



Word Pairs 1 (Verbal Short-Term Memory) and Word Pairs 2 (Verbal Memory, Delayed Recall)

The Word Pairs Tests are used to assess memory, learning, and associative abilities, specifically evaluating the following cognitive skills:

- **Verbal Memory:** The ability to retain and recall heard or read words.
- **Associative Learning:** The ability to make connections between unrelated words.
- **Long-Term Memory:** The capacity to store and retrieve information over extended periods.

These tests provide insights into cognitive abilities that may be impaired due to acquired brain injuries (e.g., from stroke or traumatic brain injury) and neurological developmental disorders (e.g., ADHD, learning disabilities). They help identify and evaluate memory and learning disorders, as well as age-related conditions such as Mild Cognitive Impairment (MCI).

Procedure:

Participants are presented with several pairs of unrelated words (e.g., clock – hare) that they must memorize. After a brief pause, the second word (e.g., hare) must be recalled when the first word (clock) is displayed. This phase may include multiple rounds. [Word Pairs 1 (Verbal Short-Term Memory)]

After the participant is distracted by at least three subsequent screenings, they will be asked again to recall the word pairs. [Word Pairs 2 (Verbal Memory, Delayed Recall)]

Results interpretation

percentile rank \leq 2% as “strongly impaired”

percentile rank \leq 7% as “impaired”

percentile rank \leq 16% as “lower average”

all other results as “normal” or better

Automatic training program recommendation

If the performance in a test is “lower average” or worse, suitable training programs are suggested.

Pathfinder Test (Visual-Spatial Attention)

The Pathfinder Test measures the following cognitive abilities:

- **Information Processing Speed:** The speed at which information is received, processed, and responded to.
- **Care Performance:** Visual-spatial attention, concentration, accuracy, and cognitive flexibility (the ability to flexibly shift attention and change problem-solving strategies).
- **Laterality:** Delays in the right or left visual field, which may indicate neglect or hemianopsia.

The test evaluates cognitive functions across different populations. It identifies impairments in adults related to dementia and neurological disorders, as well as early signs of dementia or MCI in older adults. Attention disorders and learning difficulties are assessed in children and adolescents.

Procedure (The test consists of two parts):

Part 1: Randomly arranged numbers from 1 to 20 appear on the screen. The participant's task is to click or tap these numbers in ascending order as quickly and accurately as possible.

Part 2: Numbers and letters appear on the screen. Participants must click or tap the elements in ascending order, starting with the number 1, followed by the letter A, then number 2, letter B, and so on. The task should be completed as quickly and accurately as possible.

Results interpretation

percentile rank \leq 2% as “strongly impaired”

percentile rank \leq 7% as “impaired”

percentile rank \leq 16% as “lower average”

all other results as “normal” or better

Automatic training program recommendation

If the performance in a test is “lower average” or worse, suitable training programs are suggested.

Image Builder (Spatial Cognition)

The Building Pictures Test measures a person's ability to recognize spatial relationships and structures, process visual information quickly, and solve problems effectively. The speed at which tasks related to spatial perception are completed is evaluated.

This test can be used for both adults and children in connection with various disorders and conditions such as dementia, acquired brain injury, and attention deficits or learning difficulties.

Procedure:

Participants receive a template of a picture and must reconstruct it using a set of blocks. The accuracy of arrangement and the precision of the reconstruction are assessed based on both accuracy and time.

Results interpretation

percentile rank \leq 2% as “strongly impaired”

percentile rank \leq 7% as “impaired”

percentile rank \leq 16% as “lower average”

all other results as “normal” or better

Automatic training program recommendation

If the performance in a test is “lower average” or worse, suitable training programs are suggested.

Number Sort (Working Memory)

The Ordering Numbers Test measures the capacity of working memory, specifically the ability to store and process information in the short term. It assesses:

- **Short-Term Memory:** The ability to retain a limited amount of information for brief periods.
- **Working Memory:** The ability to actively manipulate this information, in this case, by sorting it in ascending order.
- **Processing Speed:** How quickly a person can arrange the numbers correctly.
- **Cognitive Flexibility and Attention:** The ability to concentrate on the task and correctly sort the numbers, even as the task becomes more challenging.

The test is used to evaluate attention and memory disorders such as ADHD, learning disabilities, and dementia, and it measures the capacity of working memory, which is crucial for problem-solving and learning processes. It supports the neurocognitive assessment of brain injuries by revealing deficits in short-term memory and information processing. Additionally, it helps assess learning disabilities and identifies cognitive abilities and early signs of age-related decline or dementia in older adults.

Procedure:

A series of numbers is presented randomly on the screen. The participant must remember the numbers and then arrange them in ascending order. The number of digits to remember and sort gradually increases. The test is time-limited, and results are evaluated based on correctness and the time taken.

Results interpretation

percentile rank \leq 2% as “strongly impaired”

percentile rank \leq 7% as “impaired”

percentile rank \leq 16% as “lower average”

all other results as “normal” or better

Automatic training program recommendation

If the performance in a test is “lower average” or worse, suitable training programs are suggested.

Word Finding (Language)

The Word Finding Test assesses a person's verbal abilities and speech production. The time constraint also tests the speed of word retrieval and cognitive flexibility.

The Word Finding Test evaluates:

- **Verbal Abilities:** The ability to quickly and accurately find relevant words related to a specific category.
- **Cognitive Flexibility:** The participant must flexibly switch between various word options and select appropriate terms from a potential pool.
- **Vocabulary and Speech Production:** The test provides insights into the breadth of vocabulary and the ability to actively produce speech.
- **Reaction Speed:** The time constraint measures how quickly the participant can find the corresponding words, indicating the efficiency of information processing.
- **Memory Performance:** The test may also assess the ability to retrieve information from memory, as the participant must recall suitable words.

The test can provide indications of speech disorders, cognitive impairments, or memory issues, making it useful in diagnosing conditions such as dementia, stroke, traumatic brain injury, aphasia, attention deficits, and learning difficulties.

Procedure:

Participants must find appropriate words for given categories. Unscrambled letters are provided as a tool, and there is a time limit.

Results interpretation

percentile rank \leq 2% as “strongly impaired”

percentile rank \leq 7% as “impaired”

percentile rank \leq 16% as “lower average”

all other results as “normal” or better

Automatic training program recommendation

If the performance in a test is “lower average” or worse, suitable training programs are suggested.

Tower of London (Planning)

The Tower of London Test measures executive functions, particularly:

- **Planning Ability:** Anticipating, organizing, and executing steps to achieve a goal..
- **Problem-Solving Ability:** Developing and adapting strategies to overcome challenges.
- **Working Memory:** Holding and manipulating information for short-term tasks.
- **Inhibition:** Controlling impulses to focus on goal-directed actions.
- **Cognitive Flexibility:** Switching between tasks or strategies as needed.
- **Visual-Spatial Adjustment:** Perceiving and manipulating objects in space.

Deficits in executive control can occur in various disorders, including ADHD, stroke, frontal lobe lesions, autism spectrum disorders, obsessive-compulsive disorder, bipolar disorder, cognitive impairments in aging, schizophrenia, cognitive developmental disorders, and long-term effects of substance abuse. These deficits affect skills such as planning, organization, impulse control, and problem-solving.

Procedure:

Participants are required to arrange colored blocks into a designated target configuration using as few moves as possible. They must shift and reorganize the blocks into different boxes.

Results interpretation

percentile rank \leq 2% as “strongly impaired”

percentile rank \leq 7% as “impaired”

percentile rank \leq 16% as “lower average”

all other results as “normal” or better

Automatic training program recommendation

If the performance in a test is “lower average” or worse, suitable training programs are suggested.

Wellbeing Questions (Geriatric Depression Scale)

This questionnaire is designed to assess the overall well-being of older adults. The questions aim to identify emotional and psychological disorders, such as depression, at an early stage, thus providing valuable information for treatment planning.

Procedure:

The test consists of questions about current feelings and experiences, with various answer options provided. Participants select the response that best fits their situation, focusing on feelings, thoughts, and behaviors.

percentile rank \leq 2% as “strongly impaired” / percentile rank \leq 7% as “impaired”
percentile rank \leq 16% as “lower average” / all other results as “normal” or better

In cases where depression is a concern, it may be necessary to recommend additional support strategies alongside HeadApp. These could include therapies like cognitive behavioral therapy (CBT), mindfulness practices, or other mental health programs that specifically target emotional well-being. Such interventions can help improve mood, reduce stress, and build emotional resilience, complementing the insights gained from the Wellbeing Questions (Geriatric Depression Scale) and ADL assessments.

ADL Questions (Geriatric Every Day Skills)

This questionnaire assesses the ability of older adults to independently manage daily activities. Daily living skills play a crucial role in the quality of life and overall well-being in older age. Evaluating these abilities allows for targeted support services to improve quality of life and maintain independence for as long as possible.

Procedure:

Participants are presented with various daily living scenarios and must indicate how frequently they encounter these situations in their daily lives. Multiple answer options are available, from which they select the most applicable response.

Results interpretation

percentile rank \leq 2% as “strongly impaired” / percentile rank \leq 7% as “impaired”
percentile rank \leq 16% as “lower average” / all other results as “normal” or better

Automatic training program recommendation

If the performance in a test is “lower average” or worse, suitable training programs are suggested.