

Supplemental Material S2. Psychometric properties of the social measures and language measures included in the meta-analysis.

Table S4. Psychometric properties of the social measures included in the meta-analysis. The widest ranges reported were used (i.e., across subtests and composites), and the psychometrics properties for the most up-to-date measure were selected for reporting, when available.

Measure	Author(s)	Internal Consistency (Alpha Coefficients)	Test-Retest Reliability (Correlation Coefficients)	Inter-Rater Reliability (Correlation Coefficients)	Construct Validity (Correlation Coefficients)	Criterion Validity (Correlation Coefficients)	Measurement Error (Standard Error of Measurement)
Bayley Scales for Infant and Toddler Development (BSITD)	Breinbauer et al., 2010	.83 – .94	.94 – .96	–	.24 – .38	–	–
	Albers & Grieve, 2007	.71 – .94	.64 – .94	.73 – .82		BSID & WISC–III .71 – .83	
						BSID & PLS–IV .51–.71	
						BSID & Vineland & ABAS–III .58–.70	
Child Behavior Checklist (CBCL)	Achenbach & Rescorla, 2001	.63 – .97	.82 – .93	.57 – .88	–	Referred and non-referred children – <i>p</i> 's <.01	–
						CBCL & Conner's Rating Scales .77 – .80	
						CBCL & BASC .52 – .89	
Child Behavior Questionnaire (CBQ)	Rutter, 1967	–	.89	.72	–	–	–
Five-to-Fifteen (FTF)	Kadesgo et al., 2004	.69 – .96	.55 – .91	.44 – .85	.563 – .953		–

	Trillingsgaard et al., 2004	.84 – .93			Can discriminate between ID, ASD, TS, ADHD, CD, anxiety disorders, OCD, depression, SLD	FTF & WISC–III .097 – .47	
	Korkamn et al., 2004	.78 – .89			Can discriminate between TD and children at risk for developmental disorders	FTF & NEPSY –0.07 – –.449	
Harter Pictorial Scale of Perceived Competence (HPSPC)	Harter & Pike, 1984	.75 – .89	–	.16 – .37	Children asked to elaborate on responses to questions (See paper for details) Can discriminate children held back in school, those not accepted by peers, maternal acceptance	Cognitive competence. & Preference for difficult tasks .42	–
Infant-toddler Social and Emotional Assessment (ITSEA)	Carter et al., 2003	.45 – .90	.69 – .90	.43 – 0.79	–	ITSEA & CBCL –.21 – .67 ITSEA & CCTI –.57 – .53 ITSEA & CES–D –.20 – .29 ITSEA & BAI –.12 – .26 ITSEA & VABS –.30 – .58 ITSEA & Mullen –.16 – .47	–
KIDSCREEN-52	Ravens-Sieberger, 2005	.77 – .89	–	–	KIDSCREEN-52 & KINDL .18 – .68	KIDSCREEN-52 & Psychosomatic Health Complaints Index	–

					KIDSCREEN-52 discriminates based on age, SES, and gender	-.53 – -.20	
Kohn Social Competence Scale (KSCS)	Kohn, 1977	–	–	.73 – .80	–	–	–
Junior Rating Scale (JRS)	Abraham & Lindsay, 1990	–	.95	–	–	–	–
Manchester Inventory for Play Observation (MIPO)	Gibson et al., 2011	.92	.58 (kappa coefficient)	.77 (kappa coefficient)	MIPO can discriminate TD, ASD, DLD, internalizing and externalizing disorders	MIPO & SSRS .78	–
My Life in School (MLIS)	-	NA	NA	NA	NA	NA	NA
Pediatric Quality of Life Inventory (Peds-QL)	Varni et al., 2001	.71 – .90	–	–	Peds-QL can discriminate healthy children from acute and chronically ill children, scores are related to # of days of school missed	–	–
Personality Inventory of Children (PIC)	Lachar, 1982	.81– .92	.82 – .91	–	–	–	–
Peer Nominations	-	NA	NA	NA	NA	NA	NA
Personalized Postal Questionnaire (PPQ)	-	NA	NA	NA	NA	NA	NA
Self-Perception Profile for Children (SPPC)	Harter, 2012	.71 – .91	–	–	SPPC & Self-Description Questionnaires .56 – .69	–	–
Strengths & Difficulties Questionnaire (SDQ)	Goodman, 2001	.73	.62	.34	–	–	–

Teacher Behavior Rating Scale (TBRs)	-	NA	NA	NA	NA	NA	NA
Teacher Report Form (TRF)	Achenbach & Rescorla, 2001	.72 – .97	.60 – .95	.20 – .76	–	Referred and non-referred children – p 's <.01 CBCL & Conner's Rating Scales .77 – .80 CBCL & BASC .52 – .89	–
Vineland Adaptive Behavior Scale (VABS)	-	NA	NA	NA	NA	NA	NA

NA = No Access; The authors did not have access to the measure or technical manual including a psychometric property review. Attempts to contact the authors/publishers for information regarding the psychometric properties of the measures were made but a response was not received in time for the manuscript revision deadline.

MEASURE ABBREVIATIONS: BAI = Beck Anxiety Inventory; BASC = Behavior Assessment System for Children; CCTI = Colorado Child Temperament Inventory; CES-D = Center for Epidemiology Scale for Depression; PLS = Preschool Language Scale; SSRS = Social Skills Rating System; WISC = Weschler Intelligence Scale for Children; VABS = Vineland Adaptive Behavior Scale.

Table S5. Psychometric properties of the language measures included in the meta-analysis. The widest ranges reported were used (i.e., across subtests and composites), and the psychometrics properties for the most up-to-date measure were selected for reporting, when available.

Measure	Author(s)	Internal Consistency (alpha coefficients)	Test-Retest Reliability (Correlation coefficients)	Inter-rater Reliability (Correlation coefficients)	Construct Validity (Correlation coefficients)	Criterion Validity (Correlation coefficients)	Measurement Error (Standard Error of Measurement)
Assessment of Comprehension and Expression Naming Test (ACE)	Review available in Denman et al., 2017	NA	NA	NA	NA	NA	NA
British Picture Vocabulary Scale (BPVS)	Dunn et al., 2019	NA	NA	NA	NA	NAN	NA
Children's Communication Checklist (CCC)	Bishop, 2003	.66 – .85	.86 – .96	–	–	TD & DLD Standard difference .44 – 1.83 All <i>p</i> 's <.001	–
	Bishop et al., 2001			.80		TD & Pragmatic Language Impairment .80 – 1.57 All <i>p</i> 's <.001 TD & ASD 1.05–2.60 All <i>p</i> 's < .001	
Comprension de Estructuras Gramaticales (CEG)	Mendoza et al., 2005	.91	–	–	.12 – .80	–	–

Clinical Evaluation of Language Fundamentals (CELF)	Semel et al., 2003	.69 – .91	.70 – .90	–	–	–	.38 – .3.53
	Wiig et al., 2013	.75 – .96	.72 – .90	.91 – .99		CELF–5 & PPVT–4 .68 – .98	
						CELF–5 & EVT–2 .65 – .98	
						TD & DLD standard difference .94 – .71	
Children’s Test of Non-word Repetition (CTNR)	Gathercole et al., 1994	.80 – .81	.77 – .80	–	–	–	–
Evaluacion de Lenguaje Infantile (ELI)	Saborit & Julia, 2005	.70 – .84	–	–	.51 – .85	–	–
Expressive Vocabulary One Word Picture Vocabulary Test (EOWPVT)	Martin & Brownell, 2010	.93 – .97	.97 – .98	–	–	–	–
Kaufman Assessment Battery for Children (K-ABC)	Kaufman et al., 1987	.86 – .97 (split half)	.83 – .92	–	–	K–ABC & WISC–III .62 – .87	–
						K–ABC & PIAT .29	
						K–ABC .65	
MacArthur Communicative Development Inventory (MCDI)	Dale et al., 1989	.67 – .96	.86 – .95	–	–	–	–

McCarthy Scales of Children's Abilities (MSCA)	Sands & D'Amato, 2018	.79 – .88	.69 – .91	–	–	–	–
Preschool Language Scale (PLS)	Zimmerman et al., 2011	.91 – .98	.86 – .95	.96 – .99	–	PLS & CELF .70 – .82	
PPQ	-	NA	NA	NA	NA	NA	NA
Peabody Picture Vocabulary Test (PPVT)	Dunn & Dunn, 2007	.94 – .95	.92 – .96	–	PPVT–4 & EVT–2 .80 – .84 PPVT–4 & CASL & CELF–4 .37 – .79 PPVT–4 & GRADE .63 PPVT–4 & PPVT –3 .84	–	–
New Reynell Developmental Language Scales (NRDLS)	Letts et al., 2014	.95 – .96	.57 – .64	–	NRDLS can discriminate TD vs. DLD children	NRDLS & BPVS–III .63 – .75 NRDLS & TROG–II .63 – .69	
Stanford-Binet (SB)	Roid, 2003	.84 – .98	.76 – .95	.74 – .98	Age growth curves supported (See manual) Loadings with “g” – .70 – .80	SB5 & SB–IV .64 – .90 SB5 & WPPSI–R .45 – .83 SB5 & WISC–III .42 – .85 SB5 & WJ–III .36 – .78	1.07 – 4.85

						SB5 & various cognitive measures tested on special populations .66 – .91 (WISC–R, WPPSI– R, K–ABC, Form– LM)	
Test of Language Development (TOLD)	Hamill & Newcomer, 1997; Hayward et al., 2008	.81 – .96	.80 – .92	.99	–	TOLD & Bankson Language Test 0.65 – 0.97	–
Test for the Reception of Grammar (TROG)	-	NA	NA	NA	NA	NA	NA
Weschler Intelligence Scale for Children (WISC)	Weschler et al., 2014	.88 – .96	.71 – .94	.97 – .99	–	WISC–V & WISC– IV – .43 – .86 WISC–V & WPPSI–IV – .24 – 83 WISC–V & KABC– II – –.26 – .80 WISC–V & KTEA–3 – –.1 – .82 WISC–V & WIAT– III – –.12 – .78 WISC–V & VABS –.33–.58 WISC–V – BASC–2 – –.20 –.11	.73 – 5.24

Can discriminate
TD with gifted,
intellectual
disability, SLD,
ADHD, disruptive
behavior samples,
TBI, ASD,
language learners,
+ more

NA = No Access; The authors did not have access to the measure or technical manual including a psychometric property review. Attempts to contact the authors/publishers for information regarding the psychometric properties of the measures were made but a response was not received in time for the manuscript revision deadline.

Measure abbreviations: CASL = Comprehensive Assessment of Spoken Language; CAT = California Achievement Test; EVT = Expressive Vocabulary Test; GRADE = Group Reading Assessment and Diagnostic Evaluation; KTEA = Kaufman Test of Individual Achievement; PIAT = Peabody Individual Achievement Test; PPVT = Picture Vocabulary Test; WJ = Woodcock Johnson; WPPSI = Weschler Preschool and Primary Scale of Intelligence

Sample type abbreviations: ADHD = Attention-Deficit Hyperactivity Disorder; ASD = Autism Spectrum Disorder; TBI = Traumatic Brain Injury; TD = Typically-Developing

*Psychometric review can be found in (Denham et al., 2017)

References

- Abraham, J.E., & Lindsay, G.A. (1990). *The Junior Rating Scale*. Windsor: NFER-Nelson.
- Achenbach, T.M., & Rescorla, L.A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Albers, C. A., & Grieve, A. J. (2007). Test Review: Bayley, N. (2006). Bayley Scales of Infant and Toddler Development– Third Edition. San Antonio, TX: Harcourt Assessment. *Journal of Psychoeducational Assessment*, 25(2), 180–190. <https://doi.org/10.1177/0734282906297199>
- Bayley, N. (2006). *Bayley Scales of Infant and Toddler Development–Third Edition*. San Antonio, TX: Harcourt Assessment.
- Bishop, D. V. M. (1998). Development of the Children’s Communication Checklist (CCC): A method for assessing qualitative aspects of communicative impairment in children. *Journal of Child Psychology and Psychiatry*, 39(6), 879-891.
- Breinbauer, C., Mancil, T. L., & Greenspan, S. (2010). The Bayley-III Social-Emotional Scale. In L. G. Weiss, T. Oakland, & G. P. Ayland (Ed.), *Bayley-III clinical use and interpretation* (pp. 147-175). Academic Press.
- Carter, A. S., Briggs-Gowan, M. J., Jones, S. M., & Little, T. D. (2003). The Infant-Toddler Social and Emotional Assessment (ITSEA): Factor structure, reliability, and validity. *Journal of Abnormal Child Psychology*, 31(5), 485-514.
- Dale, P. S., Bates, E., Reznick, J. S., & Morisset, C. (1989). The validity of a parent report instrument of child language at twenty months. *Journal of Child Language*, 16(2), 239–249. <https://doi.org/10.1017/S0305000900010394>

- Denman, D., Speyer, R., Munro, N., Pearce, W. M., Chen, Y. W., & Cordier, R. (2017). Psychometric properties of language assessments for children aged 4-12 years: A systematic review. *Frontiers in Psychology*, 8, 1515.
<https://doi.org/10.3389/fpsyg.2017.01515>
- Dunn, L.M., & Dunn, D.M. (2007). *The Peabody Picture Vocabulary Test, Fourth Edition*. Bloomington, MN: NCS Pearson, Inc.
- Gathercole, S. E., Willis, C. S., Baddeley, A. D., & Emslie, H. (1994). The Children's Test of Nonword Repetition: A test of phonological working memory. *Memory*, 2(2), 103-127.
- Gibson, J., Hussain, J., Adams, C., Holsgrove, S., & Green, J. (2011). Quantifying children's peer interactions for research and clinical use: The Manchester Inventory for Playground Observation MIPO. *Research in Developmental Disabilities*, 32, 2458–2466.
- Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40(11), 1337-1345.
- Hamill, D. D. & Newcomer, P. L. (1997). *Test of Language Development-Primary 3 (TOLD-P:3)*. Austin, TX: ProEd.
- Harter, S. (2012). *Self-Perception Profile for Children: Manual and Questionnaires (Grades 3–8)* Denver: University of Denver.
- Harter, S. & Pike, R. (1984). The Pictorial Scale of Perceived Competence and Social Acceptance for Young Children. *Child Development*, 55(6), 1969-1982.
- Hayward, D. V., Stewart, G. E., Phillips, L. M., Norris, S. P., & Lovell, M. A. (2008). Test review: Test of language development-primary 3rd edition (TOLD-P:3). *Language, Phonological Awareness, and Reading Test Directory* (pp. 1-11). Edmonton, AB:

Canadian Centre for Research on Literacy. Retrieved July 23, 2023 from

<http://www.uofaweb.ualberta.ca/elementaryed/ccrl.cfm>

- Kadesjö, B., Janols, L.-O., Korkman, M., Mickelsson, K., Strand, G., Trillingsgaard, A., & Gillberg, C. (2004). The FTF (Five to Fifteen): the development of a parent questionnaire for the assessment of ADHD and comorbid conditions. *European Child & Adolescent Psychiatry*, 13 Suppl 3(S3), 3–13. <https://doi.org/10.1007/s00787-004-3002-2>
- Kaufman, A. S., O'Neal, M. R., Avant, A. H., & Long, S. W. (1987). Introduction to the Kaufman Assessment Battery for Children (K-ABC) for pediatric neuroclinicians. *Journal of Child Neurology*, 2(1), 3–16. <https://doi.org/10.1177/088307388700200102>
- Kohn, M. (1977). The Kohn Social Competence Scale and Kohn Symptom Checklist for the preschool child: A follow-up report. *Journal of Abnormal Child Psychology*, 5, 249-263.
- Korkman, M., Jaakkola, M., Ahlroth, A., Pesonen, A. E., & Turunen, M. M. (2004). Screening of developmental disorders in five-year-olds using the FTF (Five to Fifteen) questionnaire: a validation study. *European Child & Adolescent Psychiatry*, 13 Suppl 3, 31–38. <https://doi.org/10.1007/s00787-004-3005-z>
- Lacher, D. *Personality Inventory for Children (PIC): Revised format manual supplement*. Los Angeles: Western Psychological Services, 1982.
- Letts, C., Edwards, S., Schaefer, B., Sinka, I. (2014). The New Reynell Developmental Language Scales: Descriptive account and illustrative case study. *Child Language Teaching and Therapy*, 30(1), 103-116.
- Martin, N., & Brownell, R. (2010). *Receptive one-word picture vocabulary test* (4th ed.). Novato: Academic Therapy Publications.

Mendoza, E., Carballo, G., Muñoz, J., & Fresneda, M. D. (2005). *Test de Comprensio'n de Estructuras Gramaticales (CEG)*. Madrid:

TEA – Ediciones

Ravens-Sieberer, U., Gosch, A., Rajmil, L., Erhart, M., Bruil, J., Duer, W., Auquier, P., Power, M., Abel, T., Czemy, L., Mazur, J.,

Czimbalmos, A., Tountas, Y., Hagquist, C., Kilroe, J., & KIDSCREEN Group, E. (2005). KIDSCREEN-52 quality-of-life

measure for children and adolescents. *Expert Review of Pharmacoeconomics & Outcomes Research*, 5(3), 353+. [https://link-](https://link-gale-com.ezproxy.lib.ucalgary.ca/apps/doc/A242317631/HRCA?u=ucalgary&sid=bookmark-HRCA&xid=a690faa2)

[gale-com.ezproxy.lib.ucalgary.ca/apps/doc/A242317631/HRCA?u=ucalgary&sid=bookmark-HRCA&xid=a690faa2](https://link-gale-com.ezproxy.lib.ucalgary.ca/apps/doc/A242317631/HRCA?u=ucalgary&sid=bookmark-HRCA&xid=a690faa2)

Roid, G. H. (2003). *Stanford-Binet Intelligence Scales, Fifth Edition, Technical Manual*. Itasca, IL: Riverside Publishing.

Rutter, M. (1967). A children's behaviour questionnaire for completion by teachers: Preliminary findings. *Child Psychology &*

Psychiatry & Allied Disciplines, 8(1), 1–11. <https://doi.org/10.1111/j.1469-7610.1967.tb02175.x>

Saborit, C., & Julia, J. P. (2005). *L'avaluacio' del llenguatge infantil*. ELI. Universitat Jaume I de Castello'n. Coleccio'n:

Educacion.

Sands, R. & D'Amato, R. C. (2018). *McCarthy Scales of Children's Abilities*. In J. S. Kreutzer, J. DeLuca, & Caplan, B. (Eds.),

Encyclopedia of Clinical Neuropsychology (pp. 2092-2093). Springer Cham.

Semel, E., Wiig, E., & Secord, W. (2003). *Clinical Evaluation of Language Fundamentals-4th Edition*. San Antonio, TX: The

Psychological Corporation.

- Trillingsgaard, A., Damm, D., Sommer, S., Jepsen, J. R., Ostergaard, O., Frydenberg, M., & Thomsen, P. H. (2004). Developmental profiles on the basis of the FTF (Five to Fifteen) questionnaire-clinical validity and utility of the FTF in a child psychiatric sample. *European child & adolescent psychiatry, 13 Suppl 3*, 39–63. <https://doi.org/10.1007/s00787-004-3006-y>
- Varni, J. W., Seid, M., & Kurtin, P. S. (2001). PedsQL™ 4.0: reliability and validity of the Pediatric Quality of Life Inventory™ version 4.0 generic core scales in healthy and patient populations. *Medical Care, 39*(8), 800–812.
- Wiig, E H., Semel, E., Secord, W. A. (2013). *Clinical Evaluation of Language Fundamentals-Fifth Edition (CELF-5): Technical Manual*. Bloomington, MN: NCS Pearson
- Zimmerman, I. L., Steiner, V, G., & Pond, E. (2011). *Preschool Language Scales- Fifth Edition (PLS-5)*. San Antonio, TX: Pearson