

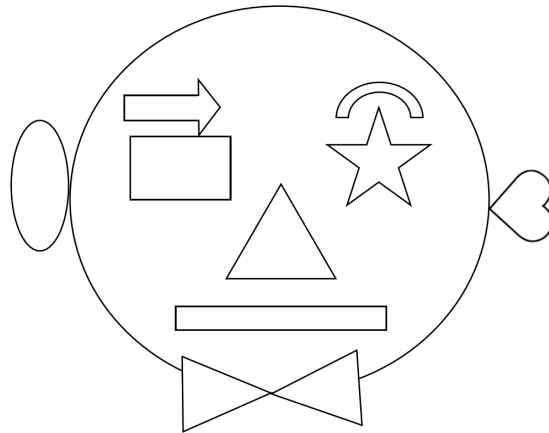
# Memory Test

Patient details			
Name:		Date:	
Date of assessment:		Assessor name:	
Relevant medical history			
Visual impairment:	Yes	No	Details:
Hearing impairment:	Yes	No	Details:
Family history of AD:	Yes	No	Details:
Tests completed			
Spatial memory test		Story recall test	
Word list recall test		Digit span test	
Other:			
Results			
<b>Spatial memory test:</b>			
<b>Word list recall test:</b>			
Immediate recall:			
Learning score:			
Delayed recall:			
Total score:			
<b>Story recall test:</b>			
<b>Digit span test:</b>			
Notes			

## Test administration

### 1. Spatial memory test

Present the following design to the patient for 10 seconds. After 10 seconds, remove the design and ask the client to draw it from memory on the following page.

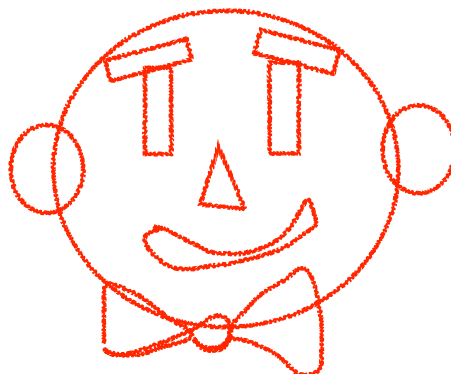


### Scoring

The spatial memory test is scored based on the accuracy of the patient's reproduction of the design. Each correctly drawn element earns 1 point, with a maximum score of 10 points.

Score	Interpretation
0 - 3	May suggest severe impairment (significant distortion or inability to reproduce key elements)
4 - 7	May suggest mild to moderate impairment (partial accuracy with noticeable errors)
8 - 10	Indicates normal performance (most or all elements correctly drawn)

Please draw the design you saw here:



Notes:

## 2. Word list recall test

Inform the patient that you will read a list of 15 unrelated words aloud. Once the list has been read, ask the patient to recall as many words as possible in any order. This process should be repeated three times, with the number of recalled words recorded each time. After a 10-15 minute delay, instruct the patient to recall as many words from the list as possible.

**Cash  
Nature  
Cutting  
Musical**

**Presentation  
Theorist  
Distortion  
Column**

**Weave  
Elite  
Novel  
Illness**

**Offset  
Collapse  
Inject**

### Scoring

The word list recall test consists of three immediate recall trials followed by a delayed recall trial after 10-15 minutes. The test is scored based on the number of words correctly recalled during each stage.

- **Immediate recall:** 1 point for each correctly recalled word per trial (max 15 per trial).
- **Learning score:** 1 point for each new word recalled after each subsequent trial (max 15).
- **Delayed recall:** 1 point for each correctly recalled word after the delay (max 15).
- **Total score:** Sum of the highest recall score from each trial and delayed recall (max 60).

Total score	Interpretation
0 - 19	May suggest severe impairment
20 - 39	May suggest moderate impairment
40 - 59	May suggest mild impairment
60	Indicates normal performance

## 3. Story recall test

*Read the following story aloud to the patient. Immediately after reading, ask the patient to recall as many details as possible. After a 10-15 minute delay, ask the patient to recall the story again.*

Every summer, Penny travels to a family reunion barbecue. Penny is never excited, and this year is no different. She dreads the drive. She doesn't like talking to her relatives and she does not like the taste or smell of hamburgers.

When Penny arrives, she sees lots of familiar faces. It is July, and Uncle Vernon is wearing a sweater. Uncle Vernon is always cold. It's very mysterious. She sees her cousin Polly. Polly has six children. The youngest one screams. Then the oldest one screams. Polly's children are always screaming. She sees many of her other cousins on the field playing softball. They play a softball game yearly, which always ends in a big argument.

Penny wonders, again, why they never solve it. Then Penny sees an incredibly handsome man. She stares at him. He catches her staring. He smiles and walks over to her. Penny is very nervous. She is worried because a handsome man is walking up to her, and she is scared because this attractive man might be her cousin.

The man sticks out his hand and says, 'Hi, I'm Paul.'  
'Hi, I'm Penny,' Penny says. 'Are we related?'

Paul laughs. 'No, we are not related. I am Vernon's nurse. He is sick and needs to keep me close by. But he did not want to miss this barbecue!'

'Oh, thank goodness,' Penny says and then blushes. Penny always blushes when she is nervous, embarrassed, or hot; right now, she is all three.

Handsome Paul laughs and asks, 'Would you like to get a hamburger with me? They smell delicious.' Penny smiles, 'Sure. I love hamburgers!'

## **Scoring**

The story recall test is scored based on the number of correctly recalled key elements from the story. Each correctly recalled element earns 1 point, with a maximum score of 5 points for both immediate recall and delayed recall.

<b>Total score</b>	<b>Interpretation</b>
<b>0 - 2</b>	May suggest severe impairment
<b>3 - 4</b>	May suggest mild to moderate impairment
<b>5</b>	Indicates normal performance

## **4. Digit span test**

Inform the patient that you will read a sequence of numbers aloud, one at a time. The patient must repeat the sequence in the same order (forward recall). If they successfully repeat the sequence, the next sequence will increase by one digit. If they make a mistake, the test should stop.

After completing the forward recall section, repeat the process with backward recall, where the patient must recall the sequence in reverse order.

<b>Forward recall</b>	<b>Backward recall</b>
Start with two-digit sequences and increase by one digit with each correct response.  2 digits → 39 3 digits → 416 4 digits → 7284 5 digits → 93526 6 digits → 284917 7 digits → 5632084 8 digits → 74159263 9 digits → 482719536	Start with two-digit sequences and increase by one digit with each correct response.  2 digits → 61 3 digits → 842 4 digits → 9271 5 digits → 50396 6 digits → 728304 7 digits → 4917652 8 digits → 23841795 9 digits → 672849531

## **Scoring**

The Digit Span Test is scored based on the number of correctly recalled sequences. Each correctly recalled sequence earns 1 point, with a maximum score of 8 points for both forward recall and backward recall. The total maximum score is 16 points (8 for forward recall + 8 for backward recall).

<b>Total score</b>	<b>Interpretation</b>
<b>0 - 5</b>	May suggest severe impairment
<b>6 - 11</b>	May suggest mild to moderate impairment
<b>12 - 16</b>	Indicates normal performance

THIS IS **NOT** A DIAGNOSTIC TOOL

## References

Woods, D. L., Kishiyama, M. M., Lund, E. W., Herron, T. J., Edwards, B., Poliva, O., Hink, R. F., & Reed, B. (2011). Improving digit span assessment of short-term verbal memory. *Journal of Clinical and Experimental Neuropsychology*, 33(1), 101–111. <https://doi.org/10.1080/13803395.2010.493149>

Skirrow, C., Meszaros, M., Meepegama, U., Lenain, R., Papp, K. V., Weston, J., & Fristed, E. (2022). Validation of a remote and fully automated story recall task to assess for early cognitive impairment in older adults: Longitudinal case-control observational study. *JMIR aging*, 5(3), e37090. <https://doi.org/10.2196/37090>

Zhang, X., Lv, L., Min, G., Wang, Q., Zhao, Y., & Li, Y. (2021). Overview of the complex figure test and its clinical application in neuropsychiatric disorders, including copying and recall. *Frontiers in Neurology*, 12, 680474. <https://doi.org/10.3389/fneur.2021.680474>