International Parkinson and
Movement Disorder Society

SCOPA-COG

Scales for Outcomes in Parkinson's Disease - COGnition

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SCOPA-COG instructions

Memory and learning

1. Verbal recall

Ten words are shown for at least 4 seconds each. Get the patient to read them out loud, the time allowed for recall is unlimited. Underline each word that has been named. When words are named that were not shown, no penalty is given. When a false answer is corrected (e.g. king into queen), it is rated as correct.

Instruction: "Read the following 10 words aloud and try to remember as many as possible. After reading them all, name as many words as possible, the order of the words is not important".

Butter arm shore letter queen cabin pole ticket grass engine

Number of correct words: ..../10

10   correct = 5
8-9 correct = 4
6-7 correct = 3
5   correct = 2
4   correct = 1
≤3   correct = 0

Score:………/5

2. Digit span backward

Ask the patient to repeat a series of numbers backwards; the numbers are read out separately, 1 second per number; if incorrectly repeated, the alternative in the second column is read out. If a subject corrects him/herself rightly, this is not counted as a mistake. Continue until both the first and the alternative series are repeated incorrectly and record the highest series that is repeated correctly. Read the numbers calmly and make sure the time interval between numbers is equal.
Give an example: "If I say 2-7-3, than you say (3-7-2).

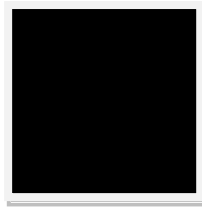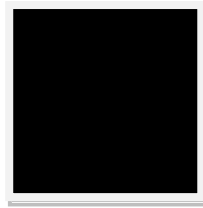|		**Score**:
2-4	5-8	= 1
6-2-9	4-1-5	= 2
3-2-7-9	4-9-6-8	= 3
1-5-2-8-6	6-1-8-4-3	= 4
5-3-9-4-1-8	7-2-4-8-5-6	= 5
8-1-2-9-3-6-5	4-7-3-9-1-2-8	= 6
9-4-3-7-6-2-5-8	7-2-8-1-9-6-5-3	= 7

Score:...…/7

3. Indicate cubes

Point to the cubes in the order given below; the patient should copy this; do this slowly; the patient decides for himself which hand he/she prefers. Observe carefully if the patient copies the order correctly. When a patient wants to correct a mistake, let him/her do the complete order again. This is not counted as a mistake. However, if the patient forgets the order and would like to see the order a second time, the researcher does not repeat the order again but starts with the next order.
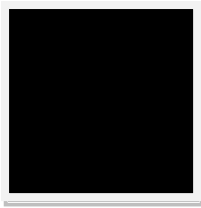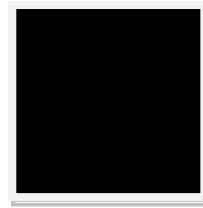
1	2	3	4

a. 1-2-4-2	Correct	Incorrect
b. 1-2-3-4-3	Correct	Incorrect
c. 3-4-2-1-4	Correct	Incorrect
d. 1-4-2-3-4-1	Correct	Incorrect
e. 1-4-2-3	Correct	Incorrect

Score ……../5

Attention

4. Counting backwards (30 to 0)

<u>Instruction</u>: "Would you subtract three from 30, and subtract three again from the result and continue till zero?".

Mistakes may concern: the order; missing or not knowing a number; naming a wrong number; or not finishing off the series). Record the order of numbers named by the patient.
If the patient asks where to start or how much to subtract, the researcher repeats the instructions but counts that as one mistake. If the patient makes a mistake but continues from that point to subtract three, it is only one mistake. If the patient stops the order and starts all over again, it is one mistake. If a patient corrects him/herself, this is counted as a mistake.

(Score: 0 mistakes = 2; 1 mistake = 1; ≥ 2 mistakes = 0)

Score..…../2

5. Months backwards

<u>Instruction</u>: "Name the months of the year in reverse order, starting with the last month of the year".

Mistakes are: the order, missing or not knowing the next month, or not finishing off the series. Underline the months that are named correctly. When a month is passed over, this is a mistake, even if the patient corrects it later on. If the patient stops the order and starts all over again, it is one mistake. If the patient starts naming the month forward, repeat the instructions and count it as one mistake.

Dec- Nov-Oct-Sept-Aug-July-June-May-April-March-Feb-Jan.

(Score: 0 mistakes = 2; 1 mistake = 1; ≥ 2 mistakes = 0)

Score..…….../2

Executive functions

6. Fist-edge-palm

Show the following movement sequence: 1) Fist with ulnar side down, 2) Stretched fingers with ulnar side down, 3). Stretched fingers with palm down.
Practice 5 times together with the patient; the patient chooses which hand he/she prefers. Do it slowly and tell the patient to watch carefully and repeat what you are doing. Practice first 5 rounds with verbal help, e.g. FIST-STRETCH-PALM. Then tell the patient to make the movements alone.

<u>Instruction</u>: "Now it is your turn to make the three movements, fist-stretch-palm, 10 times in a row. You don't have to count, I will tell you when to stop".

Note the number of correct trios from a total of 10. Count carefully but not out loud. Every time a patient makes a wrong movement, count it as a mistake, even when the patient corrects it halfway.

(Score: 10 correct = 3; 9 correct = 2; 8 correct = 1; ≤ 7 correct = 0)

Score..…….../3

7. Semantic fluency

Tell the patient to name as many animals as he/she knows in one minute. Note all answers that are given by the patient. No variations of words, such as lion-lioness, tiger-tigress; categories are allowed, bird and pigeon are both correct.
Note all the animals named and count the number correctly named The purpose is that the patient generates the animals actively, therefore no clues are allowed. When the patient asks for instance whether naming different types of birds is allowed, this may be confirmed. When the patient almost immediately says he/she does not know any more animals, try to stimulate the patient by saying "there is still a lot of time left", but do not give clues. When the patient starts naming other things than animals, do not correct the patient. Naming other things besides animals is not counted as an additional mistake.

(Score: ≥ 25 correct = 6; 20-24 = 5; 15-19 = 4; 10-14 = 3; 5-9 = 2; 1-4 = 1; 0=0)

Number of animals correct: …….

<div align="right">Score ……../6</div>

8. Dice

Use 2 cards, one with YES = EVEN, NO = ODD; one with YES = HIGHER, NO = LOWER. Put the correct card face up next to the explanation of the test and make sure that the other, irrelevant card is out of sight.
The first round (situation 1) is not scored, and the patient is corrected if necessary.

Situation 1: YES = EVEN

Put the card "YES=EVEN, NO=ODD" on the table and leave it there during the test.

Instruction: "When you see a picture of a dice with an EVEN number of pips, I would like you to say YES, and NO when the number of pips is ODD".

Show the first two examples (3 even and 3 odd dices) and ask the patient "If you see one of these dice, do you say yes or no?" Tell the patient if the answer is correct or not. If the answer is not correct, explain why. It is important that the patient says YES or NO and not EVEN or ODD. Show the next two examples (with only one dice) and ask the patient "if you see this dice, do you say yes or no?" Tell the patient if the answer is correct or not. If the answer is not correct, explain why.

Then show the patient the following 10 dices. Correct the patient if the answer is wrong.

Situation 2: YES = HIGHER

With the card "example 1" (dice with 3 pips) the next condition starts. Put the card "YES=HIGHER, NO=LOWER" on the table and remove the former card.

Instruction: "Now, we change the test a little. When you see a picture of a dice with a higher number of pips than the dice on the page before, you say YES; when the number of pips on the dice is lower, you say NO".

Tell the patient you have an example (example 1). "Try to remember this dice" (turn the page) "Is this YES or NO?" Tell the patient whether the answer is correct or not. If the answer is not correct, explain why. Continue with example 2 and say "now remember this dice"(turn the page) "Is this YES or NO?" Tell the patient if the answer is correct or not. If the answer is not correct, explain why.

Then start the test and show all 10 dices one after another. The first response counts and corrections are not allowed.
Do NOT correct when a wrong answer is given. If a patient corrects a wrong answer, it is still counted as a mistake. If the patient asks for the instruction, the researcher explains, but that is counted as one mistake.

(Score: 10 correct = 3; 9 correct = 2; 8 correct =1; ≤ 7 correct = 0)

Number correct: …./10

Score …….../3

Visuospatial functions

9. Assembling patterns

The patient is shown 5 incomplete patterns and has to choose 2 or 3 shapes out of 4 to 6 possible alternatives in order to complete the pattern. First practice 2 figures.

Show the patient example A and give the instruction to choose the shapes that form the pattern. Tell the patient if the answer is correct or not. If the answer is not correct, explain why and give the correct solution. Repeat this with example B.
Then show the 5 patterns. Do not tell the patient whether the answer is correct or not. There is no time limit. If the patient corrects a wrong answer, this is not counted as a mistake.

a.   b.   c.   d.   e.

Score …….../5

Memory

10. Delayed recall

Instruction: "Can you name as many as possible of the 10 words that you learned during the first test?"

Underline each word that has been named. When words are named that were not shown, no penalty is given. When a false answer is changed (e.g. king into queen), it is correct.

butter arm shore letter queen cabin pole ticket grass engine

Number of correct words: ….ced/10

10   correct = 5
8-9 correct = 4
6-7 correct = 3
5   correct = 2
4   correct = 1
≤3   correct = 0

Score:………/5

Total SCOPA-COG score: ….. /43

Use of this questionnaire in studies should be communicated to the International Parkinson and Movement Disorder Society (MDS). No changes may be made to the questionnaire without written permission from MDS. Please use the following reference in publications: Marinus J, Visser M, Verwey NA, Verhey FRJ, Middelkoop HAM, Stiggelbout AM, van Hilten JJ. Assessment of cognition in Parkinson's disease. *Neurology* 2003;61:1222-1228.

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