Clinical Features of the New Edition
WAIS–IV / WMS–IV Advisory Panel

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WMS–IV

• *Introduction*
  • Design Goals for Revision
  • Subtest Details
  • Test Structure
  • Normative, Validity, and Clinical Studies Information
WMS–IV

• *Design Goals for Revision*
  
  • Overview
  • Subtest Details
  • Test Structure
  • Normative, Validity, and Clinical Studies Information
WMS–IV
Design Goals for Revision

• **Improve Clinical Sensitivity**
• Decrease Testing Time for Older Adults
• Improve Forensic Utility of WMS–IV
• Reduce Confounding Factors
• Eliminate Subtest/Construct Overlap with WAIS
• Improve Assessment of Working Memory
• Improve Ease of Administration and Scoring
Design Goals for Revision

- Improve Clinical Sensitivity
  - Increasing Floors for Older Subjects
  - Increase Difficulty Level and Ceiling in Younger Age Groups
  - Develop New subtests
  - Screen Normative Sample for Undiagnosed Possible MCI or Mild Alzheimer’s
  - Screen Normative Sample for Possible Insufficient Effort
WMS–IV
Design Goals for Revision

• Improve Clinical Sensitivity
• **Decrease Testing Time for Older Adults**
• Improve Forensic Utility of WMS–IV
• Reduce Confounding Factors
• Eliminate Subtest/Construct Overlap with WAIS
• Improve Assessment of Working Memory
• Improve Ease of Administration and Scoring
WMS–IV
Design Goals for Revision

• Decrease Testing Time for Older Adults
  – Subtests Shortened
  – Drop Subtests with Floor Problems
  – Older Adult Battery (65–90)
    • Reduced Number of Subtests
  – Content Changes Where Appropriate
WMS–IV
Design Goals for Revision

- Improve Clinical Sensitivity
- Decrease Testing Time for Older Adults
- **Improve Forensic Utility of WMS–IV**
- Reduce Confounding Factors
- Eliminate Subtest/Construct Overlap with WAIS
- Improve Assessment of Working Memory
- Improve Ease of Administration and Scoring
WMS–IV

Design Goals for Revision

• Improve Forensic Utility of WMS–IV
  – External Validity Measure
  – Internal Validity Checks
  – Guessing Rate Study
WMS–IV
Design Goals for Revision

- Improve Clinical Sensitivity
- Decrease Testing Time for Older Adults
- Improve Forensic Utility of WMS–IV
- **Reduce Confounding Factors**
  - Eliminate Subtest/Construct Overlap with WAIS
  - Improve Assessment of Working Memory
  - Improve Ease of Administration and Scoring
WMS–IV
Design Goals for Revision

• Reduce Confounding Factors
  – Reduce or Eliminate motor requirements in administration or scoring where possible
  – Reduce verbal processing on visual memory subtests
  – Develop Contrast Scores to partial out confounding cognitive effects (e.g., Spatial Versus Detail; Immediate Versus Delayed)
  – Reduce language level of verbal tasks where possible
WMS–IV
Design Goals for Revision

• Improve Clinical Sensitivity
• Decrease Testing Time for Older Adults
• Improve Forensic Utility of WMS–IV
• Reduce Confounding Factors
• *Eliminate Subtest/Construct Overlap with WAIS*
• *Improve Assessment of Working Memory*
• Improve Ease of Administration and Scoring
WMS–IV
Design Goals for Revision

• **Eliminate Subtest/Construct Overlap with WAIS**
  – Drop subtests appearing in both subtests
  – Measure different modalities of working memory

• **Improve Assessment of Working Memory**
  – Focus on visual working memory
  – Create subtests that require mental manipulation of visual information
  – Create subtests with minimal verbalization
WMS–IV
Design Goals for Revision

• Improve Clinical Sensitivity
• Decrease Testing Time for Older Adults
• Improve Forensic Utility of WMS-IV
• Reduce Confounding Factors
• Eliminate Subtest/Construct Overlap with WAIS
• Improve Assessment of Working Memory

• *Improve Ease of Administration and Scoring*
WMS–IV
Design Goals for Revision

• Improve Ease of Administration and Scoring
  – Create new scoring rules for visual reproduction that are fast, easy, and reliable
  – Eliminate subtests that require rapid changing of stimulus pages
  – Reduce the amount of rapid visual processing required of the examiner
WMS–IV

- Design Goals for Revision
- **Subtest Details**
  - Dropped
  - Revised
  - New!
- Test Structure
- Normative, Validity, and Clinical Studies Information
WMS–IV Subtest Details

Subtests Dropped from WMS–III

• Digit Span and Letter-Number Sequencing
  – Subtests appear in WAIS–IV

• Mental Control
  – Incorporated into Brief Cognitive Status Exam

• Information and Orientation
  – Incorporated into Brief Cognitive Status Exam

• Faces
  – Floor and administration limitations
WMS–IV Subtest Details
(Subtest Dropped continued)

- Family Pictures
  - To meet design goal of reducing verbalization of visual memory tasks

- Spatial Span
  - Improved measure of mental manipulation of visual information developed
  - Need to reduce processing speed and motor demands
  - Improve ease of administration

- Word List
  - Reduce length of testing and allow CVLT–II substitution of VPA
WMS–IV Subtest Details

Subtests Revised from WMS–III

• Logical Memory—slightly modified
• VPA—significantly modified
• Visual Reproduction—significantly modified
Logical Memory

• Ages (16–69)
  – Anna Thompson unchanged
  – Joe Garcia–city changed due to clinician feedback (e.g., San Francisco does not experience that type of weather)
  – Joe Garcia story is not repeated since floor is not an issue in this age group

• Age (65–90)
  – Ruth and Paul Story–new short story more age-appropriate, less language demand is repeated
  – Anna Thompson unchanged
WMS–IV Subtest Details

(Subtests Revised continued)

Logical Memory

- Ages (16–69)
  - Recognition (Yes/No) 0–30 points
- Age (65–90)
  - Recognition (Yes/No) 0–23 points
- Scores
  - Immediate Memory – scaled score
  - Delayed Memory – scaled score
  - Delayed Recognition – cumulative percentage
- Contrast Scores
  - Immediate Versus Delayed
  - Recognition Versus Delayed
Verbal Paired Associates (VPA)

- Increased range of scores with inclusion of additional easy items.
- Added “free recall” condition after recognition trial.
WMS–IV Subtest Details

(Subtests Revised continued)

VPA Scores

– Immediate Learning – scaled score
– Delayed – scaled score
– Delayed Recognition – cumulative percentage
– Delayed Free Recall – scaled score

• Contrast Scores
  – Immediate versus Delayed
  – Recognition versus Delayed
WMS–IV Subtest Details
(Subtests Revised continued)

VPA — CVLT–II Substitution

• CVLT–II Total Trial 1 to Trial 5 can be substituted for VPA I in the Auditory and Immediate Indexes
• CVLT–II Long Delay Free Recall can be substituted for VPA II in the Auditory and Delayed Indexes
• Substitution rules based on equating study, using equipercntile equating method
Visual Reproduction

- Same 5 items from WMS–III VR
- Scoring rules based on work by Cullum, Lacritz, and colleagues are faster and easier to score and have similar reliability and clinical sensitivity as previous edition
WMS–IV Subtest Details
(Subtests Revised continued)

Visual Reproduction

• Reproduction Recognition now uses old visual discrimination format of seven items - examinee needs to select correct design
• Reduces guessing and is faster but has limited number of data points.
• Copy Condition to control for visual/ spatial skills
WMS–IV Subtest Details
(Subtests Revised continued)

Visual Reproduction

• **Visual Reproduction scores**
  – Immediate Recall – scaled score
  – Delayed Recall – scaled score
  – Delayed Recognition – cumulative percentage

• **Contrasts scores**
  – Immediate versus Delayed
  – Delayed Recognition versus Delayed
  – Copy versus Immediate
WMS–IV Subtest Details

New WMS–IV Subtests

• Brief Cognitive Status Exam
• Design Memory
• Spatial Addition
• Symbol Span
Brief Cognitive Status Exam

- Designed as a brief preliminary assessment for significant cognitive impairment
  - Temporal Orientation
  - Mental Control
  - Clock Drawing
  - Memory
  - Inhibitory Control
  - Verbal Productivity

- Classification Table Translates Total Scores
  - Average, Low, Moderately Low, Very Low
Design Memory

- Developed to differentiate visual spatial from visual details.
- Reduce impact of motor responding on visual memory tasks
- Reduce guess rate
- Replaces Family Pictures and Faces.
Design Memory

• Examinee is presented with 4 to 8 designs on a grid (1 item with 4, 2 with 6, 1 with 8)

• The examinee is handed cards with designs and asked to place the correct design in the correct location.

• The items are scored for correct location and correct detail independent from one another and a bonus is given for a correct design in the correct location.
WMS–IV Design Memory
Design Memory

• There are immediate and delayed recall conditions

• A 12 item delayed recognition trial is presented after delayed recall.
  – Client is asked to pick which designs are both correct and in the proper location.
WMS–IV Subtest Details
(New Subtests continued)

• **Design Memory Scores**
  – Immediate Spatial – scaled score
  – Immediate Content – scaled score
  – Immediate Total = Content + Spatial + bonus-scaled score
  – Delayed Spatial-scaled score
  – Delayed Content-scaled score
  – Delayed Total = Content + Spatial + bonus scaled score
  – Delayed Recognition Total – cumulative percentage
WMS–IV Subtest Details
(New Subtests continued)

Design Memory Scores

Contrast Scores

– Immediate Spatial versus Immediate Content
– Delayed Content versus Delayed Spatial
– Immediate Total versus Delayed Total
– Recognition versus Delayed Total
Spatial Addition

- Developed as a measure of spatial working memory requiring both storage and manipulation of visual spatial information.
  - Developed to replace Spatial Span
- 24 items with a discontinue rule of 3
- Spatial Span Score — Total scaled score
Spatial Addition

- Examinee is shown a grid with blue dots, red dots, or both for 5 seconds. Examinee is shown a second grid with additional dots.
- Examinee must add the spatial locations of the blue dots and ignore any red dots.
- Examinee subtracts the location of blue dots that spatially overlap.
- Examinee responds by placing blue or white cards in a grid (blue for location of blue, white for subtracting 2 blues in the same location).
Spatial Addition 1st Stimulus
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Spatial Addition Correct Response
# Spatial Addition 1st Stimulus

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- Red circles: 3
- Blue circles: 1
WMS–IV Subtest Details

(New Subtests continued)

Symbol Span

- Developed as a visual analog to Digit Span
- Reliability .85–.89
- Total Score
Symbol Span Stimulus
Symbol Span Response

Correct response is A,D
Symbol Span

- Symbols that are visualized rather than read verbally from the page
- Examinee sees stimulus for 5 seconds
- Examinee must choose correct designs in the correct order.
- Examinee gets 2 points for correct designs and order; 1 point for correct designs, not in order.
- There is a forward condition only.
WMS–IV

Overview
• Introduction
• Revision Goals
• Subtest Details

• Test Structure
  – Index Structures
  – Scores

• Normative and Clinical Information
WMS–IV Index Structures

Immediate Memory Index

- Logical Memory I
  - Designs I
- Verbal Paired Associates I or CVLT Trials 1-5
  - Visual Reproduction I

Delayed Memory Index

- Logical Memory II
  - Designs II
- Verbal Paired Associates II or CVLT II Delayed Free
  - Visual Reproduction III
WMS–IV Index Structures

Visual Working Memory Index
- Spatial Addition
- Symbol Span

Auditory Memory Index
- Logical Memory I & II
- Verbal Paired Associates I & II or CVLT-II LRN and Delayed Free

Visual Memory Index
- Designs I & II
- Visual Reproduction I & II
WMS–IV Scores

Index Level Contrast Scores

• Immediate Versus Delayed
• Auditory Memory Versus Visual Memory
• Visual Working Memory Versus WAIS–IV Working Memory
• Auditory Memory Versus WAIS–IV Working Memory
WAIS–IV Versus WMS–IV

• Simple and Predicted Difference Methods
• WAIS–IV General Ability Index
  – Vs. Immediate Memory
  – Vs. Delayed Memory
  – Vs. Auditory Memory
  – Vs. Visual Memory
  – Vs. Visual Working Memory
WAIS–IV Versus WMS–IV

- WAIS–IV Verbal Comprehension Index
  - Vs. Auditory Memory

- WAIS–V Perceptual Reasoning Index
  - Vs. Visual Memory
  - Vs. Visual Working Memory
WMS–IV Normative Sample

- Ages 16–90
- Normative sample: $N = 1,400$
  - 100 examinees per age band for ages 16–69
  - 100 examinees per age band for ages 65–90
- National sample stratification
  - Sex
  - Education Level
  - Ethnicity
  - Region
WMS–IV Validity Studies

• WAIS–IV Co-Norming Study (2008 pub)
• WMS–III Correlational Study (16:0–89:11)
• CMS Correlational Study (16:0–16:11)
WMS–IV Clinical Studies

Intellectual Disability: Mild Severity
Intellectual Disability: Moderate Severity
Borderline Intellectual Functioning
Gifted Intellectual Functioning
Autistic Disorder
Asperger’s Disorder
Learning Disability: Reading
Learning Disability: Math
ADHD
TBI
Mild Cognitive Impairment
Dementia of the Alzheimer’s Type
Depression
## WAIS/WMS–IV ISBNs and Pricing

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<th>ISBN</th>
<th>Description</th>
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