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Visual and Verbal Immediate and Delayed Recall Index Comparisons

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The passage of time is a critical variable in the assessment of memory. Examining performance on an immediate recall measure is often insufficient for fully understanding an examinee's memory abilities. A more comprehensive picture can be obtained comparing immediate recall performance with delayed recall performance. Such a comparison provides important insight into memory consolidation and memory decay over time. Adding to the complexity of interpreting memory performance, rates of initial learning and subsequent decay can differ across visual and verbal sensory modalities. Though the third edition of the Wide Range™ Assessment of Memory and Learning (WRAML3) provides comparisons of immediate versus delayed recall performance at the general index level, similar comparisons between the visual and verbal indexes were not included among the index discrepancy analyses provided in the initial publication. This report provides critical values (Table 1) and base rates (Table 2) for comparisons between the **Visual Immediate Memory Index vs. Visual Delayed Index** and the **Verbal Immediate Memory Index vs. Verbal Delayed Index** along with guidance on how to interpret these comparisons, because it is clinically important to have those sensory modality index comparisons.

Critical value and base rate data for the Visual Immediate Memory Index vs. Visual Delayed Index and the Verbal Immediate Memory vs. Verbal Delayed Index comparisons were derived from the WRAML3 standardization sample in the same manner as the other WRAML3 index discrepancy analyses (Adams & Sheslow, 2021). In general, comparing the examinee's performance on the immediate and delayed recall conditions provides the examiner with information about how much original content the examinee retained following a 20–30 minute time delay, compared to their same-age peers. If the age-adjusted score for the delayed recall condition is significantly lower than the score for the

immediate recall condition, then the examinee may be demonstrating difficulties with memory storage and/or retrieval. If the reverse is true—the score for the delayed recall condition is greater than the immediate —then the examinee likely benefitted disproportionately from consolidation of information during the elapsed time between conditions. A more comprehensive discussion of how immediate and delayed score comparisons can be used clinically is found in chapter 4 of the WRAML3 Administration Manual (Adams & Sheslow, 2021). The visual and verbal index analyses should provide a more comprehensive picture about the nature of the examinee’s memory strengths and weaknesses. This is especially true if there is a consistent pattern across visual or verbal subtests, which itself can be examined using the discrepancy analyses between the subtests that contribute to the respective index.

Completing Discrepancy Analyses

An Index Discrepancy Analysis table is provided to aid in the calculation of these scores (Figure 1). To complete the discrepancy analyses for the Visual Immediate Memory Index vs. Visual Delayed Index and the Verbal Immediate Memory Index vs. Verbal Delayed Index, transfer the appropriate index scores from the Summary Scores table on summary page 1 of the Record Form to the Standard Score 1 and Standard Score 2 columns of the Index Discrepancy Analyses Table. Subtract Standard Score 2 from Standard Score 1 and enter the difference in the Difference column. Indicate the desired level of significance by circling .10 or .05 under the Significance Level heading. Critical values are available for the 14 age bands and the average of the standardization sample, found in the All ages row. Enter the critical value from Table 1 in this Technical Report in the Critical Value column. The absolute difference must equal or exceed the critical value to be statistically significant. In the Significant column, circle *Yes* if the difference is statistically significant and *No* if it is not. If the critical value is not significant, mark a dash in the column labeled Base Rate. If the critical value is significant, record the base rate of the difference from Table 2 in the Base Rate column.

Note. For Tables 1 and 2, VSIMI–VSDI = Visual Immediate Memory Index vs. Visual Delayed Index, and VBIMI–VBDI = Verbal Immediate Memory Index vs. Verbal Delayed Index.

Reference

Adams, W., & Sheslow, D. (2021). *Wide Range Assessment of Memory and Learning* (3rd ed., WRAML3): Administration manual. Pearson.

Table 1 Critical Values for Index Discrepancy Analysis

Age	Significance level	Comparison	
		VSIMI–VSDI	VBIMI–VBDI
5	.05	16.63	13.78
	.10	13.91	11.53
6	.05	15.83	13.14
	.10	13.25	11.00
7	.05	15.28	16.38
	.10	12.78	13.70
8–9	.05	16.36	15.82
	.10	13.69	13.24
10–12	.05	16.10	14.98
	.10	13.47	12.54
13–16	.05	15.83	11.75
	.10	13.25	9.83
17–24	.05	15.56	12.46
	.10	13.02	10.43
25–39	.05	16.10	12.47
	.10	13.47	10.43
40–54	.05	15.56	11.76
	.10	13.02	9.84
55–64	.05	15.28	11.38
	.10	12.79	9.52
65–69	.05	14.99	11.38
	.10	12.54	9.52
70–74	.05	15.28	11.38
	.10	12.79	9.53
75–79	.05	15.83	11.38
	.10	13.25	9.52
80–90	.05	14.40	10.99
	.10	12.05	9.20
All ages	.05	15.65	12.92
	.10	13.10	10.81

Table 2 Base Rates for Index Discrepancy Analysis

Comparison	Base rate									
	≤25%		≤15%		≤10%		≤5%		≤2%	
	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)
VSIMI–VSDI	6.0	6.0	9.0	9.0	—	11.0	14.0	12.0	17.0	15.0
VBIMI–VBDI	6.0	6.0	9.0	9.0	—	—	14.0	12.0	18.0	17.0

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INDEX DISCREPANCY ANALYSES						
Index Comparisons	Standard Score 1	Standard Score 2	Difference	Critical Value Significance Level .10 or .05	Significant	Base Rate
Visual Immediate Memory vs. Visual Delayed					Yes / No	
Verbal Immediate Memory vs. Verbal Delayed					Yes / No	

Figure 1 Index Discrepancy Analyses Table