<table>
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<tr>
<th>General developmental screening tool</th>
<th>Description</th>
<th>Age Range</th>
<th>No. of Items</th>
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<th>Purchase/Obtainment Information</th>
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<tr>
<td>Ages &amp; Stages Questionnaires (ASQ)</td>
<td>Parent-completed questionnaire; series of 19 age-specific questionnaires screening communication, gross motor, fine motor, problem-solving, and personal adaptive skills; results in pass/fail score for domains</td>
<td>4–60 mo</td>
<td>30</td>
<td>10–15 min</td>
<td>Normed on 2008 children from diverse ethnic and socioeconomic backgrounds, including Spanish speaking; sensitivity: 0.70–0.90 (moderate to high); specificity: 0.76–0.91 (moderate to high)</td>
<td>Risk categorization, provides a cutoff score in 5 domains of development that indicates possible need for further evaluation</td>
<td>English, Spanish, French, and Korean versions available</td>
<td>Paul H. Brookes Publishing Co: 800/638-3775; <a href="http://www.brookespublishing.com">www.brookespublishing.com</a></td>
<td>Squires J, Potter L, Bricker D. <em>The ASQ User's Guide: 2nd ed.</em> Baltimore, MD: Paul H. Brookes Publishing Co; 1999</td>
</tr>
<tr>
<td>Battelle Developmental Inventory Screening Tool, 2nd ed (BDI-ST)</td>
<td>Directly administered tool; designed to screen personal-social, adaptive, motor, communication, and cognitive development; results in pass/fail score and age equivalent; can be modified for children with special needs</td>
<td>Birth to 95 mo</td>
<td>100</td>
<td>10–15 min (&lt;3 y old) or 20–30 min (≥3 y old)</td>
<td>Normed on 2500 children, demographic information matched 2000 US Census data; additional bias reviews performed to adjust for gender and ethnicity concerns; sensitivity: 0.72–0.93 (moderate to high); specificity: 0.79–0.86 (moderate)</td>
<td>Quantitative; scaled scores in all 5 domains are compared with cutoffs to determine need for referral</td>
<td>English and Spanish versions available</td>
<td>Riverside Publishing Co: 800/323-9540; <a href="http://www.riverpub.com">www.riverpub.com</a></td>
<td>Newborg J. <em>Battelle Developmental Inventory.</em> 2nd ed. Itasca, IL: Riverside Publishing; 2004</td>
</tr>
<tr>
<td>Bayley Infant Neurodevelopmental Screen (BINS)</td>
<td>Directly administered tool; series of 6 item sets screening basic neurologic functions; receptive functions (visual, auditory, and tactile input); expressive functions (oral, fine, and gross motor skills), and cognitive processes; results in risk category (low, moderate, high risk)</td>
<td>3–24 mo</td>
<td>11–13</td>
<td>10 min</td>
<td>Normed on ~1700 children, stratified on age, to match the 2000 US Census; sensitivity: 0.75–0.86 (moderate); specificity: 0.75–0.86 (moderate)</td>
<td>Risk categorization; children are graded as low, moderate, or high risk in each of 4 conceptual domains by use of 2 cutoff scores</td>
<td>English and Spanish versions available</td>
<td>Psychological Corp: 800/211-8378; <a href="http://www.harcourtassessment.com">www.harcourtassessment.com</a></td>
<td>Aylward GP. Bayley-Infant Neuromotor Developmental Screener. <em>San Antonio, TX: Psychological Corp;</em> 1995; Aylward GP, Verhulst SJ, Bell S. Predictive utility of the BINS Bayley Infant Neuromotor Developmental Screener (BINS) risk status classifications: clinical interpretation and application. <em>Dev Med Child Neurol.</em> 2000; 42:25–31</td>
</tr>
<tr>
<td>Brigance Screens-II</td>
<td>Directly administered tool; series of 9 forms screening articulation, expressive and receptive language, gross motor, fine motor, general knowledge and personal social skills and pre-academic skills (when appropriate); for 0–23 mos, can also use parent report</td>
<td>0–90 mo</td>
<td>8–10</td>
<td>10–15 min</td>
<td>Normed on 1156 children from 29 clinical sites in 21 states; sensitivity: 0.70–0.80 (moderate); specificity: 0.70–0.80 (moderate)</td>
<td>All results are criterion based; no normative data are presented</td>
<td>English and Spanish versions available</td>
<td>Curriculum Associates Inc: 800/225-0248; <a href="http://www.curriculumassociates.com">www.curriculumassociates.com</a></td>
<td>Glascue FP. Technical Report for the Brigance Scales. <em>North Billerica, MA: Curriculum Associates Inc,</em> 2005; Glascue FP. The Little Brigance; <em>Pre-School Screen (B1S): standardization and validation.</em> J Dev Behav Pediatr. 2002;23:145–150</td>
</tr>
<tr>
<td>Child Development Inventory (CDI)</td>
<td>Parent-completed questionnaire; measures social, self-help, motor, language, and general development skills; results in developmental quotients and age equivalents for different developmental domains; suitable for more in-depth evaluation</td>
<td>18 mo–6 y</td>
<td>300</td>
<td>30–50 min</td>
<td>Normative sample included 568 children from South St Paul, MN, a primarily white, working class community. Dog et al included 43 children from a high-risk follow-up program, which included 69% with high school education or less and 81% Medicaid; sensitivity: 0.80–1.0 (moderate to high); specificity: 0.94–0.96 (high)</td>
<td>Quantitative; provides age equivalents in each domain as well as SDs</td>
<td>English and Spanish versions available</td>
<td>Behavior Science Systems Inc: 612/850-6700; <a href="http://www.behavioursystems.com">www.behavioursystems.com</a></td>
<td>Ireten H. <em>Child Development Inventory Manual.</em> Minneapolis, MN: Behavior Science Systems Inc; 1992; Dogg KB, Matac M. <em>Measurement skills,</em> Saylor CF, Craver JR, Ingram PE. <em>The Child Development Inventory: a developmental outcome measure for follow-up of the high risk infant.</em> J Pediatr. 1999;135:358–362</td>
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<tr>
<td><strong>Child Development Review-Parent Questionnaire (CDR-PQ)</strong></td>
<td>Parent-completed questionnaire; professional-completed child development chart measures social, self-help, motor, and language skills</td>
<td>18 mo to 5 y</td>
<td>6 open-ended questions and a 26-item possible-problems checklist to be completed by the parent, followed by 99 items crossing the 5 domains, which may be used by the professional as an observation guide or parent-interview guide</td>
<td>10–20 min</td>
<td>Standardized with 220 children aged 3–4 y from primarily white, working class families in south St Paul, MN; sensitivity: 0.68 (low), specificity: 0.88 (moderate)</td>
<td>Risk categorization; parents’ responses to the 6 questions and problems checklist are classified as indicating (1) no problem; (2) a possible problem; or (3) a possible major problem</td>
<td>English and Spanish versions available</td>
<td>Behavior Science Systems Inc</td>
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<tr>
<td><strong>Denver-II Developmental Screening Test</strong></td>
<td>Directly administered tool; designed to screen expressive and receptive language, gross motor, fine motor, and personal-social skills; results in risk category (normal, questionable, abnormal)</td>
<td>0–6 y</td>
<td>125</td>
<td>10–20 min</td>
<td>Normed on 2006 term children in Colorado; diversified in terms of age, place of residence, ethnicity/cultural background, and maternal education; sensitivity: 0.56–0.81 (low to moderate), specificity: 0.43–0.80 (low to moderate)</td>
<td>Risk categorization; pass or fail for each question, and these responses are compared with age-based norms to classify children as in the normal range, suspect, or delayed</td>
<td>English and Spanish versions available</td>
<td>Denver Developmental Materials: 800/419-4729; <a href="http://www.denverii.com">www.denverii.com</a></td>
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<tr>
<td><strong>Infant Development Inventory</strong></td>
<td>Parent-completed questionnaire; measures social, self-help, motor, and language skills</td>
<td>0–18 mo</td>
<td>4 open-ended questions followed by 87 items crossing the 5 domains</td>
<td>5–10 min</td>
<td>Studied in 86 high-risk 8-month-olds seen in a perinatal follow-up program and compared with the Bayley scales; sensitivity: 0.85 (moderate), specificity: 0.77 (moderate)</td>
<td>Risk categorization; delayed or not delayed</td>
<td>English and Spanish versions available</td>
<td>Behavior Science Systems Inc</td>
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<tr>
<td><strong>Parents’ Evaluation of Developmental Status (PEDS)</strong></td>
<td>Parent-interview form; designed to screen for developmental and behavioral problems needing further evaluation; single response form used for all ages; may be useful as a surveillance tool</td>
<td>0–8 y</td>
<td>10</td>
<td>2–10 min</td>
<td>Standardized with 771 children from diverse ethnic and socioeconomic backgrounds, including Spanish speaking; sensitivity: 0.74–0.79 (moderate), specificity: 0.70–0.80 (moderate)</td>
<td>Risk categorization; provides algorithm to guide need for referral, additional screening, or continued surveillance</td>
<td>English, Spanish, Vietnamese, Arabic, Swahili, Indonesian, Chinese, Taiwanese, French, Somali, Portuguese, Malaysian, Thai, and Laotian versions available</td>
<td>Ellsworth &amp; Vandermeer Press LLC: 888/729-1697; <a href="http://www.pedstest.com">www.pedstest.com</a></td>
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*Quantitative (developmental age levels and quotient)
Communication and Symbolic Behavior Scales-Developmental Profile (CSBS-DP); Infant Toddler Checklist

- Standardized tool for screening of communication and symbolic abilities up to the 24-mo level; the Infant Toddler Checklist is a 1-page parent-completed screening tool.

- Standardized on 2188 North American children aged 6-24 mo; correlations: 0.39–0.75 with Mullen Scales at 2 yo of age; sensitivity: 0.76–0.88 in low- and at-risk children at 2 y of age (moderate); specificity: 0.62–0.87 in low- and at-risk children at 2 y of age (moderate).

- Risk categorization (concern/no concern)

Early Language Milestone Scale (ELM Scale-2)

- Assesses speech and language development from birth to 36 mo.

- Small cross-sectional standardization sample of 191 children; 235 children for speech intelligibility item; sensitivity: 0.83–1.00 in low-and high-risk populations (moderate to high); specificity: 0.68–1.00 in low-and high-risk populations (low to high).

Motorscreening tools

- Early Motor Pattern Profile (EMPP)

- Motor Quotient (MQ)

- Autism screening tools

- Checklist for Autism in Toddlers (CHAT)

- Modified Checklist for Autism in Toddlers (M-CHAT)

Motor screening tools

- Physician-administered standard examination of movement, tone, and reflex development; simple 3-point scoring system.

- Uses simple ratio quotient with gross motor milestones for detecting delayed motor development.

Autism screening tools

- Parent-completed questionnaire or interview and directly administered items designed to identify children at risk of autism from the general population.

- Parent-completed questionnaire designed to identify children at risk of autism from the general population.

- Standardization sample included 41 siblings of children with autism and 50 controls; 18 mo of age in Great Britain; 6-y follow-up on 1623 children validated using ADI-R and ICD-10 criteria resulted in low sensitivity, high specificity; revised version in process of being normed (Q-CHAT);

- Standardization sample included 1293 children screened, 84 evaluated, and 39 diagnosed with an autistic spectrum disorder; validated using ADI-R, ADOS-Q, CARS, DSM-IV; sensitivity: 0.85–0.87 (moderate); specificity: 0.93–0.99 (high).

- Risk categorization (pass/fail)

- Risk categorization (normal/suspect/abnormal)

- Risk categorization (concern/no concern)

- Risk categorization (pass/fail)

- Quantitative (age equivalent, percentile, standard score)

Risk categorization

- Normal/suspect/abnormal

- Concern/no concern

- Pass/fail

- Normal/suspect/abnormal

English version available

- Paul H. Brookes Publishing Co

- Pro-Ed Inc: 800/897-3202; www.proedinc.com

- Public domain: www.firstsigns.com

- English version available

- See key references

- Public domain: www.nas.org.uk/profess/chat

- See key references

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<tr>
<td>Pervasive Developmental Disorders Screening Test-II (PDDST-II), Stage 1-Primary Care Screener</td>
<td>12-48 mo</td>
<td>22 (No. of questions/items [averaged])</td>
<td>10-15 min to complete; 5 min to score</td>
<td>Validated using extensive multithread diagnostic evaluations on 681 children at risk of autistic spectrum disorders and 256 children with mild-to-moderate other developmental disorders; no sensitivity/specificity data reported for screening of an unselected sample; sensitivity: 0.85-0.92 (moderate to high); specificity: 0.71–0.91 (moderate to high)</td>
<td>Risk categorization (pass/fail)</td>
<td>English version available</td>
<td>Psychological Corp</td>
<td>Siegel B. Pervasive Developmental Disorders Screening Test-II (PDDST-II): Early Childhood Screener for Autistic Spectrum Disorders; San Antonio, TX: Harcourt Assessment Inc; 2004</td>
</tr>
<tr>
<td>Pervasive Developmental Disorders Screening Test-II (PDDST-II), Stage 2-Developmental Clinic Screener</td>
<td>12–48 mo</td>
<td>14 (No. of questions/items [averaged])</td>
<td>10–15 min to complete; 5 min to score</td>
<td>Validated using extensive multithread diagnostic evaluations on 490 children with confirmed autistic spectrum disorder (autism, pervasive developmental disorder—not otherwise specified, or Asperger syndrome) and 194 children who were evaluated for autistic spectrum disorder but who did not receive a diagnosis on the autistic spectrum; no sensitivity/specificity data reported for screening of an unselected sample; sensitivity: 0.69–0.73 (moderate); specificity: 0.49–0.63 (low)</td>
<td>Risk categorization (pass/fail)</td>
<td>English version available</td>
<td>Psychological Corp</td>
<td>Siegel B. Pervasive Developmental Disorders Screening Test-II (PDDST-II): Early Childhood Screener for Autistic Spectrum Disorders; San Antonio, TX: Harcourt Assessment Inc; 2004</td>
</tr>
<tr>
<td>Social Communication Questionnaire (SCQ) (formerly Autism Screening Questionnaire-ASQ)</td>
<td>≥4 y</td>
<td>40 (No. of questions/items [averaged])</td>
<td>5–10 min</td>
<td>Validated using the ADI-R and DSM-IV on 200 subjects (160 with pervasive developmental disorder, 40 without pervasive developmental disorder); for use in children with mental age of at least 2 y and chronologic age ≥4 y, available in 2 forms: lifetime and current; sensitivity: 0.85 (moderate); specificity: 0.75 (moderate)</td>
<td>Risk categorization (pass/fail)</td>
<td>English and Spanish versions available</td>
<td>Western Psychological Corp; <a href="http://www.wpspublish.com">www.wpspublish.com</a></td>
<td>Rutter M, Bailey A, Lord C. The Social Communication Questionnaire (SCQ): Manual. Los Angeles, CA; Western Psychological Services, 2003</td>
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</table>

The AAP does not approve/endorse any specific tool for screening purposes. This list is not exhaustive, and other tests may be available. ADI-R indicates Autism Diagnostic Interview-R; ICD-10, International Classification of Diseases, 10th revision; ADOS-G, Autism Diagnostic Observation Schedule-Generic; CARS, Childhood Autism Rating Scale; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition.

* Sensitivity and specificity were categorized as follows: low = 69 or below; moderate = 70 to 89; high = 90 or above.