PAR

Rationale, Development, and Guidelines for Use

ChAMP™

Child and Adolescent Memory Profile™

VALIDITY INDICATOR–REVISED

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Summary

The Child and Adolescent Memory Profile (ChAMP) Validity Indicator–Revised (VI-R), an embedded performance validity test (PVT), is an update to the original validity indicator included in the ChAMP. The VI-R is generated within the ChAMP Score Report for examinees ages 8 years and older (it can also be hand-scored). It improves on its predecessor in several ways:

- An improved cutoff aligns with current research indicating that below-chance performance, the cutoff of the original ChAMP validity indicator, has limited utility in detecting most examinees with exaggerated and invalid memory performance. This results in a very real risk of false negatives (i.e., failing to flag examinees whose ChAMP performance is invalid).
- The VI-R has improved classification accuracy compared to the original.
- The VI-R has greater developmental sensitivity because it uses age-scaled scores instead of raw scores.
- The VI-R was extensively validated in multiple groups, including the ChAMP standardization, clinical, and simulated malingering samples, and it was verified with a large pediatric tertiary hospital sample.

The VI-R is calculated automatically when ChAMP scores are entered into PARiConnect for a report. The validity section of the report also flags below-chance performance, if applicable, via the original validity indicator. For examinees ages 5–7 years, only the original validity indicator is included. The VI-R can also be hand-scored via the same process detailed in the ChAMP Professional Manual but using scaled scores instead of raw scores and using the new cutoff.

Rationale for Update

The original ChAMP validity indicator had certain limitations that are addressed by the VI-R. Using the original validity indicator is not advised unless the examinee is flagged as scoring within the below-chance range.

Improved Cutoff Beyond Below-Chance Performance Only

The original ChAMP validity indicator cutoff was purposely set to detect below-chance performance based on earlier models of malingering and exaggeration (Slick et al., 1999). Although this was done to minimize false positives in children with significant neurological impairment based on research at the time, it limited the sensitivity of the original ChAMP validity indicator. Current research indicates that below-chance performance is rare in clinical groups and that above-chance cutoffs have better sensitivity at identifying invalid scores (Brooks et al., 2023; Sherman et al., 2020).

Improved Developmental Sensitivity

The original ChAMP validity indicator was based on the sum of Lists Recognition, Objects Delayed, Instructions Recognition, and Places Delayed subtest raw scores. However, raw scores do not account for the normal developmental increase in memory abilities with age and thus could lead to overidentification of invalid scores of younger children and underidentification of invalid scores in older examinees. For that reason, scaled scores are used to calculate the VI-R.

Expanded Clinical Validation in Larger Clinical and TBI Groups

The original ChAMP validity indicator cutoff was established using heterogeneous clinical samples and a simulated malingering group, which was an improvement compared to other similar PVTs at the time. Nevertheless, expanded validation with other larger groups, including large clinical samples and larger, well-characterized traumatic brain injury (TBI) samples, was needed.

Development of the VI-R

The VI-R is based on the sum of Lists Recognition, Objects Delayed, Instructions Recognition, and Places Delayed subtest scaled scores. These are the same four subtests that contribute to the original ChAMP validity indicator.

In clinical practice, it is preferable to fail to detect invalid scores than to overidentify valid scores as invalid. The specificity rate for the VI-R was thus set at 90%, consistent with consensus guidelines for PVT specificity (i.e., equivalent to a false-positive rate of 10%; Sherman et al., 2020; Sweet et al., 2021).

A cutoff of 27 or lower was identified as providing the best sensitivity while maintaining a specificity of 90% using samples described in prior research (i.e., Brooks et al., 2018, 2019) as well as in the ChAMP standardization, clinical, and simulated malingering samples. The VI-R's specificity was also verified in a large combined pediatric tertiary hospital sample on which prior ChAMP research studies are based (Brooks et al., 2018, 2019, 2023).

Using the VI-R

Age Range and IQ Levels

PVTs are most accurate in examinees with average IQs. As IQ decreases, PVT failures are increasingly likely to reflect bona fide cognitive deficits rather than invalid responding or exaggeration. In adults with IQs below 60, PVTs have questionable validity (Sherman et al., 2020). In children, this is less studied, but false positives are a concern, particularly in very young children.

Consistent with this, a careful review of VI-R data in the ChAMP samples indicated that the rate of false positives increased as age and IQ decreased. As a result—and because previous research on ChAMP validity cutoffs included only examinees ages 8 years and older (Brooks et al., 2023)—the VI-R was deemed suitable only for examinees ages 8 years or older with IQs of 85 or above.

Screening Index

The Screening Index VI-R is based on the Objects subtest scaled score using validation steps similar to those described in Brooks et al. (2019). A cutoff of 5 or lower was identified as having the best sensitivity while maintaining a specificity of 90%. This was verified in the ChAMP standardization, clinical, and simulated malingering samples and in a large pediatric tertiary hospital sample.

Accuracy

Table 1 shows specificity rates of invalid scores for the VI-R based on a cutoff of 27 or lower for the full ChAMP and 5 or lower for the ChAMP Screening Index. These cutoffs attained excellent detection rates, with 100% of the simulated malingering ChAMP sample (i.e., 98% for the Screening Index) flagged as invalid. In addition, very few invalid cases were flagged in the standardization sample and pediatric tertiary hospital sample.

TABLE 1

ChAMP VI-R Specificity Rates

Sample	ChAMP VI-R (cutoff = 27)	Screening Index VI-R (cutoff = 5)
ChAMP simulated malingering sample[a]	100.0%	97.8%
ChAMP standardization sample[b]	7.5%	8.4%
Pediatric tertiary hospital sample[c]	10.0%	11.5%

[a]Ages 8–21 years; *N* = 45. [b]Ages 8–21 years; *n* = 957. [c]Ages 8–21 years; FSIQ 85+; *N* = 458.

Optimal Cutoff Score for TBI

In most cases, the VI-R cutoff score of 27 or lower should be used for examinees ages 8 and older with IQs of 85 or above. For individuals ages 8 years or older with TBI, however, the cutoffs published in Brooks et al. (2023) have superior sensitivity for identifying invalid memory profiles. Therefore, a cutoff of 32 or lower for the ChAMP VI-R is recommended for individuals with TBI; this cutoff achieved a sensitivity of .86 and a specificity of .92 for identifying invalid profiles (Brooks et al., 2023). A cutoff of 5 or lower for the ChAMP Screening Index VI-R also achieved a sensitivity of .58 and specificity of .96 in a mild TBI sample (Brooks et al., 2019). Additional ChAMP VI-R cutoffs for different base rates of invalid scores are presented in more detail in Brooks et al. (2023). Additional cutoffs for the ChAMP Screening Index are presented in Brooks et al. (2019).

References and Recommended Reading

Axelrod, B. N., Meyers, J. E., & Davis, J. J. (2014). Finger tapping test performance as a measure of performance validity. *The Clinical Neuropsychologist, 28*(5), 876–888. https://doi.org/10.1080/13854046.2014.907583

Baker, D. A., Connery, A. K., Kirk, J. W., & Kirkwood, M. W. (2014). Embedded performance validity indicators within the California Verbal Learning Test, Children's version. *The Clinical Neuropsychologist, 28*(1),116–127. https://doi.org/10.1080/13854046.2013.858184

Brooks, B. L., Fay-McClymont, T. B., MacAllister, W. S., Vasserman, M., Mish, S., & Sherman, E. M. S. (2023). New Child and Adolescent Memory Profile embedded performance validity test. *Archives of Clinical Neuropsychology, 38*(5), 782–792. https://doi.org/10.1093/arclin/acac110

Brooks, B. L., MacAllister, W. S., Fay-McClymont, T. B., Vasserman, M., & Sherman, E. M. S. (2019). Derivation of new embedded performance validity indicators for the Child and Adolescent Memory Profile (ChAMP) Objects subtest in youth with mild traumatic brain injury. *Archives of Clinical Neuropsychology, 34*(4),531–538. https://doi.org/10.1093/arclin/acy068

Brooks, B. L., Plourde, V., MacAllister, W. S., & Sherman, E. M. S. (2018). Detecting invalid performance in youth with traumatic brain injury using the Child and Adolescent Memory Profile (ChAMP) Lists subtest. J*ournal of Pediatric Neuropsychology, 4*(3–4),105–112. https://doi.org/10.1007/s40817-018-0056-5

Green, P. (2004). *Green's medical symptom validity test (MSVT): Manual*. Green's Publishing.

Grimes, D. A., & Schulz, K. F. (2005). Refining clinical diagnosis with likelihood ratios. *The Lancet, 365*(9469), 1500–1505. https://doi.org/10.1016/S0140-6736(05)66422-7

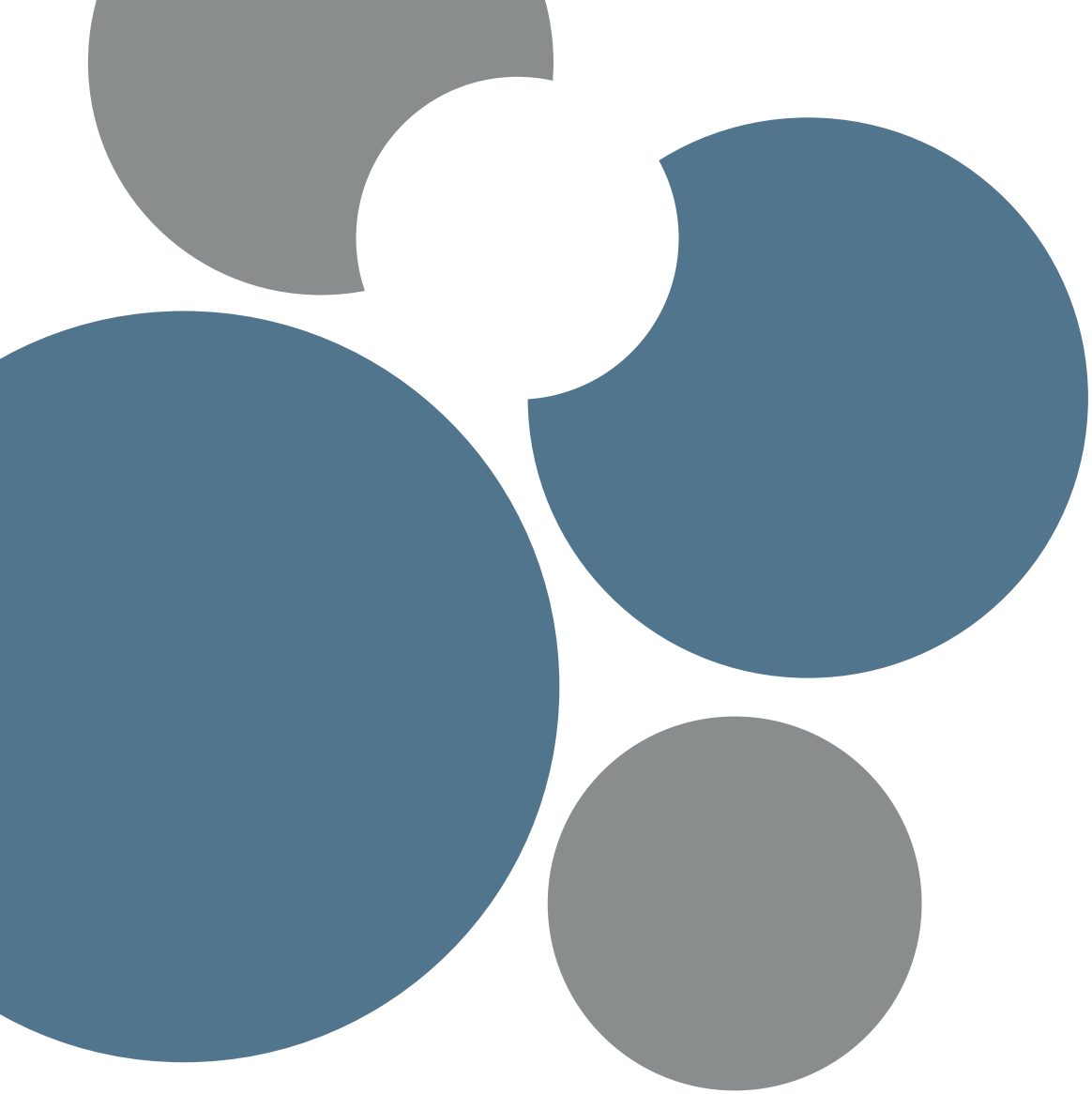
Larrabee, G. J. (2003). Detection of malingering using atypical performance patterns on standard neuropsychological tests. *The Clinical Neuropsychologist, 17*(3),410–425. https://doi.org/10.1076/clin.17.3.410.18089

Sherman, E. M. S. (2015). Terminology and diagnostic concepts. In M. Kirkwood (Ed.), *Validity testing in child and adolescent assessment: Evaluating exaggeration, feigning, and noncredible effort* (pp. 22–41). Guilford.

Sherman, E. M. S., & Brooks, B. L. (in press). A case of severe traumatic brain injury in a child: Malingering of neurocognitive dysfunction or malingering by proxy. In J. E. Morgan, J. J. Sweet, K. B. Boone, & R. W. Schroeder (Eds.), *Neuropsychology of malingering and non-credible presentations: Perspectives on validity assessment*. Routledge.

Sherman, E. M. S., Slick, D. J., & Iverson, G. I. (2020). Multidimensional malingering criteria for neuropsychological assessment: A 20-year update of the Malingered Neurocognitive Dysfunction criteria. *Archives of Clinical Neuropsychology, 35*(6), 735–764.

Tombaugh, T. N. (1996). *Test of Memory of Malingering (TOMM): User's manual*. MHS.



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