-SPECIFIC:		/36	24
ECAS TOTAL SCORE		/136	105

ALS Carer Behaviour Screen Guidance and Administration English Version

Instructions are the same as in Version A.

The semi-structured interview should be completed with a carer or relative. Under no circumstances should it be given to the carer or relative to complete on their own.