



The BRIGANCE Screens III:

A Summary of Technical Information

Implementing the BRIGANCE Screens III for Early Identification and Intervention

The BRIGANCE Screens III provide valid and reliable data in all areas of a child's development, making each screen truly multidimensional. As noted in the *Screens III Technical Manual* (full manual available upon request), the Screens III can typically be used for one of three reasons:

- 1 Identify as early as possible** children who may have developmental delays or disabilities as well as children who may have advanced development or giftedness so any necessary referrals for further testing or special services can take place as soon as possible.
- 2 Determine school readiness** by assessing a child's mastery of those age-appropriate skills that prepare the child for the classroom and promote the child's future success.
- 3 Guide instructional planning** and monitor progress over time.

1 Early Identification

A fundamental reason for screening is early identification, and the Screens III were developed with this application in mind. Because the Screens III sample a range of developmental domains, school systems and agencies can use the Screens III to comply with Head Start mandates as well as early identification requirements under the Individuals with Disabilities Education Act (IDEA).

The Screens III cutoffs for potential developmental delays and potential giftedness make it easy to identify early those children in need of additional evaluation and potential intervention. A critical component of any screening test is the accuracy of the cutoff scores in determining if a child should be referred for additional evaluation. The research behind the Screens III assures teachers and administrators that accurate early identification is taking place. In fact, sensitivity and specificity (key measures of accuracy) are 89% and 93%, respectively, for the Five-Year-Old Child/Kindergarten screen. (Note: The field suggests that screening measures should target at least 70%, according to Distefano and Kamphaus, 2007.)¹ Accuracy statistics for other age-specific screens in the Screens III are available in the *Technical Manual* as well as in the infographics on the following pages.

... sensitivity and specificity are 89% and 93%, respectively, for the Kindergarten screen.

2 School Readiness

Screening also plays a critical role in determining school readiness, particularly for children entering Kindergarten. Many states have their own definitions of school readiness, but in its most general form, school readiness means that a child possesses a set of prerequisite skills and abilities (e.g., knowledge, attitudes, behaviors) that will allow that child to benefit from instruction at the Kindergarten level (and above) (Anastasi and Urbina, 1997)². Accurate screening of behavioral, language, and academic skills (with valid and reliable measures) assists in ensuring children are ready to achieve.

¹ Distefano, C., and R. Kamphaus, R.W. "Development and Validation of a Behavioral Screener for Preschool-Age Children." *Journal of Emotional and Behavioral Disorders* 15.2 (2007): 93-102.

² Anastasi, A., and S. Urbina. *Psychological Testing*. 7th ed. Upper Saddle, River, NJ: Prentice Hall, 1997.

... numerous districts and the entire state of Kentucky are using the Screens III for [school readiness]...

The *Screens III*, in particular the Five-Year-Old Child/Kindergarten screen, were developed with the realization that school readiness assessment is growing to be increasingly more important in the field of education. For this reason, numerous state standards (both early learning standards and content standards for Kindergarten) were consulted in the development of the screening items to ensure that critical indicators of school readiness are being measured by the *Screens III*. The validity research, including the accuracy statistics cited above, also supports the use of the *Screens III* as a trustworthy multidimensional assessment to inform school readiness. Furthermore, the fact that numerous districts and the entire state of Kentucky are using the *Screens III* for this purpose serves to build additional validity evidence for this application.

3 *Instructional Planning*

A third reason for screening is to guide instructional planning and monitor child development and growth over time. Providing teachers and programs with valid and reliable information about each child to ensure that instruction can be individualized to a specific child's needs is a critical step in effective early intervention. In addition to generating a total score that can be compared to cutoffs, the *Screens III* offer domain-level scores, which can provide the guidance needed to effectively support targeted instructional planning and intervention. For the Four-Year-Old Child and Five-Year-Old Child/Kindergarten screens, domain scores include:

- Physical Development
- Language Development
- Academic Skills/Cognitive Development (including both literacy and mathematics)
- Self-help Skills
- Social-Emotional Development

To assist in identifying significantly weak or strong skills on the *Screens III* (in relation to those of the child's peers), normative scores can be computed for each domain at each age level. An easy-to-use score interpretation table is offered to help teachers determine if a domain score implies a significant strength or significant weakness (or somewhere in between) for each child in their class. Once a domain is identified as a possible area of concern, teachers can dig into the specific skills assessed within that domain to determine where additional evaluation and/or instructional support may be needed for that child. Guidance for this type of skill analysis is included with the *Screens III* technical documentation.

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The BRIGANCE Screens III Research Base

The *Screens III* were completely updated for 2013 and normed on a nationally representative sample of 1,929 children. The infographics on this and the following pages illustrate the research base for the *Screens III*, including significant evidence supporting the validity and reliability of the assessments.

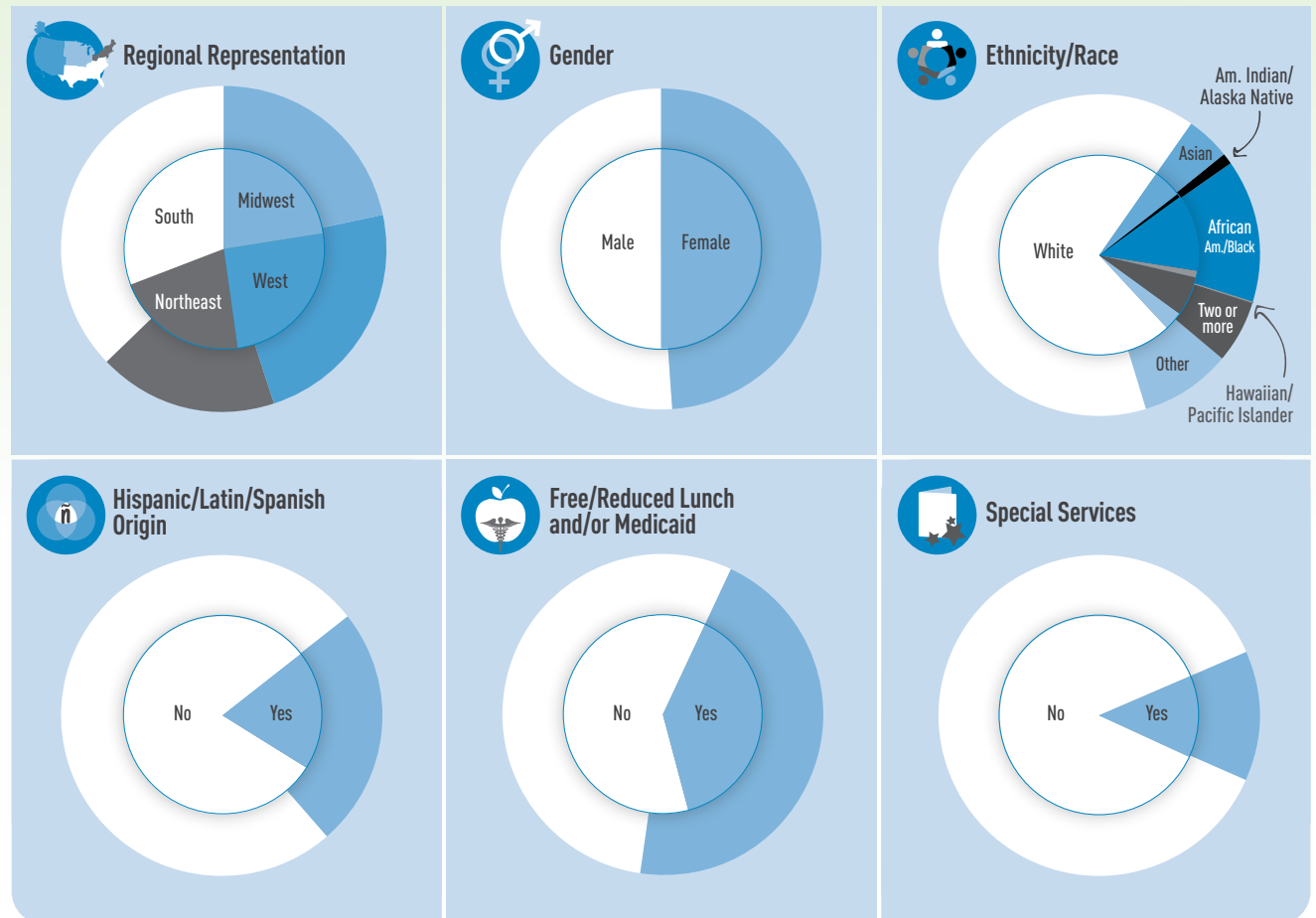
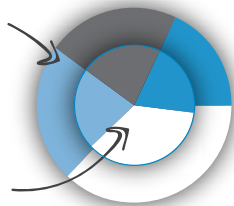
Standardization

The sample of children is nationally representative in terms of geographic, demographic, and socioeconomic characteristics.

KEY

Outer Pie Chart:
US population

Inner Pie Chart:
Screens III Sample



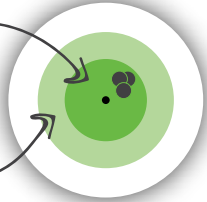
Reliability

The scores of the children assessed were consistent when examined repeatedly. Differences in scores were attributable to real differences in abilities, as opposed to chance error.

KEY

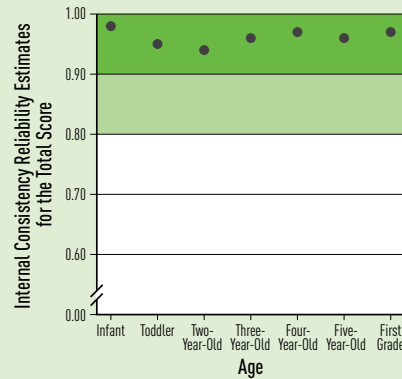
Dark green:
Desired

Light green:
Acceptable



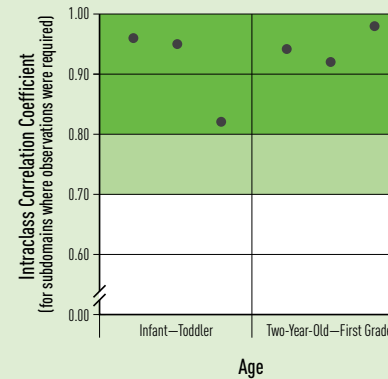
Internal Consistency

Items measuring the same concept were correlated with one another.



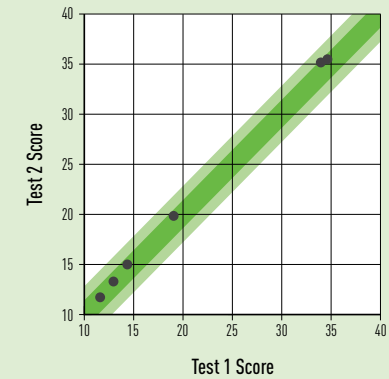
Inter-Rater Reliability

Observations/ratings of performance were consistent across multiple examiners.



Test-Retest Reliability

Total Scores and Domain Scores were stable when tested at multiple points in time.



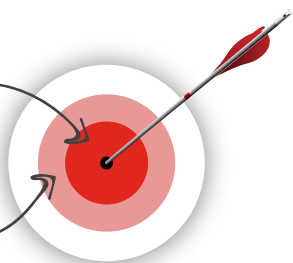
Accuracy

With a high degree of accuracy, each age-specific screen correctly identifies children not likely to have developmental delays or academic disabilities as well as children likely to have delays or disabilities who may require further evaluation and potential intervention.

KEY

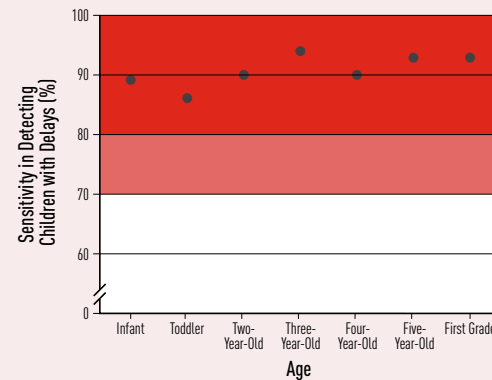
Dark red:
Desired

Light red:
Acceptable



Accuracy—Sensitivity

The *Screens III* correctly identify the children with true developmental delays or disabilities, reducing underreferrals.

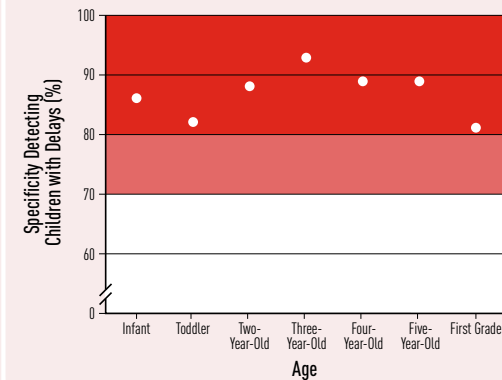


Sensitivity data on detecting children with advanced development/academic giftedness are also available.



Accuracy—Specificity

The *Screens III* correctly identify the children without true developmental delays or disabilities, reducing overreferrals.



Specificity data on detecting children with advanced development/academic giftedness are also available.

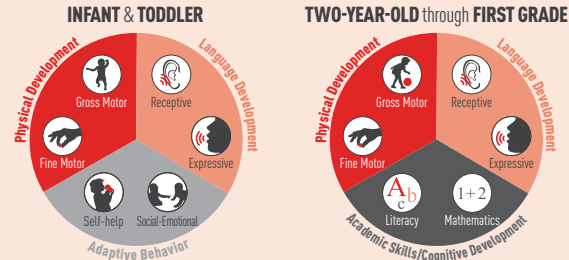
Validity

The decisions based on test scores and the inferences on which the decisions are based are justified by supporting evidence.



Construct Validity—Internal Structure

The domain score structure of the *Screens III* is supported by confirmatory factor analysis for all domains and age levels.



Construct Validity—Fairness

Children of similar ability have the same chance of receiving credit regardless of their demographic.

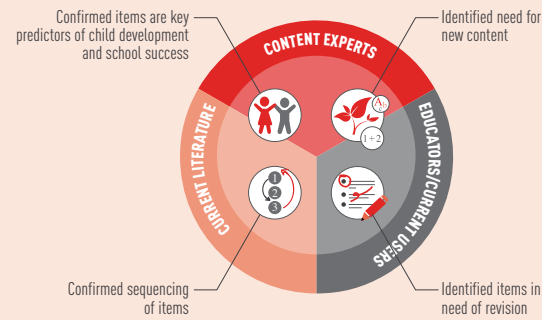
684 ITEMS WERE EXAMINED FOR BIAS
 IN THE CATEGORIES OF **GENDER & RACE**
 USING **DIFFERENTIAL ITEM FUNCTIONING ANALYSIS (DIF)**
 BASED ON A **CHI-SQUARE DIFFERENCE TEST**

A SEPARATE FAIRNESS & BIAS REVIEW WAS ALSO CONDUCTED BY A REVIEW PANEL
 TOGETHER THEY CONCLUDED:
0 ITEMS WERE BIASED



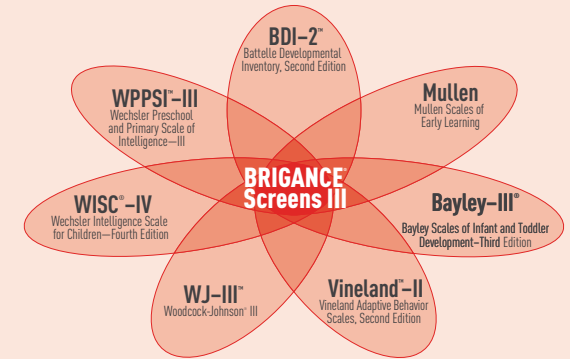
Content Validity

Developmental researchers and educators confirm the items test the important developmental and early academic skills.



Criterion-Related Validity

BRIGANCE screening results correlate with other early development, achievement, intelligence, and language tests.



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