WMS®5

Wechsler Memory Scale®

Fifth Edition

Administration and Scoring Manual

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Lisa Whipple Drozdick, PhD

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Chapter 1. Introduction

The Wechsler Memory Scale® (5th ed.; WMS®-5) is a performance-based, individually administered battery designed to assess various memory and working memory abilities in individuals ages 16 years 0 months through 90 years 11 months (16:0–90:11). It is a revision of the Wechsler Memory Scale (4th ed.; WMS–IV; Wechsler, 2009) and retains many features of the previous version, including a brief screener of cognitive status and developmentally appropriate item sets for adults (ages 16–69) and older adults (ages 70–90). Consistent with previous editions of the WMS the normative sample was co-collected and co-normed with the Wechsler Adult Intelligence Scale® (5th ed.; WAIS®-5; Wechsler, 2024). New to the WMS-5 are several forms, including an Immediate Memory Screener and a Short Form. A WMS-5 Alternate Form is also available for repeated testing. Two administration formats are available for the WMS-5: traditional paper and digital administration on Q-interactive®. The paper WMS-5 can be scored by hand or with Q-global®, Pearson's online scoring and reporting platform.

The WMS-5 provides a detailed assessment of clinically relevant aspects of memory functioning commonly reported in individuals with suspected memory deficits or diagnosed with a range of neurological, psychiatric, and developmental disorders. Clinicians practicing in psychiatric, medical, educational, forensic, counseling, or any clinical setting will find the WMS-5 a useful component of their assessment battery.

This manual provides the user with recording and scoring procedures for the WMS-5 subtest, index, process, and contrast scores. Specific administration instructions are provided in the stimulus books. Chapter 1 provides an overview of the WMS-5, focusing on the content and scores, user qualifications and responsibilities, and the appropriate use of the scale across different situations and populations. General administration and scoring guidelines and detailed instructions on correctly completing the summary pages of the Standard Record Form are presented in Chapter 2. Subtest-specific administration directions are included in the stimulus books or on Q-interactive. Detailed recording and scoring instructions are in Chapter 3.

Detailed scoring criteria for items on the Brief Cognitive Status Exam, Logical Memory, Logical Memory (Alternate), Visual Reproduction, and Visual Reproduction (Alternate) subtests are in the appendixes along with the norms and tables. Tables for substituting scores from the Standard Form of the California Verbal Learning Test® (3rd ed.; CVLT® 3; Delis et al., 2017) for Verbal Paired Associates subtest scores when calculating the index scores are also included in the appendixes.

The *WMS-5 Technical and Interpretive Manual* (Wechsler et al., 2025) contains detailed information on the research and development of the WMS-5. Additional information on the standardization sample, the psychometric properties of the batteries, and general guidelines for clinical interpretation are included as well. In addition, WAIS-5 users can find the tables required to complete ability-memory discrepancy analyses in the appendixes of the *WMS-5 Technical and Interpretive Manual.*

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Content and Structure of the WMS-5

Subtest Content and Description

The WMS-5 includes three forms and a screener,, which are described in depth later in this chapter: the Standard Form, the Short Form, the Alternate Form, and the Immediate Memory Screener. The WMS-5 Standard Form contains a total of seven subtests, the Short Form contains a total of three subtests, and the Alternate Form contains two subtests. Table 1.1 lists the WMS-5 subtests across all forms and provides a brief description of each.

Four subtests (Logical Memory, Visual Reproduction, Verbal Paired Associates, and Designs) are separated into two conditions: the immediate condition (1) and the delayed condition (2), which are administered about 10–30 minutes apart. The delayed conditions include separate delayed free recall and recognition tasks. Several subtests also include optional tasks to help differentiate specific cognitive and memory processes involved in completing the subtest. The Immediate Memory Screener contains the immediate conditions appropriate for the examinee's age.

Table 1.1 Subtest Abbreviations and Descriptions

Subtest	Abbreviation	Description
Brief Cognitive Status Exam (all ages)	BCSE	This optional subtest is used to assess a variety of cognitive functions. The examinee performs simple tasks in several different areas, including orientation to time, mental control, clock drawing, incidental recall, automaticity and inhibitory control, and verbal production.
Logical Memory **Logical Memory (Alternate)** **(all ages)**	LM 1 LM 1 (ALT)	This subtest is used to assess narrative memory under a free recall condition. In the immediate condition, two short stories are orally presented. For ages 70–90, one of the stories is presented twice. The examinee is asked to retell each story from memory immediately after it is presented.
	LM 2 LM 2 (ALT)	The delayed condition is used to assess long-term narrative memory with free recall and recognition tasks. The examinee is asked to retell both stories from the immediate condition. Then the examinee is asked questions about both stories to assess recognition of the story details.
Visual Reproduction **Visual Reproduction (Alternate)** **(all ages)**	VR 1 VR 1 (ALT)	This subtest is used to assess memory for nonverbal visual stimuli. In the immediate condition, four designs are shown, one at a time, for 10 seconds each. Each design is shown to the examinee twice. After each design is presented, the examinee draws the design from memory.
	VR 2 VR 2 (ALT)	The delayed condition is used to assess long-term visual-spatial memory with free recall and recognition tasks and includes an optional copy task. First, the examinee is asked to draw the designs shown during the immediate condition from memory, in any order. Second, the examinee is asked yes/no questions to assess recognition of the design's details. Third, the examinee draws the designs while the design is in view.
Verbal Paired Associates **(all ages)**	VPA 1	This subtest is used to assess verbal memory for associated word pairs. In the immediate condition, after 10 or 14 word pairs are read to the examinee, the first word of each pair is read, and the examinee is asked to provide the corresponding word. The same list is read, in different orders, across three trials.
	VPA 2	The delayed condition is used to assess long-term recall for verbally paired information with cued recall and recognition tasks and includes an optional free recall task. The examinee is orally presented with the first word of each pair presented in the immediate condition and asked to provide the corresponding word. The examinee is then asked yes/no questions about the word pairs to assess recognition. Finally, for the optional word recall task, the examinee is asked to say as many words from the pairs as they can recall.

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Table 1.1 Subtest Abbreviations and Descriptions *(continued)*

Subtest	Abbreviation	Description
Designs (ages 16–69)	DE 1	This subtest is used to assess spatial memory for unfamiliar visual material. In the immediate condition, the examinee is shown a grid with 6 designs on a page for 10 seconds, which is then removed from view. The examinee recalls the correct designs from a set of cards and responds by selecting the cards and placing them into a grid. The response requirements for the digital administration of this subtest differ from the paper administration. Examinees select a design card from an array presented on the device and respond by dragging and dropping the card onto a grid.
	DE 2	The delayed condition is used to assess long-term spatial and visual memory with free recall and recognition tasks. First, the examinee is asked to recreate the pages shown in the immediate condition with the cards and grid by selecting the correct designs from a set of cards and placing them in the correct locations on the grid. Then they are shown a series of grids and asked to select the designs that are correct and in the same place as on the pages shown in the immediate condition. The response requirements for the digital administration of this subtest differ from the paper administration, see the above description in DE 1 for details.
Symbol Span (all ages)	SSP	This subtest is used to assess visual working memory using novel visual stimuli. The examinee views a stimulus page of one or more abstract symbol(s) for a specified time and then selects the symbol(s) in sequential order from options on a response page.
Spatial Addition (all ages)	SA	This subtest is used to assess visual-spatial working memory using a visual addition task. The examinee is shown, sequentially, two grids with either blue circles only or both blue and red circles for a specified time. The examinee then creates a new grid by combining the circles based on a set of rules. The response requirements for the digital administration of this subtest differ from the paper administration. Examinees select the desired "chip" from chips presented below a response grid and respond by dragging and dropping the "chip" to locations on a grid.

Subtest Changes from WMS–IV to WMS-5

The WMS-5 maintains the same subtests from the WMS–IV with updated content for the Standard Form to enhance the psychometric properties of the subtests and contemporize items. A detailed discussion of the changes made to the WMS for the fifth edition can be found in Chapter 1 of the *WMS-5 Technical and Interpretive Manual*. The following is a brief summary of the changes made to the WMS-5 subtests.

Brief Cognitive Status Exam

- Scoring for the Verbal Production item was changed from tallying correct responses to subtracting the total number of incorrect responses (i.e., intrusions and repetitions) from the total number of correct responses.

Logical Memory

- Stories were updated with attention to developmental sensitivity across the lifespan and contemporary themes.
- Logical Memory (Alternate), an alternate form of the subtest, was created using the stories from WMS–IV.

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Visual Reproduction

- All designs were updated.
- The administration of Visual Reproduction 1 includes two trials to facilitate additional learning and consolidation of visual memory, and the number of items was reduced from five to four to reduce additional testing time associated with the learning trials.
- The number of items in the recognition condition was increased and changed to yes/no forced-choice questions as opposed to multiple-choice questions.
- Visual Reproduction (Alternate), an alternate form of the subtest, was created using four of the designs from WMS–IV. Visual Reproduction (Alternate) follows the same administration procedures as the Visual Reproduction subtest for the Standard Form.

Verbal Paired Associates

- The word-pair list remains largely the same, one word pair from the WMS–IV was replaced, and the number of learning trials was reduced from four to three.

Designs

- The number of items was reduced from four to three, and the number of responses across items is held constant as opposed to the WMS–IV in which the number of responses increased across items.
- The scoring was changed to provide greater differentiation on spatial performance and award greater bonus points on the hardest card placements for each item.
- The recognition condition is now a forced-choice response format instead of multiple-choice.

Symbol Span

- The total number of items was reduced; otherwise, the content for this subtest remains the same as the previous edition.

Spatial Addition

- This subtest covers the full age range. Items were added to improve the psychometric properties for individuals at the lower end of the ability spectrum, and the overall number of items was reduced.

WMS-5 Forms

Standard Form

The Standard Form of the WMS-5 consists of all subtests and provides the most in-depth information about the examinee's short- and long-term memory and visual working memory functioning. For examinees ages 16–69, the battery consists of the Brief Cognitive Status Exam (optional), Logical Memory 1 and 2, Visual Reproduction 1 and 2, Verbal Paired Associates 1 and 2, Designs 1 and 2, Symbol Span, and Spatial Addition. For examinees ages 70–90, the same battery minus Designs 1 and 2 is administered. The Standard Form can be used when the examinee requires a comprehensive assessment of memory and visual working memory.

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Short Form

The Short Form of the WMS-5 is a brief battery of subtests that can be used to sample immediate and delayed recall for orally and visually presented information as well as visual working memory. The battery consists of Logical Memory 1 and 2, Visual Reproduction 1 and 2, and Symbol Span. The Short Form of the WMS-5 can be used when examinee characteristics or time constraints require a shorter battery.

Alternate Form

The Alternate Form is a parallel version of selected subtests from the WMS-5. It consists of the alternate versions of the Logical Memory 1 and 2 and Visual Reproduction 1 and 2 subtests. Content from the WMS–IV for these subtests was largely maintained for the WMS-5 Alternate Form to facilitate continuity between the different editions of the test. The Visual Reproduction subtest for the WMS-5 Alternate Form differs from the WMS–IV in that the number of items was reduced from five to four, and the multitrial exposure administration procedures introduced in the WMS-5 are used instead of the single-trial learning procedure of the WMS–IV. Additionally, the yes/no forced-choice format used on the recognition task of the WMS-5 Standard Form was adopted for the Alternate Form. The Alternate Form of the WMS-5 can be used when the examinee requires a follow-up memory assessment and the examiner wants to minimize procedural learning or long-term retention of information affecting test scores. Examiners may also use the WMS-5 Alternate Form when the use of WMS–IV test content is preferred.

Immediate Memory Screener

The Immediate Memory Screener for the WMS-5 is embedded in the Standard Form and allows the examiner to administer the immediate recall conditions to screen for memory weaknesses. If further memory testing is warranted, then administration can continue with the Standard Form. The Immediate Memory Screener consists of the four immediate recall conditions for examinees ages 16–69 or the three immediate recall conditions for examinees ages 70–90. Descriptions in this manual of the immediate recall subtests and scores from the Standard Form are applicable to the Immediate Memory Screener.

WMS-5 Scores

Primary Subtest Scaled Scores

Most subtests provide multiple scores. The primary subtest scaled scores describe the overall or main abilities involved in the subtest. For the subtests that have immediate and delayed conditions, scaled scores are provided separately for immediate recall and delayed recall. The WMS-5 primary subtest scores are scaled on a metric with a mean of 10 and a standard deviation of 3.

Index Scores

Similar to the WMS–IV, scores from the WMS-5 subtests are organized into summary index scores. Index scores are either primary or ancillary. Primary index scores capture the main domains measured in the WMS-5, while ancillary index scores capture more specific aspects of performance. Only primary index scores are provided for the Short and Alternate Forms.

Table 1.2 lists the index scores, their abbreviations, and a brief description of each index for the three WMS-5 forms. Each of the WMS-5 subtests generates multiple scores, and only a limited number of scores contribute to the index scores. The index scores represent general abilities and are the initial interpretive focus. The WMS-5 index scores are scaled on a metric with a mean of 100 and a standard deviation of 15.

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Table 1.2 Index Score Abbreviations and Descriptions

Index score	Abbreviation	Description
Standard Form		
Primary index scores		
Auditory Memory	AMI	Indicates the examinee's ability to remember orally presented information. Scores from Logical Memory 1 and 2 and Verbal Paired Associates 1 and 2 contribute t this index.
Visual Memory	VMI	Indicates the examinee's ability to remember visually presented information. Scores from Visual Reproduction 1 and 2 and Designs 1 and 2 (for ages 16–69) contribute to this index.
Visual Working Memory	VWMI	Indicates the examinee's capacity to remember and manipulate visually presented information in short-term memory storage. Scores from Symbol Span and Spatial Addition contribute to this index.
Immediate Memory	IMI	Indicates the examinee's ability to remember both visually and orally presented information immediately after it is presented. Scores from Logical Memory 1, Verbal Paired Associates 1, Visual Reproduction 1, and Designs 1 (for ages 16–69) contribute to this index.
Delayed Memory	DMI	Indicates the examinee's ability to remember both visually and orally presented information 10–30 minutes after it is presented. Scores from the delayed recall conditions of Logical Memory 2, Verbal Paired Associates 2, Visual Reproduction 2, and Designs 2 (for ages 16–69) contribute to this index.
Ancillary index scores		
Auditory Immediate Memory	AII	Indicates the examinee's ability to remember orally presented information immediately after it is presented. Scores from Logical Memory 1 and Verbal Paired Associates 1 contribute to this index.
Auditory Delayed Memory	ADI	Indicates the examinee's ability to remember orally presented information 10–30 minutes after it is presented. Scores from the delayed recall conditions of Logical Memory 2 and Verbal Paired Associates 2 contribute to this index.
Auditory Recognition Memory	ARI	Indicates the examinee's ability to recognize orally presented information 10–30 minutes after it is presented. Scores from the recognition conditions of Logical Memory 2 and Verbal Paired Associates 2 contribute to this index.
Visual Immediate Memory (ages 16–69)	VII	Indicates the examinee's ability to remember visually presented information immediately after it is presented. Scores from Visual Reproduction 1 and Designs 1 contribute to this index.
Visual Delayed Memory (ages 16–69)	VDI	Indicates the examinee's ability to remember visually presented information 10–30 minutes after it is presented. Scores from the delayed recall conditions of Visual Reproduction 2 and Designs 2 contribute to this index.
Visual Recognition Memory (ages 16–69)	VRI	Indicates the examinee's ability to recognize visually presented information 10–30 minutes after it is presented. Scores from the recognition conditions of Visual Reproduction 2 and Designs 2 contribute to this index.
Designs Content (ages 16–69)	DCI	Indicates the examinee's ability to remember designs both immediately and 10–30 minutes after they are presented. Content scores from Designs 1 and 2 contribute to this index.
Designs Spatial (ages 16–69)	DSI	Indicates the examinee's ability to remember the location of designs both immediately and 10–30 minutes after they are presented. Spatial scores from Designs 1 and 2 contribute to this index.
Multitrial Learning	MTLI	Indicates the examinee's ability to remember both visually and orally presented information immediately after its final presentation in a subtest. Scores from Verbal Paired Associates 1 Recall C, Trial 2 of the Visual Reproduction 1 items, and the second recall of Story A from Logical Memory 1 (for ages 70–90) contribute to this score.
Single-Trial Learning	STLI	Indicates the examinee's ability to remember both visually and orally presented information immediately after its first presentation in a subtest. Scores for Recall A of Verbal Paired Associates 1, Trial 1 of Visual Reproduction 1, the first recall of Story A and Story B from Logical Memory 1 (for ages 70–90), Logical Memory 1 (ages 16–69), and Designs 1 (for ages 16–69) contribute to this score.

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Table 1.2 Index Score Abbreviations and Descriptions *(continued)*

Index score	Abbreviation	Description
Short Form		
Auditory Memory	AMI (LM)	Indicates the examinee's ability to remember orally presented information. Scores from Logical Memory 1 and 2 contribute to this index.
Visual Memory	VMI (VR)	Indicates the examinee's ability to remember visually presented information. Scores from Visual Reproduction 1 and 2 contribute to this index.
Immediate Memory	IMI (LMVR)	Indicates the examinee's ability to remember both visually and orally presented information immediately after it is presented. Scores from Logical Memory 1 and Visual Reproduction 1 contribute to this index.
Delayed Memory	DMI (LMVR)	Indicates the examinee's ability to remember both visually and orally presented information 10–30 minutes after it is presented. Scores from the delayed recall conditions of Logical Memory 2 and Visual Reproduction 2 contribute to this index.
Alternate Form		
Auditory Memory	AMI (ALT)	Indicates the examinee's ability to remember orally presented information. Scores from Logical Memory 1 and 2 (Alternate) contribute to this index.
Visual Memory	VMI (ALT)	Indicates the examinee's ability to remember visually presented information. Scores from Visual Reproduction 1 and 2 (Alternate) contribute to this index.
Immediate Memory	IMI (ALT)	Indicates the examinee's ability to remember both visually and orally presented information immediately after it is presented. Scores from Logical Memory 1 (Alternate) and Visual Reproduction 1 (Alternate) contribute to this index.
Delayed Memory	DMI (ALT)	Indicates the examinee's ability to remember both visually and orally presented information 10–30 minutes after it is presented. Scores from the delayed recall conditions of Logical Memory 2 (Alternate) and Visual Reproduction 2 (Alternate) contribute to this index.

Process Scores

Process scores provide additional insight into an examinee's specific abilities and skills. Process scores are expressed as scaled scores or as cumulative percentages. For example, Logical Memory 2 provides scaled scores describing performance on individual story recall and cumulative percentages for performance on the recognition of details from individual stories. Table 1.3 lists the process scores included in the WMS-5 by subtest and form for the Standard and Short Forms. A limited number of process scores are available for the Alternate Form; specifically, the Logical Memory and Visual Reproduction Recognition task cumulative percentages and the Visual Reproduction Copy task cumulative percentage.

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Table 1.3 Process Scores by Subtest and Form

Subtest	Process score	Score type
Logical Memory (Standard and Short Form)	LM 1 Story A First Recall (ages 70–90)	Scaled score
	LM 1 Story A Second Recall (ages 70–90)	Scaled score
	LM 1 & 2 Story A (ages 70–90)	Scaled score
	LM 1 & 2 Story B	Scaled score
	LM 1 & 2 Story C (ages 16–69)	Scaled score
	LM 2 Recognition	Cumulative percentage
	LM 2 Recognition Story A (ages 70–90)	Cumulative percentage
	LM 2 Recognition Story B	Cumulative percentage
	LM 2 Recognition Story C (ages 16–69)	Cumulative percentage
Verbal Paired Associates (Standard Form)	VPA 1 Recall A	Scaled score
	VPA 1 Recall C	Scaled score
	VPA 1 Easy Items	Scaled score
	VPA 1 Hard Items	Scaled score
	VPA 1 Total Intrusions	Scaled score
	VPA 2 Easy Items	Cumulative percentage
	VPA 2 Hard Items	Cumulative percentage
	VPA 2 Total Intrusions	Cumulative percentage
	VPA 1 & 2 Extra-List Intrusions	Cumulative percentage
	VPA 1 & 2 Intra-List Intrusions	Cumulative percentage
	VPA 2 Recognition	Cumulative percentage
	VPA 2 Recognition Easy Items	Cumulative percentage
	VPA 2 Recognition Hard Items	Cumulative percentage
	VPA 2 Recognition Hits	Cumulative percentage
	VPA 2 Recognition False Positives	Cumulative percentage
	VPA 2 Recognition Discriminability	Cumulative percentage
	VPA 2 Word Recall Correct	Scaled score
	VPA 2 Word Recall Intrusions	Cumulative percentage
	VPA 2 Word Recall Repetitions	Cumulative percentage
Visual Reproduction (Standard and Short Form)	VR 1 Trial 1 & Trial 2	Scaled score
	VR 1 & 2 Average Completion Time	Scaled score
	VR 1 & 2 Additional Design Elements	Cumulative percentage
	VR 2 Recognition	Cumulative percentage
	VR 2 Copy	Cumulative percentage
Designs (ages 16–69) (Standard Form)	DE 1 & 2 Content	Scaled score
	DE 1 & 2 Spatial	Scaled score
	DE 2 Recognition	Cumulative percentage

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Discrepancy Analysis

The WMS-5 provides simple-difference discrepancy analyses to determine the statistical and clinical significance of differences between scores. An in-depth discussion of these scores and the limitations of this methodology are described in the *WMS-5 Technical and Interpretive Manual*, and it is recommended that clinicians utilize the contrast score methodology for the interpretation of differences between scores. Subtest-level differences within index scores allow for the comparison of individual subtest scaled scores against the average subtest scaled score contributing to a particular index score. When evaluated for statistical and clinical significance, this difference score provides some information about the degree of variability in performance across subtests contributing to an index score, which can inform the interpretation of the index score and help determine next steps for hypothesis testing, if needed. Subtest-level differences within index scores are provided for the AMI, VMI, IMI, and DMI. Subtest-level differences are provided for index scores where only two subtests contribute to the index (i.e., the Visual Working Memory Index for all ages and the Visual Memory Index for examinees ages 70–90).

Two types of discrepancy analyses are provided for comparing selected WAIS-5 index scores and WMS-5 index scores, the predicted-difference method and the simple-difference method. The predicted-difference method considers the correlation between the two index scores to make a predicted score of the measure of interest controlling for the other related measure. The statistical and clinical significance of the difference between the predicted score and the obtained score is interpreted. The simple-difference method subtracts the WMS-5 index score of interest from the WAIS-5 index score of interest, and the statistical and clinical difference between the two is interpreted. Predicted-difference ability-memory discrepancy analyses are provided for the WAIS-5 General Ability Index (GAI), Verbal Comprehension Index (VCI), and Visual Spatial Index (VSI) and the five primary WMS-5 index scores. Simple-difference ability-memory discrepancy analyses are provided for the WAIS-5 GAI, VCI, VSI, and all WMS-5 index scores (except for the MTLI and STLI) that are available based on the examinee's age.

Contrast Scaled Scores

Most WMS-5 subtests offer contrast scaled scores, particularly those with immediate and delayed recall and recognition conditions. The contrast scaled scores are designed to allow the examiner to compare higher to lower-level cognitive functions (e.g., recall versus recognition) or to differentiate statistically between modalities of presentation (e.g., oral versus visual).

Contrast scores apply a scaled score metric to score comparisons within or between subtests or indexes, providing information on the performance of a higher-level skill or ability while controlling for a lower-level or more basic skill. For example, one WMS-5 contrast scaled score reflects an examinee's ability to recall a set of newly learned designs after a delay controlling for their ability to learn the information when first exposed to it (e.g., immediate recall versus delayed recall). Additionally, the examiner may wish to compare a similar cognitive construct across different presentation modalities. For example, the examiner can compare auditory memory versus visual memory scores using the contrast score methodology. The ability-memory contrast scaled scores reflect an examinee's ability on the WMS-5, controlling for their ability level as determined by the WAIS-5. Ability-memory contrast scores are available for the Standard Form only, there are no ability-memory contrast scores available for the Short and Alternate Forms. Table 1.4 lists the contrast scaled scores for the three forms of the WMS-5.

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Table 1.4 Subtest and Index Contrast Scaled Scores by Form

Contrast score level	Score
Subtest contrast scaled scores (Standard Form)	LM 1 Immediate Recall vs. LM 2 Delayed Recall
	LM 2 Recognition vs. LM 2 Delayed Recall
	LM 1 Story A First Recall vs. LM 1 Story A Second Recall (ages 70–90)
	LM 1 Story A First Recall vs. LM 2 Story A Delayed Recall (ages 70–90)
	LM 1 Story B Immediate Recall vs. LM 2 Story B Delayed Recall
	LM 1 Story C Immediate Recall vs. LM 2 Story C Delayed Recall (ages 16–69)
	VPA 1 Immediate Recall vs. VPA 2 Delayed Recall
	VPA 2 Recognition vs. VPA 2 Delayed Recall
	VPA 1 Recall A vs. VPA 1 Recall C
	VPA 1 Easy Items vs. VPA 1 Hard Items
	VR 1 Immediate Recall vs. VR 2 Delayed Recall
	VR 2 Recognition vs. VR 2 Delayed Recall
	VR 2 Copy vs. VR 1 Immediate Recall
	VR 1 Trial 1 vs. VR 1 Trial 2
	DE 1 Immediate Recall vs. DE 2 Delayed Recall (ages 16–69)
	DE 2 Recognition vs. DE 2 Delayed Recall (ages 16–69)
Subtest contrast scaled scores (Short Form)	LM 1 Immediate Recall vs. LM 2 Delayed Recall
	LM 2 Recognition vs. LM 2 Delayed Recall
	LM 1 Story A First Recall vs. LM 1 Story A Second Recall (ages 70–90)
	LM 1 Story A First Recall vs. LM 2 Story A Delayed Recall (ages 70–90)
	LM 1 Story B Immediate Recall vs. LM 2 Story B Delayed Recall
	LM 1 Story C Immediate Recall vs. LM 2 Story C Delayed Recall (ages 16–69)
	VR 1 Immediate Recall vs. VR 2 Delayed Recall
	VR 2 Recognition vs. VR 2 Delayed Recall
	VR 2 Copy vs. VR 1 Immediate Recall
	VR 1 Trial 1 vs. VR 1 Trial 2
Subtest contrast scaled scores (Alternate Form)	LM 1 Immediate Recall vs. LM 2 Delayed Recall
	LM 2 Recognition vs. LM 2 Delayed Recall
	VR 1 Immediate Recall vs. VR 2 Delayed Recall
	VR 2 Recognition vs. VR 2 Delayed Recall
	VR 2 Copy vs. VR 1 Immediate Recall
Index contrast scaled scores (Standard Form)	Auditory Memory Index vs. Visual Memory Index
	Visual Working Memory Index vs. Visual Memory Index
	Immediate Memory Index vs. Delayed Memory Index
	Auditory Immediate Memory Index vs. Auditory Delayed Memory Index
	Auditory Recognition Memory Index vs. Auditory Delayed Memory Index
	Single-Trial Learning Index vs. Multitrial Learning Index
	Visual Immediate Memory Index vs. Visual Delayed Memory Index (ages 16–69)
	Visual Recognition Memory Index vs. Visual Delayed Memory Index (ages 16–69)
	Designs Spatial Index vs. Designs Content Index (ages 16–69)

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Table 1.4 Subtest and Index Contrast Scaled Scores by Form *(continued)*

Contrast score level	Score
Index contrast scaled scores (Short Form)	Auditory Memory Index (LM) vs. Visual Memory Index (VR)
	Immediate Memory Index (LMVR) vs. Delayed Memory Index (LMVR)
Index contrast scaled scores (Alternate Form)	Auditory Memory Index (ALT) vs. Visual Memory Index (ALT)
	Immediate Memory Index (ALT) vs. Delayed Memory Index (ALT)
Ability-memory contrast scaled scores (Standard Form)	General Ability Index vs. Auditory Memory Index
	General Ability Index vs. Visual Memory Index
	General Ability Index vs. Visual Working Memory Index
	General Ability Index vs. Immediate Memory Index
	General Ability Index vs. Delayed Memory Index
	Verbal Comprehension Index vs. Auditory Memory Index
	Visual Spatial Index vs. Visual Memory Index
	Visual Spatial Index vs. Visual Working Memory Index
	Working Memory Index vs. Auditory Memory Index
	Working Memory Index vs. Visual Working Memory Index

Test Structure

Of the seven WMS-5 subtests, six are considered primary subtests and are used to derive index scores, and one subtest is optional. The primary subtest scaled scores (Logical Memory 1 and 2, Visual Reproduction 1 and 2, Verbal Paired Associates 1 and 2, Designs 1 and 2, Symbol Span, and Spatial Addition) are used to derive the five primary index scores. Primary and/or process subtest scaled scores are used to derive the ten ancillary index scores; scores can contribute to multiple index scores. Five ancillary index scores are not available for examinees ages 70–90 because these are derived, in part, from scores from the Designs subtest. The Symbol Span and Spatial Addition subtests are shared between the WAIS-5 and WMS-5 and the Visual Working Memory Index is the same across both tests. The Brief Cognitive Status Exam (BCSE) subtest is optional and may be administered to obtain additional or supplementary information, but it does not contribute to an index score. The BCSE provides an overall picture of cognitive functioning.

Figure 1.1 depicts the test framework for the primary index scores, and Figure 1.2 depicts the test framework for the ancillary index scores.

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Figure 1.1 Test Framework of the Primary Index Scores

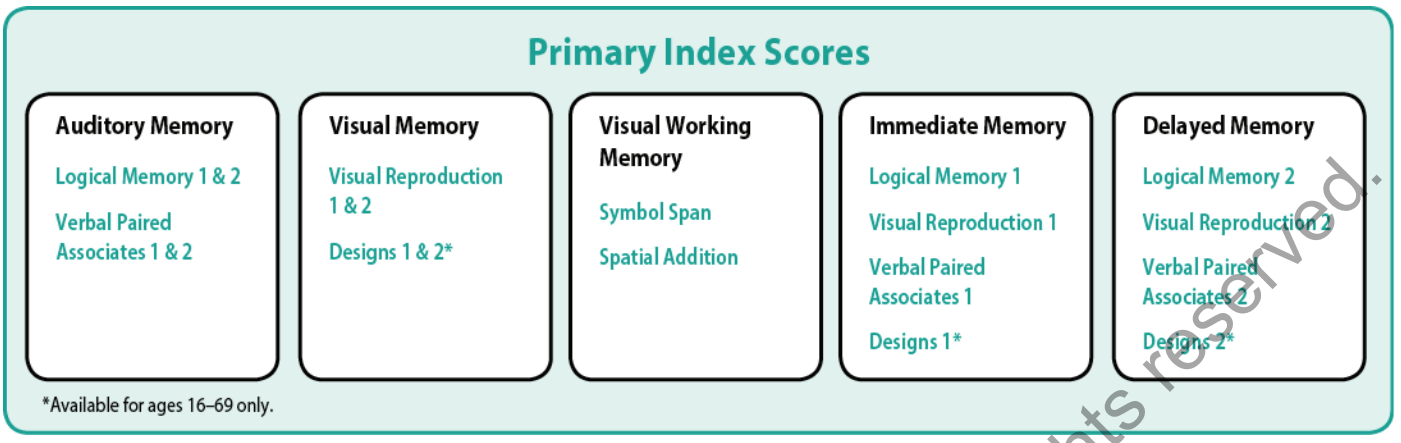
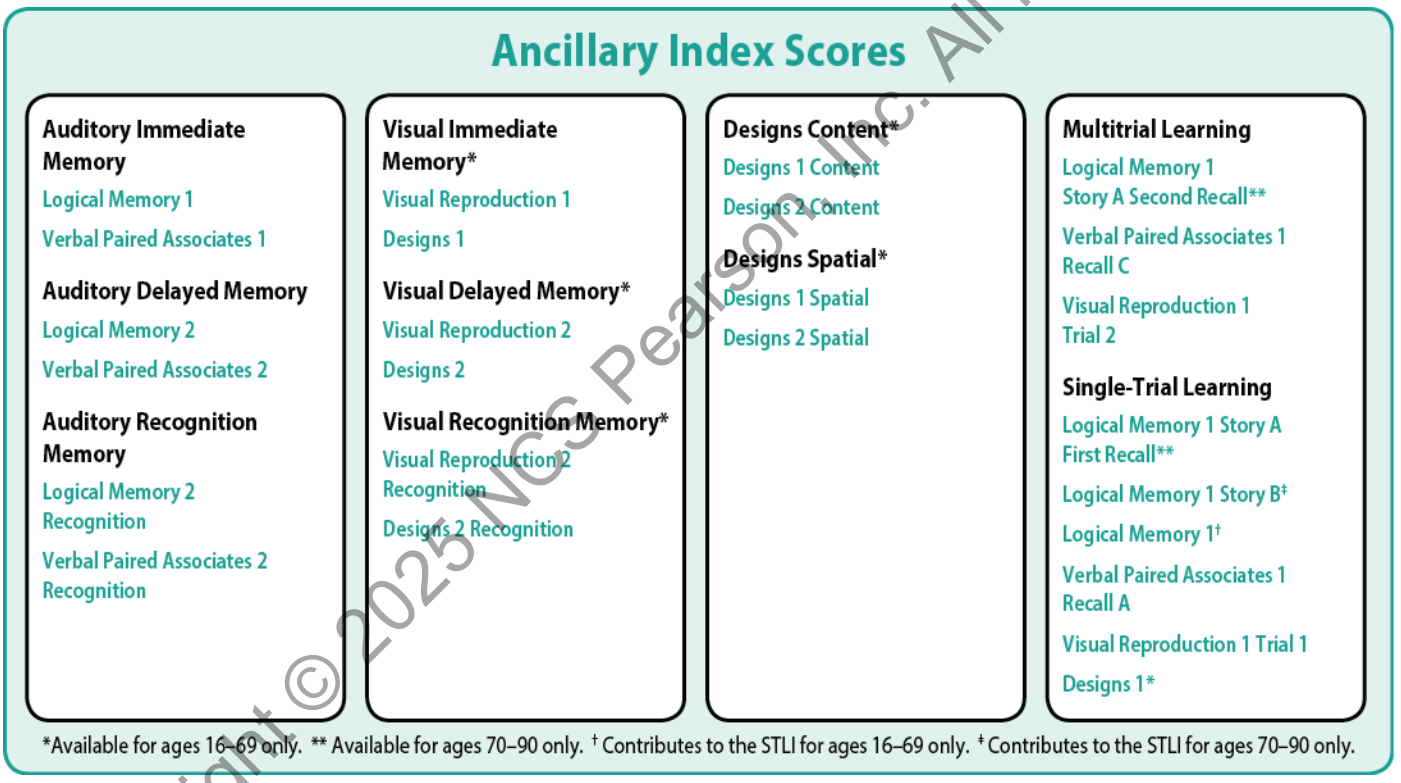


Figure 1.2 Test Framework of the Ancillary Index Scores



Like the WMS–IV, the WMS-5 allows the substitution of CVLT 3 scores when calculating the Auditory Memory, Immediate Memory, Delayed Memory, Auditory Immediate Memory, and Auditory Delayed Memory Index scores. Users of the CVLT 3 may convert the Trials 1–5 Correct and Delayed Recall Correct index scores to linked scaled scores, which may be substituted for Verbal Paired Associates 1 and Verbal Paired Associates 2 scaled scores when calculating the appropriate index scores.

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Applications

The WMS-5 is designed to provide relevant information for clinical, neuropsychological, and rehabilitation evaluations. In addition, the Wechsler Memory Scales are a standard in clinical research. Results from the WMS-5 will provide those conducting clinical research with multiple standardized scores, which should further research and knowledge of memory functioning.

As a clinical assessment instrument, the WMS-5 provides measures of important memory functions. Scores from the WMS-5, within the context of other information collected in the evaluation, will provide the examiner with a comprehensive understanding of the examinee's memory functioning and processes at a particular point in time. The subtest and index scores are intended to provide information relevant to clinical diagnosis, intervention planning, and service qualification.

The sensitivity of the WMS-5 to alterations in memory functioning indicates that it has valuable potential as a research instrument. Continued research beyond that presented in the *WMS-5 Technical and Interpretive Manual* will provide important information about the clinical utility of these measures across a wide variety of clinical groups.

Use of the WMS-5 With the WAIS-5

The WMS-5 and the WAIS-5 were co-collected to facilitate the co-norming of the tests. Previous research on earlier versions of the WAIS and WMS (Drozdick et al., 2011; Zhu & Tulsky, 2000) guided the order in which these tests were administered. Specifically, these data indicated that administration of the full WAIS before the full WMS on the same day of testing negatively impacted WMS scores, whereas administration of the full WMS before the full WAIS did not impact WAIS scores. As a result, all participants in the standardization samples receiving a WAIS-5 and WMS-5 on the same day were required to take the WMS-5 before the WAIS-5 or to take an hour break in between administrations. Examiners administering the WAIS-5 and WMS-5 on the same day should administer the WMS-5 before the WAIS-5 or provide the examinee with at least a one-hour break in between administrations.

The WMS-5 and the WAIS-5 have shared subtests in their batteries: Symbol Span and Spatial Addition. During the standardization stage, these data were collected in the WAIS-5 battery and not the WMS-5 battery. The norms and reliability and validity data reported in the WMS-5 for these subtests and the Visual Working Memory Index are identical to those reported in WAIS-5. Examiners may elect to administer the Symbol Span and Spatial Addition subtests in *either* the WMS-5 *or* the WAIS-5. However, it is not recommended that these subtests be administered in both batteries to the same examinee unless test circumstances or clinical necessity call for readministration.

The co-norming of the WMS-5 and WAIS-5 allows for the direct comparison of scores across batteries. Index discrepancy analyses and contrast scores are available to help the examiner determine the quantitative and qualitative significance of observed differences between scores. In particular, the WMS-5 battery does not include auditory working memory subtests, but the WAIS-5 battery does. The Working Memory Index vs. Visual Working Memory Index contrast scaled score allows examiners who have administered the working memory subtests of WAIS-5 and the visual working memory subtests of the WAIS-5/WMS-5 to compare auditory and visual working memory skills.

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User Responsibilities

The following section pertains to the ethical and legal responsibilities of test users.

Considering the complexities of test administration, diagnosis, and assessment, WMS-5 users should have training and experience in administration and interpretation of standardized clinical instruments. They should also have training or experience testing individuals whose ages; linguistic backgrounds; and clinical, cultural, or educational histories are similar to those of the examinees they will be evaluating.

In most cases, WMS-5 users should have completed formal graduate- or professional-level training in psychological assessment. Although a trained technician can administer the subtests and score the responses under supervision, results should always be interpreted by individuals with appropriate training in assessment. When the WMS-5 is to be used for a neuropsychological assessment, the examiner should have appropriate training in neuropsychology and neuropsychological assessment. Furthermore, test users should follow the *Standards for Educational and Psychological Testing* (*Standards*; American Educational Research Association [AERA] et al., 2014).

In line with Pearson Clinical Assessment legal policies (please refer to local Pearson Clinical Assessment websites for the most up-to-date content), it is the responsibility of the test user to ensure that test materials, including completed assessment protocols, remain secure and are released only to professionals who will safeguard their proper use. Although review of test results with examinees or parents/caregivers is appropriate and encouraged when legally and ethically permitted, this review should not include disclosure or copying of test items, protocols, or other test materials that would compromise the security, validity, or value of the WMS-5 as a measurement tool. Under no circumstance should test materials be resold or displayed in locations where unqualified individuals can purchase or view partial or complete portions of the test. This restriction includes personal and educational Internet websites and Internet auction sites. Because all test items, norms, and other testing materials are copyrighted, Pearson must approve, in writing, the copying or reproduction of any test materials. One exception to this requirement is the copying of a completed record form for the purpose of conveying an individual's records to another qualified professional. These user responsibilities, copyright restrictions, and test security issues are consistent with the guidelines set forth in the *Standards* (AERA et al., 2014) and are required by the WMS-5 licensing agreement.

Suitability and Fairness Issues

When selecting a test for a particular purpose, the practitioner should evaluate the test's merits and suitability for the proposed use. This section provides information to consider during test selection for commonly used purposes. The practitioner is advised to consult the *Standards* (AERA et al., 2014) for a complete treatment of test selection considerations.

Testing Examinees for Reevaluation Purposes

Reevaluation of an examinee's memory functioning to track disease progression or document improvement following intervention is common in research and clinical practice. Using the same instrument for reevaluation may result in practice effects (Bartels et al., 2010). The shortest test–retest interval that will not result in significant practice effects on the WMS-5 has not yet been determined; however, it is likely to vary depending on clinical and diagnostic differences. Data reported for the long test–retest study indicate that prior exposure to the test impacts performance even 3–5 years later. The decision to readminister the WMS-5 must be based, in part, on the purpose of the reevaluation and the psychological status of the examinee. The WMS-5 Alternate Form was developed as a tool for practitioners to reduce practice effects when reevaluating an examinee's memory functioning.

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Although administration of the Alternate Form reduces the comprehensiveness of the evaluations because it is a shortened battery, it allows a reduction in practice effects upon reevaluation. Alternatively, the Standard Form of the CVLT 3 may be given in place of Verbal Paired Associates 1 and 2 at one of the evaluations to reduce practice effects.

Practice effects, the persistence of memory, the use and limitations of parallel forms, and the possible influence of other intervening events should be considered when interpreting reevaluation performance. More information about considerations surrounding reevaluation can be found through position papers published by professional organizations (e.g., Heilbronner et al., 2010) and research. See Bartels et al. (2010), Ivnik et al. (1999), Lee et al. (2023), and Mitrushina and Satz (1991) for more information on the interpretation of change in scores on repeated evaluations.

Testing Examinees With Disabilities

Examinees with disabilities, such as physical, language, or sensory differences, are frequently referred for psychological evaluation. Moreover, auditory and visual deficits increase with age. When assessing examinees with disabilities, it is important not to attribute low performance solely to low memory ability when, in fact, it may be related to physical, language, or sensory difficulties. Depending on the nature of the difficulty and the test administered, the examinee's performance may result in scores that underestimate their true ability if the test is administered in a standard fashion. For example, an examinee with a severe fine motor impairment would most likely obtain low scores on subtests that require fine motor abilities (e.g., Visual Reproduction). Similarly, an examinee with a hearing, language, or speech impairment may be at a disadvantage on the Auditory Memory subtests. Although this section is not intended to be a set of prescriptions for testing examinees with disabilities, the following suggestions may prove useful in assessing the abilities of such individuals.

When assessing examinees with disabilities, the examiner should include instruments designed to address the examinee's specific needs. All modifications from the standard administration and scoring instructions on the WMS-5 (e.g., translations, substitutions, nonstandard administration order) should be documented and considered when interpreting test results. Professionals who evaluate the examinee's functioning should rely on clinical judgment to evaluate the effects of such modified procedures on test scores.

Prior to testing an examinee with physical, language, or sensory difficulties, the examiner should become familiar with the examinee's limitations and preferred mode of communication, both of which may necessitate deviations from standard procedures. Some flexibility may be necessary to balance the examinee's needs with the need to maintain standard procedures. For example, an examinee with muscular dystrophy may present with muscle stiffness and hand tremors that interfere with fine motor skills. To derive the index scores, the examiner should consider administering only the Auditory Memory and Symbol Span subtests, which do not require fine motor skills. The Designs subtest can also be given with the examinee verbally selecting the cards and directing the examiner on where to place them in the grid. The digital version of the Designs subtest also reduces fine motor skills as the examinee drags and drops the responses on the device screen as opposed to picking up cards and placing them in a grid. For additional discussions of testing individuals with physical impairments, see Sattler (2024) and Hill-Briggs et al. (2007). For an examinee with severe language difficulties, it may be preferable to place greater weight on the Visual Memory subtests as estimates of the examinee's memory ability.

Even though some modifications invalidate the use of norms, they often provide valuable qualitative and quantitative information about the examinee's strengths and weaknesses in cognitive functioning. See Mitrushina et al. (2005), Sherman et al. (2022), and Braden (2003) for reviews of modifying assessment instruments to accommodate examinees with disabilities.

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Testing Multilingual Examinees

Issues around adapting or modifying standard administration procedures may also arise when examinees who are not fluent in English are referred for evaluation. The WMS-5 normative data were collected on examinees residing in the United States whose primary language is English. Translation or bilingual administration of the test is a deviation from standard administration procedures and should be considered in score interpretation. Clinical judgment is required to weigh the benefits of improving the examinee's comprehension of instructions against obtaining scores under standard administration procedures. Experienced examiners utilize several approaches, such as administering the test with the assistance of an interpreter, using an adapted or translated version, or administering the test in the examinee's native language or bilingually. However, all these methods present problems in score interpretation, particularly for the Auditory Memory subtests, because the difficulty level of words is frequently not equivalent across languages. Limited proficiency in English may have less effect on the Visual Memory and Visual Working Memory subtests.

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