This section will lead you through the procedures that you need to complete the neuropsychological tests and questionnaires.

Some general notes concerning neuropsychological testing

When carrying out psychological tests, there are a number of issues that the test administrator needs to carefully consider:

When using a neuropsychological test it is important that all administrators are employing the test in the same way.

Subtle variations in how the instructions are given can lead to large differences in individual scores. It is therefore essential that the test administrator is familiar with the instructions and so is able to administer the test accurately.

The instructions you use should not be altered from those provided and it is better to read them out rather than rely on memory.

However, to make things more pleasant for the patient, in between tests, you can make general comments to the patients, providing this does not distract them. You can also explain to the patient you are using set instructions and tell them when you are about to do so. This preserves the rapport with the patient.

Each patient is an individual and the approaches they have to completing the tests will be varied. For example, you may find that some participants will be very confident and start responding before you have finished reading the instructions, whilst others will be nervous about completing the tests and may need reassurance. It is useful to think about how you would deal with these two types of patients whilst, nevertheless, making sure that you are still able to follow the specified procedures. It might be useful to note down your ideas about this when learning the test procedures.

It has been observed that some people may less readily ‘engage’ with the purpose of the assessment such that more time may be needed to ensure a mutual understanding about the session and procedures. The person administering tests should try to be encouraging and supportive, also helping the person to deal with stress and anxiety. It is worth spending more time in establishing rapport and providing the patient with a sense that they are valued and understood. Care should be taken to monitor levels of anxiety and frustration and respond to these by adjusting the style of assessment. For example, an anxious patient is helped by a calm unhurried approach. A sympathetic response may mitigate and defuse the effects of frustration.
In the context of patients who may have neuropsychological symptoms, a common experience is a negative response to failure in which the patient may become defensive, with even subsequent test refusal. Sometimes, attempting neuropsychological tests can trigger greater awareness about neuropsychological difficulties leading to an emotional reaction. The tests selected are designed to be relatively straightforward for the person to minimise the chances of this happening, but the administrator should be aware of the possibility of negative reactions. A sympathetic response, friendly encouragement or taking a short break can help in this situation.

A further factor, frequently overlooked, is the effect of hearing loss or problems with eyesight on neuropsychological test performance. Hearing speech in noisy environments is known to further compromise performance and this should be taken into account when choosing a location for neuropsychological assessments. To mitigate against hearing loss the clinician can speak more loudly, but without raising the pitch of the voice; care can be taken to ensure that if the person has a hearing aid it is being used and is working properly. Visual loss is quite prevalent in older adults even beyond obvious causes such as cataracts, macular degeneration and glaucoma, and include reductions in contrast sensitivity, visual acuity and visual processing speed.

To compensate for these factors, tests designed specifically for use with older adults tend to use larger material, with the emphasis on clarity. An obvious thing to check is whether a patient needs reading glasses and has them for the assessment. Patients should be reminded to bring their glasses for the visit.

Note that all tests are administered to the patient with the exception of the DAD which can only be completed by a carer/informant who knows the patient sufficiently well to ensure it is completed accurately.

**What to do first**

The first stage in becoming proficient at test administration is to familiarise yourself with the test instructions. As indicated earlier, it is essential for test instructions to be accurate. The best way to do this is to read carefully through the test instructions and try them out on friends and colleagues (do this on at least 3 people). After you have done this you should note down any queries that you have. Practice will help make the assessment more accurate but also relaxed for the patient.

Some tests require you to time how long has been taken or have time limits. Timing must be done accurately or it invalidates the test. A stopwatch should be used. Some people now use their mobile phone which has a timer. If so, ensure the phone is in flight mode.

**Next**

Get familiar with how to record the patients' performance and ensure this is done accurately. Each test has instructions concerning how to do this and how to record the patients’ score. Although these scores will be entered into the research database centrally, it is important to do preliminary scoring to ensure the quality of the data collection.
**Order of Tests and Questionnaires**

Use a fixed order for the tests and questionnaires as below:

1. Disability Assessment for Dementia (DAD) (this is administered through a caregiver)
2. Montreal Cognitive Assessment (MOCA)
3. National Adult Reading Test-Restandardised (NART-R) (administered at Baseline only)
4. Rey Auditory Verbal Learning Test (RAVLT)
5. Wechsler Coding (Coding)
6. Trail Making Test (Trail Making)
7. Verbal Fluency (VF)
8. Stroke Specific Quality of Life Scale (ss-QOL)
9. EuroQol (EQ-5D)

Please write the Participant ID and date administered on each test. Do not add the patient’s name or other identifiable details.

(For the Wechsler Coding and tests, please add the Participant ID where it asks for name on the front of the booklet).
1. Disability Assessment for Dementia (DAD)

Instructions:

The DAD is administered through an interview with an informant/caregiver who has sufficient knowledge of the patient to ensure it can be completed accurately. The DAD is a measure of the actual performance in ADL of the individual as observed over a period of 2 weeks previous to the time of the interview.

In addition, the questionnaire assesses what the individual is doing and not what he/she is or might be capable of doing. These activities are evaluated as performed without any assistance or reminder being provided from caregivers. This must be kept in mind when administering the questionnaire so that questions are formulated and clarified in this sense.

Questions should be asked as stated in the questionnaire and if clarifications are needed they should be given in a language that is understandable by the caregivers.

Questions should be given as follows:

*During the past two weeks, did <patient’s name>, without help or reminder,.... <undertake to wash himself/herself or to take a bath or a shower>?*

It is essential to use the exact wording in order to keep the questionnaire the same for everybody and so get reliable results.

Words in brackets should be read. The choice of answer (Yes, No, Not Applicable) should be specified at the beginning of the interview and should be repeated throughout. Noting that something is Not Applicable should only be used if this really is the case; for example, it would apply to the item about taking medication appropriately if the patient is not prescribed any medication. In cases where the patient has not performed a task, however, the answer No is appropriate (see also scoring box).

There is no strict order to follow for the administration of the items within each box.

<table>
<thead>
<tr>
<th>Scoring:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each item can be scored: YES = 1 point; NO = 0 points; NA = non applicable</td>
</tr>
</tbody>
</table>

A YES indicates that the person has performed the activity without help or reminder in the last two weeks even if it was only performed once. A NO signifies that the person did not perform the activity without help or reminder. Therefore if a person has performed the activity with some assistance from the caregiver, verbal or physical, he/she is scored as a NO.

Total the scores for each of the three categories – Initiation, Planning/Organisation and Effective Performance and record these totals on the sheet.

Also total and record the number of questions answered NA for each of the categories.
2. Montreal Cognitive Assessment (MOCA)

The materials for this test are on one sheet of paper. You will need a pencil and a stopwatch for this test. On the left of each sheet is a general heading (e.g. Visuospatial Executive) for each stage of the MOCA. The instructions below refer to these different stages in order. The instructions indicate how to record the patient’s score, which can be entered for each test in the gap between the square brackets. Before going onto another test, check that these have been filled in. At the end these scores can be added together for each stage and the amount placed in the ‘points’ column.

The instructions for this test are given below. If the person does not appear to have followed the instructions, it is permissible to repeat them. Here some judgement has to be made as to whether the person is not able to understand the instructions / execute the task, in which case repeated instructions may not be appropriate. In addition, if a person starts a task with an obvious misunderstanding, the instructions can repeated, but please take care not to go beyond this to help the person do the task, and so invalidating the results.

The MOCA is becoming more widely used as a clinical screening tool, so some patients may have had previous exposure to this test. For this reason, we are using one of the alternative versions of the test to reduce learning effects as much as possible. The instructions below are for alternative version 7.2 which is enclosed in the testing packs.

VISUOSPATIAL / EXECUTIVE

a. Trail Making - this uses the numbers and letters in the top left corner of the sheet. The patient has to start at the number 1 and draw lines between the numbers and letters in sequence, alternating between numbers and letters (i.e. 1 – A – 2 – B – 3 – C – 4 – D – 5 – E).

The examiner instructs the patient: "Please draw a line, going from a number to a letter in ascending order. Begin here [point to (1)] and draw a line from 1 then to A then to 2 and so on. End here [point to (E)]."

| Scoring: Allocate one point if the patient successfully draws the following pattern: 1 – A – 2 – B – 3 – C – 4 – D – 5 – E, without drawing any lines that cross. Any error that is not immediately self-corrected earns a score of 0. |

b. Copy Rectangle - The patient has to draw the rectangle.

Administration: The examiner gives the following instructions, pointing to the rectangle: “Copy this drawing as accurately as you can, in the space below”.
Scoring: One point is allocated for a correctly executed drawing.
• Drawing must be three-dimensional
• All lines are drawn
• No line is added
• The horizontal lines are relatively parallel.
• The object must be clearly rectangular (i.e. the shorter vertical sides cannot be more than ¾ of the length of the longer horizontal lines.
A point is not assigned if any of the above criteria are not met.

c. Clock Drawing - The patient draws a clock face.
Administration: Point to the space in the top right of the MOCA sheet and give the following instructions: “Draw a clock. Put in all the numbers and set the time to 5 past 4”.
If the patient forgets the time to be drawn, this can be repeated.

Scoring: One point is allocated for each of the following three criteria:
• Contour (1 pt.): the clock face must be a circle with only minor distortion acceptable (e.g., slight imperfection on closing the circle);
• Numbers (1 pt.): all clock numbers must be present with no additional numbers; numbers must be in the correct order and placed in the approximate quadrants on the clock face; Roman numerals are acceptable; numbers can be placed outside the circle contour;
• Hands (1 pt.): there must be two hands jointly indicating the correct time; the hour hand must be clearly shorter than the minute hand; hands must be centred within the clock face with their junction close to the clock centre.
A point is not assigned for a given element if any of the above-criteria are not met.

NAMING
The patient has to name three animals.
Administration: Beginning on the left, point to each figure and say: “Tell me the name of this animal”.

Scoring: One point each is given for the following responses:
(1) giraffe; (2) bear (or specific varieties of bears); (3) hippopotamus (or hippo).
MEMORY

Five words are read to the patient and they immediately have to recall them in any order.

Administration:
First Attempt:
The examiner reads a list of 5 words at a rate of one per second, giving the following instructions: “This is a memory test. I am going to read a list of words that you will have to remember now and later on. Listen carefully. When I am through, tell me as many words as you can remember. It doesn’t matter in what order you say them”.

Scoring: Make a tick in the allocated space for each word the patient produces on this first attempt (termed trial on the sheet).

When the patient indicates that (s)he has finished (has recalled all words), or can recall no more words do the test again as follows:

Second Attempt:
Read the list a second time with the following instructions: “I am going to read the same list for a second time. Try to remember and tell me as many words as you can, including words you said the first time.”

Scoring: Put a tick in the allocated space for each word the patient recalls after this second attempt (2nd trial).

At the end of this, inform the patient that (s)he will be asked to recall these words again by saying, “I will ask you to recall those words again at the end of the test.”

Scoring: Although remembering words is recorded by ticking, as indicated above, these ticks are not added - so no score is entered in the points column (it says 'No points' to indicate this).

ATTENTION

There are three tests, recalling a list of digits, listening to a list of letters and tapping when the letter A is heard and serial subtraction.

a. Recalling a list of digits.

This is done twice. For the first time the lists are read out and the patient has to say them back in order (forward order). For the second time they have to say them back in reverse order (backward order).
Forward: Administration: Give the following instruction: “I am going to say some numbers and when I am through, repeat them to me exactly as I said them”. Read the five number sequence at a rate of one digit per second.

| Scoring: One point if the total sequence 3 2 9 6 5 is repeated in this exact order. |

Backward: Administration: Give the following instruction: “Now I am going to say some more numbers, but when I am through you must repeat them to me in the backwards order.” Read the three number sequence at a rate of one digit per second.

| Scoring: One point if the total backward sequence 2 5 8 is produced in this exact order. |

b. Lists of letters.

The patient has to listen to lists of letters and tap every time they hear an A.

Administration:

The examiner reads the list of letters at a rate of one per second, after giving the following instruction: “I am going to read a sequence of letters. Every time I say the letter A, tap your hand on the table once (demonstrate tapping). If I say a different letter, do not tap your hand”.

| Scoring: Give one point if there are no errors or if only one error is made (an error is a tap on a wrong letter or a failure to tap on letter A). |

c. Serial subtraction.

This requires the person to subtract seven from 90 and then seven from the resulting number and so on until they have done this 5 times.

Administration:

The examiner gives the following instruction: “Now, I will ask you to count by subtracting seven from 90, and then, keep subtracting seven from your answer until I tell you to stop.” Give this instruction twice if necessary.

| Scoring: This item is scored out of 3 points. Give no (0) points for no correct subtractions, 1 point for one correction subtraction, 2 points for two-to-three correct subtractions, and 3 points if the participant successfully makes four or five correct subtractions. Count each correct subtraction of 7 beginning at 90. Each subtraction is evaluated independently; that is, if the participant responds with an incorrect number but continues to correctly subtract 7 from it, give a point for each correct subtraction. For example, a participant may respond “82 – 75 – 68 – 61 – 54” where the “82” is incorrect, but all subsequent numbers are subtracted correctly. This is one error and the item would be given a score of 3. |
LANGUAGE

This includes two types of tests, repeating sentences and producing words that start the letter S.

Sentence Repetition:

Administration: The examiner gives the following instructions: “I am going to read you a sentence. Repeat it after me, exactly as I say it” [pause]:
“A bird can fly into closed windows when it’s dark and windy.”

Following the response, say: “Now I am going to read you another sentence. Repeat it after me, exactly as I say it” [pause]:
“The caring grandmother sent groceries over a week ago.”

Scoring: Allocate 1 point for each sentence correctly repeated. Repetition must be exact.
Be alert for errors that are omissions (e.g., omitting "over") and substitutions/additions (e.g., "Birds can fly into closed windows…"); substituting "stormy" for "windy", altering plurals, etc.).

Producing words beginning with S:

Administration: The examiner gives the following instruction: “Tell me as many words as you can think of that begin with a certain letter of the alphabet that I will tell you in a moment. You can say any kind of word you want, except for proper nouns (like Bob or Bristol), numbers, or words that begin with the same sound but have a different suffix, for example, love, lover, loving. I will tell you to stop after one minute. Are you ready? [Pause] Now, tell me as many words as you can think of that begin with the letter S. [time for 60 sec]. Stop.”

Scoring: Allocate one point if the patient generates 11 words or more (within the rules) in 60 sec. Record the patient’s response on the reverse side of the sheet.

ABSTRACTION

The patient has to say how two words are alike.

Administration: The examiner asks the patient to explain what each pair of words has in common, starting with the example: “Tell me how a carrot and a potato are alike”. If the patient answers in a concrete manner but does not give the appropriate response (vegetable), then say only one additional time: “Tell me another way in which those items are alike”. If the patient does not give the appropriate response, say, “Yes, and they are also both vegetable.” Do not give any additional instructions or clarification.
After the practice trial, say: “Now, tell me how a diamond and a ruby are alike”.
Following the response, administer the second trial, saying: “Now tell me how a cannon and a rifle are alike”. Do not give any additional instructions or prompts.
Scoring: Only the last two item pairs are scored. Give 1 point to each item pair correctly answered.

The following responses are acceptable:
Diamond - ruby: gem stones, precious stones, jewels
Cannon - rifle: weapons, guns, used for hurting/killing people, used in war

The following responses are not acceptable:
Diamond - ruby: from the earth
Cannon - rifle: fires/shoots, ammunition

DELAYED RECALL

The patient tries to recall the five words they attempted to recall earlier.

Administration: The examiner gives the following instruction: “I read some words to you earlier, which I asked you to remember. Tell me as many of those words as you can remember.” Make a tick for each of the words correctly recalled spontaneously without any cues, in the allocated space.

Scoring: Allocate 1 point for each word recalled.

THE OPTIONAL PART OF THIS STAGE IS NOT DONE (SEE SHEET).

ORIENTATION

This test involves questions about orientation for time and place.

Administration: The examiner gives the following instructions: “Tell me the date today”. If the patient does not give a complete answer, then prompt accordingly by saying: “Tell me the [year, month, exact date, and day of the week].” Then say: “Now, tell me the name of this place, and which city it is in.”

Scoring: Give one point for each item correctly answered. The patient must tell the exact date and the exact place (name of hospital, clinic, office). No points are allocated if patient makes an error of one day for the day and date.

TOTAL SCORE

Sum all subscores listed on the right-hand side. Add one point for an individual who has 12 years or fewer of formal education, for a possible maximum of 30 points.
3. National Adult Reading Test-Restandardised (NART-R)

This test is to be administered at Baseline only.

This is a test of whether a person can read single words, starting with well known ones and finishing with less well known words.

Instructions:

Place the word sheet, with the title ‘National Adult Reading Test’ in front of the patient. Ask the patient to read each word. Ensure they read slowly so you can check their pronunciation. If they read too fast, ask them to pause between each word until you say go for the next one.

Check and learn the pronunciation using the recorded reading. It is important to learn the pronunciations well using the recording. There is research that unless this is done carefully the accuracy of this test is much reduced.

Scoring: Record which words the patient pronounces correctly using the score sheet. Total the number of errors made.
4. Rey Auditory Verbal Learning Test (RAVLT)

This test is essentially the patient listening to some words and having then to immediately recall them, but not in any particular order. This is done several times with the same words, to test for learning. A further complexity is that towards the end a different list is given to remember. This list will tend to interfere with the subsequent ability to remember the first list and the extent to how much this happens is part of the test.

The examiner reads out the lists of words in a clear voice and steady fashion, ensuring they can be easily heard by the patient.

Instructions:

List A: First Attempt.

The test starts with reading out list A.

Say: *I am going to read a list of words. Listen carefully, because when I stop you are to repeat back as many words as you can remember. It doesn’t matter in what order you repeat them. Just try to remember as many as you can.*

Read the words from List A at 1 second intervals, and tick the words that are remembered in Column 1. Because the order in which the words are recalled does not matter, simply tick a box opposite a word if it is recalled. No feedback should be given regarding the number of correct responses, repetitions, or errors.

| Scoring: When the examinee indicates they cannot recall any more words, read the list again with the following instructions: |

List A: Second Attempt.

*Now I am going to read the same words again, and once again when I stop I want you to tell me as many word as you can remember, including words you said the first time. It doesn’t matter in what order you say them. Just say as many words as you can remember whether or not you said them before.*

As before, tick the words recalled in the next column.

Attempts 3-5:

The task is attempted three more times using the instructions below. You may praise the examinee as they recall more words, you may tell them the number of words already recalled, particularly if they are able to use the information for reassurance or a challenge.

*Now I am going to read the same words again, and once again when I stop I want you to tell me as many word as you can remember, including words you have already said. It doesn’t matter in what order you say them. Just say as many words as you can remember whether or not you said them before.*
Attempt 6:

After the fifth attempt, read List B with the following instructions:

Now I’m going to read a second list of words. Listen carefully, because when I stop you are to repeat back as many words as you can remember. It doesn’t matter in what order you repeat them. Just try to remember as many as you can.

As before, tick the ones recalled in the appropriate column.

Attempt 7:

Immediately after the List B attempt, ask the examinee to recall as many words from the first list (List A) as they can (without further presentation of these words).

Say: Now tell me all the words that you can remember from the first list.

As before, tick the ones recalled in the appropriate column

Attempt 8:

After 20 minutes delay, filled with other activity, ask the examinee to recall the words from List A.

To fill the 20 minute delay, do the Coding, Trail Making and Verbal Fluency Tests. If the 20 minutes is not finished after the Coding, Trail Making and Verbal Fluency Tests, then start on the questionnaires. It is important, however, not to stop during one any of these individual tests or questionnaires, so if the 20 minutes is up during one of them, continue until the test or questionnaire is finished and then do the memory testing. Likewise, if a filler test or questionnaire is finished just slightly before the 20 minutes is up, do not start another test or questionnaire, but converse with the patient to fill the time.

Say: A while ago, I read a list of words to you several times, and you had to repeat back the words. Tell me the words from that list.

As before, tick the ones recalled in the appropriate column.

If words are recalled that are not in the list being tested, do no record these (e.g. from the MOCA; or when testing for list B, words from List A; or when testing list A (7 or 8), words from list B; or any other words not in the lists.

**Scoring:** For attempts 1-8 total up for each the number recalled correctly (i.e. ticked) and place the totals at the bottom of each column.
Attempt 9:

This requires the person to listen words from both lists mixed up with other words and then say whether they have heard the word before (in other words recognise a word from lists A and B).

Read the words to the examinee with the following instructions:

Say: I will say some words that were on the word lists that I read to you, and some words that were not on those lists. Tell me each time I say a word that was read to you.

Scoring: As you read each word to the examinee, circle their response (No or Yes). The correct response is highlighted in bold on the score sheet. If they have answered correctly (i.e. the bold response is circled), circle the score 1 in the adjacent column. If they have answered incorrectly, circle the score 0.

Total the circled scores for List A and List B and record these at the bottom of the sheet.
5. Wechsler Coding (Coding)

You will need a pencil and a stopwatch for this test. The Coding test is on the back page of the Wechsler Adult Intelligence Scale - IV response booklet. Turn the response booklet over so only the Coding test is visible and place it in front of the patient.

General Directions:

Ensure the patient has a smooth work surface.

Use the demonstration items to explain and illustrate the task to the patient, then allow the patient to practise by completing the sample items. If the patient appears confused, repeat the explanation and demonstrate the task again, using the sample items. Proceed with the test items only when the patient understands the task.

If a left handed patient partially blocks the key with his or her left hand while completing the sample items, stop the administration. Place an extra Response Booklet, open to the coding subtest, to the right of the patient’s Response Booklet. Position is so the extra key is aligned with the key the patient’s hand is blocking. Have the patient complete the remaining sample items using the extra key, so he or she will be accustomed to the arrangement when completing the test items.

Do not discourage a patient from making spontaneous corrections unless he or she does so repeatedly and it impedes performance.

Do not provide the patient with an eraser. If the patient asks what to do if he or she makes a mistake, say, *That’s ok. Just keep working as fast as you can.*

If the patient omits an item or begins to complete a row in reverse order (from his or her right to left), say, *Do them in order. Don’t miss any.* Point to the first omitted item and say, *Do this one next.*

Provide no further assistance on this subtest except to remind the patient to continue until told to stop (if necessary).

Instructions:

Demonstration: Point to the key at the top of the page and say *Look at these boxes. Each box has a number in the top part* (point across the numbers from 1 to 9) *and a special mark in the bottom part* (point across the symbols). *Each number has its own mark* (point to 1 and its symbol, then to 2 and its symbol).

Point to the demonstration items and say, *Down here, the boxes have numbers in the top parts but are empty in the bottom parts. You are to draw the marks that belong in the empty boxes, like this.*

Point to the first demonstration item (6) and say, *Here is a 6. The 6 has this mark* (point to the key to show its corresponding symbol), *so I draw that mark in the box, like this* (write the symbol).
Point to the second demonstration item (8) and say, *Here is an 8. The 8 has this mark* (point to the key to show its corresponding symbol), *so I draw that mark in the box*, (write the symbol).

Point to the third demonstration item (3) and say, *Here is a 3. The 3 has this mark* (point to the key to show its corresponding symbol), *so I draw that mark in the box*, (write the symbol).

Sample Items:

Give the patient a pencil and say, *Now you do these* (point to the sample items). *Stop when you get to this line* (point to the heavy line that separates the sample items from the test items).

Allow the patient to work alone on the remaining sample items. If a left-handed patient partially blocks the key with his or her left hand while completing the sample items, stop the administration. Place an extra response booklet, opened to the Coding test, to the right of the patient’s response booklet. Position it so the extra key is aligned with the key the patient’s hand is blocking. Have the patient complete the remaining sample items using the extra key, so he or she will be accustomed to the arrangement when completing the test items.

If the patient completes the sample items correctly, offer praise such as *Yes* or *Right* and, finally, *Now you know how to do them*.

If the patient makes a mistake on a sample item, correct the error immediately. Use the item to review the use of the key. Continue to help the patient, if necessary until the patient correctly completes the sample items. Use explanations such as *You see, this is a 9. The 9 has this mark, so I draw that mark in the box* (write the symbol).

Do not proceed with the test items until the patient understands the task. If it is clear that the patient will not be able to understand the task with further instruction, discontinue the test.

When the patient has successfully completed the sample items, proceed to the test items.

Test items:

Say *When I say go, do these the same way. Start here* (point to the first test item), *go in order, and don’t skip any. Work as fast as you can without making mistakes until I tell you to stop. Are you ready?*

Explain further if necessary, then say *Go*. Begin timing and allow 120 seconds.

If necessary, remind the patient to go in order and continue working. Give no further assistance.

If the patient is still working at 120 seconds, stop timing and say *Stop.*
**Scoring:**

If the patient completes all of the test items before the 120 second time limit expires, stop timing and record the completion time in seconds.

If the patient does not complete all of the test items within the time limit, record the completion time as 120 seconds.

Use the Coding Scoring Template to score the patient’s responses. Align the template so that the correct responses are above the patient’s responses. Each test item number is indicated on the scoring template.

A response is scored as correct if it is correctly drawn, or if drawn imperfectly, if it is clearly identifiable as the keyed symbol. The marks do not need to be identical to the keyed symbol but must be clearly distinguishable from other symbols.

Score 1 point for each correctly drawn symbol completed within the time limit.

Score 1 point if the patient, after realising a mistake, spontaneously draws the correct symbol next to or on top of the incorrect response.

Do not include responses to the sample items in the patient’s score.

Items that the patient did not attempt (either missed or did not reach before the time limit expired) should not be counted.

If the patient is unable to complete any items, enter a total score of 0.

The total score is the number of correctly drawn symbols completed in 120 seconds.
6. Trail Making Test (Trail Making)

There are four test sheets for this test and the patient uses a pencil to draw between firstly numbers and then numbers and letters. You will need a pencil and a stopwatch for this test.

Part A - Sample

When ready to begin the test, place the Part A sample test sheet in front of the patient, give the patient a pencil, and say:

Instructions:

"On this page (point) are some numbers. Begin at number one (point to 1) and draw a line from one to two, (point to 2), two to three (point to 3), three to four (point to 4), and so on, in order, until you reach the end (pointing to the circle marked END). Draw the lines as fast as you can. Do not lift the pencil from the paper. Ready, begin!"

If the patient makes a mistake on Sample A, point it out and explain it. The following explanations of mistakes are acceptable:

1. You started with the wrong circle. This is where you start (point to 1).
2. You skipped this circle (point to the one omitted). You should go from number one (point to 2), two to three (point to 3), three to four (point to 4), and so on, in order, until you reach the circle marked END (point).
3. Please keep the pencil on the paper, and continue right on to the next circle.

After the mistake has been explained, the examiner marks out the wrong part and says: Go on from here (point to the last circle completed correctly in the sequence).

If the patient still cannot complete Sample A, take the patient’s hand and guide the pencil through the trail (without writing). Then say: Now you try it. Remember, begin at number one (point) and draw a line from one to two (point to 2), two to three (point to 3), three to four (point to 4), and so on, in order, until you reach the end (pointing to the circle marked END). Do not skip around but go from one number to the next in the proper order. If you make a mistake, mark it out. Remember, work as fast as you can. Ready, begin!

If the patient succeeds this time, go on to Part A of the test. If not, repeat the procedure until the patient does succeed, or it becomes evident that he or she cannot do it.

If the patient completes the sample item correctly, and in a manner which shows that he or she knows what to do, say: Good! Let’s try the next one. Give Part A of the test.

Part A – Test

Say: On this page are numbers from 1 to 25. Do this the same way. Begin at number one (point) and draw a line from one to two (point to 2), two to three (point to 3), three to four (point to 4), and so on, in order, until you reach the end (point). Remember, work as fast as you can. Ready, begin!
Start timing. If the patient makes an error, call it to his or her attention immediately, and have the patient proceed from the point where the mistake occurred. Do not stop timing. Stop after a maximum of 3 minutes.

Scoring: Write on the sheet the time in seconds and the number of errors.

Part B - Sample

Administration:

Then say, *That’s fine. Now we’ll try another one.* Proceed immediately to Part B, sample.

Place the test sheet for Part B, sample flat on the table in front of the patient, in the same position the sheet for Part A was placed.

Point with the right hand to the sample and say: *On this page are some numbers and letters. Begin at number one* (point) *and draw a line from one to A* (point to A), *A to two* (point to 2), *two to B* (point to B), *B to three* (point to 3), *three to C* (point to C), *and so on, in order, until you reach the end* (point to circle marked END). *Remember, first you have a number* (point to 1), *then a letter* (point to A), *then a number* (point to 2), *then a letter* (point to B), *and so on. Draw the lines as fast as you can. Ready, begin!*

If the patient makes a mistake on Sample B, point it out and explain it. The following explanations of mistakes are acceptable.

1. *You started with the wrong circle. This is where you start* (point to 1).
2. *You skipped this circle* (point to the one omitted). *You should go from one* (point) *to A* (point), *A to two* (point), *two to B* (point), *B to three* (point), *and so on until you reach the circle marked END* (point). If it is clear that the patient intended to touch the circle but missed it, do not count it as an omission, but caution him or her to touch the circle.
3. *You only went as far as this circle* (point). *You should have gone to the circle marked END* (point).
4. *Please keep the pencil on the paper and go right on to the next circle.*

After the mistake has been explained, the examiner marks out the wrong part and says: *Go on from here* (point to the last circle completed correctly in the sequence).

If the patient still cannot complete Sample B, take the patient’s hand and guide the pencil (without writing) through the circles. Then say: *Now you try it. Remember you begin at number one* (point) *and draw a line from one to A* (point to A), *A to two* (point to 2), *two to B* (point to B), *B to three* (point to 3), *and so on, until you reach the end* (point). *Ready, begin!*

If the patient succeeds this time, go on to Part B of the test. If not, repeat the procedure until the patient does succeed, or it becomes evident that he or she cannot do it.
Part B – Test

If the patient completes the sample item correctly, say: *Good. Let’s try the next one.* Give the patient Part B and say: *On this page are both numbers and letters. Do this the same way. Begin at number one* (point) *and draw a line from one to A* (point to A), *A to two* (point to 2), *two to B* (point to B), *B to three* (point to 3), *three to C* (point to C), *and so on, in order, until you reach the end* (point to circle marked END). *Remember, first you have a number* (point to 1), *then a letter* (point to A), *and so on. Do not skip around, but go from one circle to the next in the proper order. Draw the lines as fast as you can. Ready, begin!*

Start timing. If the patient makes an error, immediately call it to his or her attention and have the patient proceed from the point at which the mistake occurred. Do not stop timing. Stop after a maximum of 5 minutes.

<table>
<thead>
<tr>
<th>Scoring:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write on the sheet the time in seconds and the number of errors. If the patient does not complete the task before time runs out, count up the number of correct items completed. If the patient stops early without completion, for whatever reason, record the time taken and count up the number of correct items completed.</td>
</tr>
</tbody>
</table>
7. Verbal Fluency (VF)

This involves two tests, the first producing as many words starting with a particular letter in a minute, with three attempts using the letters F, A and S; and the second in which as many animals as possible have to be said within a minute. The examiner has to write down the words and use a stopwatch to time the minutes.

Letters:

Instructions:

Use a stopwatch to record time.

Say: *I will say a letter of the alphabet. Then I want you to give me as many words that begin with that letter as quickly as you can. For instance, if I say 'b' you might give me 'bad, battle, bed...' I do not want you to use words which are proper names such as 'Birmingham, Billy or Bovril', also, do not use the same word again with a different ending such as 'eat' and 'eating'. Any questions? (pause) begin when I say the letter. The first letter is 'f'. Go ahead.*

Begin timing immediately. Allow exactly one minute for each letter. Say 'fine' or 'good' after each one minute performance. If the patient discontinues before, encourage them to try to think of more words. If there is silence of more than 15 seconds repeat the basic instructions for the letter.

Write down the words in the order said. If there are possible homophone repetitions (words that sound the same but may be different words - e.g. four and for) check for the meaning afterwards to determine if different words were said.

Administer all letters F, A and S.

Scoring: Sum the number of admissible words for each letter and then total up the three amounts. Slang words and foreign words used as part of standard English are acceptable. Record the number of repetitions for each attempt. Also record made up words.

Animals:

Instructions:

*Now I want you to do something similar. I want you to say as many different animals as you can. Name them as quickly as possible.*

Allow ONE MINUTE for this test as well. If the patient discontinues before the end of the period encourage them to produce more names. Repeat the basic instructions and give the starting word 'dog' if there is a pause of 15 seconds or more. Start timing immediately after the instructions have been given, but allow extra time for the period when instructions are repeated. Write down the words in the order they were produced.

Scoring: Sum the number of admissible words. Names of extinct imaginary or magic animals are admissible but given names for animals (e.g. Fido) are not. Record the number of repetitions for each attempt. Also record made up words.
8. Stroke Specific Quality of Life Scale (ss-QOL)

Instructions:

Show the patient the questionnaire and ask them to circle an option that best describes them for each item. If they have difficulty reading the items it is possible to read out the items and the options; for example for the first item say: here is the item 'I feel tired most of the time. thinking of this, which of these apply - is it strongly agree, moderately agree, neither agree or disagree, moderately disagree or strongly disagree?

Scoring:

Each item has five choices from left to right. For each item there is a corresponding score of 1-5 (e.g. strongly agree - 1; moderately agree - 2; neither agree or disagree - 3; moderately disagree 4; strongly disagree 5). Total across the questionnaire the number of points for each items and write this total score at the bottom of the questionnaire.
9. EuroQol (EQ-5D)

This questionnaire is labelled EQ-5D Health questionnaire.

Part 1

Instructions:
Ask the patient to circle one response for each section.

Scoring:
Total the numbers circled by the patient and record the total. Also record the number of questions unanswered by the patient.

Part 2

Instructions:
Ask the patient to draw a line from the box to the point on the scale indicates how good or bad they feel their health state is today.

Scoring:
Record the number the patient has indicated on the scale.

e.g. in the examples below, both responses would be recorded as 77. In the example on the right, a line is drawn horizontally from the end point of the patient’s line.