

Outcome Measure	Wechsler Adult Intelligence Scale - IV (WAIS-IV)
Sensitivity to Change	Yes
Population	Adult
Domain	Neuropsychological Impairment
Type of Measure	Objective test
ICF-Code/s	b1
Description	<p>The current version of the test, the WAIS-IV, which was released in 2008, is composed of 10 core subtests and five supplemental subtests, with the 10 core subtests comprising the Full Scale IQ.</p> <p>With the new WAIS-IV, the verbal/performance subscales from previous versions were removed and replaced by the index scores. The General Ability Index (GAI) was included, which consists of the Similarities, Vocabulary and Information subtests from the Verbal Comprehension Index and the Block Design, Matrix Reasoning and Visual Puzzles subtests from the Perceptual Reasoning Index. The GAI is clinically useful because it can be used as a measure of cognitive abilities that are less vulnerable to impairments of processing and working memory.</p> <p>There are four index scores representing major components of intelligence:</p> <ol style="list-style-type: none"> 1. Verbal Comprehension Index (VCI) 2. Perceptual Reasoning Index (PRI) 3. Working Memory Index (WMI) 4. Processing Speed Index (PSI) <p>Two broad scores are also generated, which can be used to summarize general intellectual abilities: Full Scale IQ (FSIQ), based on the total combined performance of the VCI, PRI, WMI, and PSI General Ability Index (GAI), based only on the six subtests that the VCI and PRI comprise.</p> <p>The Subtests include:</p> <ol style="list-style-type: none"> (1) VERBAL COMPREHENSION <ol style="list-style-type: none"> a. Similarities (Core) – abstract verbal reasoning b. Vocabulary (Core) - The degree to which one has learned, been able to comprehend and verbally express vocabulary c. Information (Core) - Degree of general information acquired from culture d. (Comprehension) - Ability to deal with abstract social conventions, rules and expressions (2) PERCEPTUAL REASONING <ol style="list-style-type: none"> a. Block Design (Core) - Spatial perception, visual abstract processing, and problem solving b. Matrix Reasoning (Core) - Nonverbal abstract problem solving, inductive reasoning, spatial reasoning c. Visual Puzzles (Core) - Spatial reasoning d. (Picture Completion) - Ability to quickly perceive visual details e. (Figure Weights) - Quantitative and analogical reasoning

	<p>(3) WORKING MEMORY</p> <ol style="list-style-type: none"> a. Digit Span (Core) - Attention, concentration, mental control b. Arithmetic (Core) - Concentration while manipulating mental mathematical problems c. (Letter-Number Sequencing) - Attention, concentration, mental control <p>(4) PROCESSING SPEED</p> <ol style="list-style-type: none"> a. Symbol Search (Core) - Visual perception/analysis, scanning speed b. Coding (Core) - Visual-motor coordination, motor and mental speed, visual working memory c. (Cancellation) - Visual-perceptual speed <p>The WAIS-IV measure is appropriate for use with individuals aged 16–90 years.</p>
Properties	<p>See manual for further details (Wechsler, 2008).</p> <p><u>Test-retest:</u> (Wechsler, 2008) Following a mean interval of 22 days, corrected correlation coefficients ranged from .74 (Visual Puzzles and Matrix Reasoning) to .90 (Information). DSF, DSB and DSS were .71 to .77.</p> <p><u>Inter-rater agreement:</u> (Wechsler, 2008) All subtests were .98 to .99.</p> <p><u>Internal reliability:</u> (Wechsler, 2008) Cronbach’s alpha/split-half reliability coefficients for subtests in the WAIS-IV range from .87 to .98 (not calculated for SS, Coding and Cancellation). DSF = .84; DSB = .78; DSS = .89.</p> <p><u>Concurrent validity:</u> All subtests and Indexes can discriminate moderate to severe TBI from matched controls with the exception of Similarities, Vocabulary, and Comprehension (VCI can still discriminate). DSS, but not DSB and DSF can discriminate.</p> <p><u>Construct validity:</u> (Wechsler, 2008). In normal populations, the WAIS-IV VCI and its subtests demonstrated slightly higher correlations with the Letter Fluency and Category Fluency scores of the D-KEFS. This was particularly true for Similarities and Comprehension. Symbol Search, Coding, and the PSI displayed highest correlations with the D-KEFS Trail-Making completion time scores (pattern not present for Cancellation). In moderate to severe TBI participants, correlations between all PSI subtests/PSI and the D-KEFS than those observed in the nonclinical sample. Cancellation was highly correlated with the D-KEFS category switching scores in TBI participants. Reasonable convergent/divergent validity was also shown with RBANS index scores.</p>
Advantages	<ul style="list-style-type: none"> • Well known neuropsychological measure. • Is the most common test of neuropsychological function and is well used in research. • Strong psychometric properties. • Is well-normed. • Has many subtests that may be selected for use. • Most tests generally efficient in terms of administration time.

	<ul style="list-style-type: none"> • Test has good instructions to ensure high rates of inter-rater reliability.
Disadvantages	<ul style="list-style-type: none"> • Very expensive. • Cannot be administered by non-psychologists. • Administration of the full WAIS-IV is time-consuming. • Some subtests are lengthy to administer (Comprehension, Block Design) • There are no parallel versions of the test.
Additional Information	<p>The WAIS-IV Processing Speed Index is a Core measure in the Neuropsychological Impairment Domain in Wilde et al. (2010). The WAIS-IV Letter-Number Sequencing and Digit Span subtests are Supplemental measures in the Neuropsychological Impairment Domain Wilde et al. (2010).</p> <p>It is likely that a number of subtests will be recommended for use across domains that are important to TBI – i.e., working memory and information processing speed.</p>
Reviewers	Skye McDonald

References

Wechsler, D. (2008). WAIS-IV Manual. *New York: The Psychological Corporation.*