Ages and Stages Questionnaire (ASQ)/Infant/Child Monitoring Questionnaire (ICMQ, for Hawai‘i)
J. Squires, L. Potter, and D. Bricker, 1999

Characteristics of samples used for norming, validity and reliability determination:

- N = 2008. Nonclinical status, n = 388; Clinical (risk) status, n = 1620; 47% female, 53% male;
  64.9% Caucasian, 35.1% Minority (including Asian/Pacific Islander). Other demographics are
  family income, with roughly equal percentages (approximately 12-15%) for 0 to $25,000, 30% for
  more than $25,000, and 2% for over $40,000; and occupational and educational status of
  mother and father.

Concurrent validity:

- Compared ASQ/ICMQ classification to classification derived from professional administration
  of Revised Gesell and Armatruda Developmental and Neurological Examination and Bayley
  Scales of Infant Development for children 0-30 mo.; Stanford-Binet Intelligence Scale and the
  McCarthy Scales of Children’s Abilities for children 3-4 years; and the Battelle Developmental
  Inventory for children 5 years old (n = 1644): average percent agreement = 83.94%.

Test-Retest reliability:

- Parents completed 2 questionnaires in a 2-week time period, n = 175, percentage agreement
  between classifications = 94%.

Interobserver reliability:

- Percent agreement between classifications based on parent-completed questionnaires and
  examiner-completed questionnaires (112 parents, 2 examiners) was 94%.

Number of items:

- Six per domain, 30 for each age level (4 mo., 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36,
  42, 48, 54, and 60 mo.).

Scoring:

- Not yet, sometimes, yes, which is translated into low or high risk for developmental delays

How to order:

- Paul H. Brookes Publishing Co., P.O. Box 10624, Baltimore, MD 21285-0624, 800-638-3775,
  www.brookespublishing.com

Battelle Developmental Inventory (BDI) Screening Test

Characteristics of samples used for norming and validity determination:

- Norming, n = 800; 83.9% white, 16.1% minority (Hispanic and African American); 50.9%
  female, 49.1% male. Sample representative of 1981 Census Data for sex, race, geographical
  region. Clinical sample n=160. No significant differences were found for race or sex.

Concurrent validity:

- Correlations with full BDI Component and total scores: range from .92 to .99 (n = 164).
  Components of the full BDI correlate significantly with Vineland Social Maturity Scale (n=37),
  Developmental Activities Screening Inventory (DASI, n = 36), Stanford-Binet Intelligence
  Scale (n=23), WISC-R (n=33), and Peabody Picture Vocabulary Test-Revised (PPVT-R, n=15),
  coefficients range from .46 to .93.

Predictive validity:
Children with developmental delays score lower than typically developing kids: out of 147 comparisons between t-scores for children ages 0-3 (59 children in clinical sample, 301 children in norming sample, n = 360), 142 were significant, most at .001 level.

Test-Retest reliability:
Re-tested 183 children within 1 month of original screen, r = .92 to .99 over 5 domain scores and total score.

Interrater reliability:
n = 183 children, r = .94 to .98 over 5 domain scores and total score.

Number of items:
Two per age level, about 6 items per domain and 30 total per child will be administered at each age level (0 – 5, 6 – 11, 12 – 17, 18 – 23, 24 – 35, 36 – 47, 48 – 59, 60 – 71, 72 – 83, 84 – 95 mo.).

Scoring:
Each item is scored 0 (no attempts, not doing), 1 (trying, but not perfect), and 2 (mastery, doing all the time). There are percentile ranks, standard scores, and age equivalents. A decision based on total domain score is made as to whether child passes or fails domain.

How to order:

Bayley Infant Neurodevelopmental Screener (BINS)
Glen P. Aylward, 1995

Characteristics of samples used for norming and validity determination:
Non-clinical sample, n = 600, stratified on age, sex, race, geographic region, and parent education level; equal numbers of children at each age level and equal numbers of male and female at each age level. Non-clinical sample very closely representative of U.S. 1988 Census data for race (including Pacific Islanders), parent education, and geographic region. Clinical sample, n = 303, unequal numbers at each age level. Bias analyses revealed either no sex- or race-biased items, only 1 biased item, or complementary biases on 2 items (only compared White to African-American and to Hispanic).

Concurrent validity: Pearson Correlation Coefficients with Bayley Scales of Infant Development, Second Edition (BSID-II; n = 199), average over ages and MDI/PDI of BSID-II = .55, range .39 to .82. Pearson Correlation Coefficients with BDI (n = 60), average over ages and domains = .35, range -.16 to .51). Nonclinical infants used.

Test-Retest reliability:
Nonclinical infants (n = 150) re-tested an average of 3.9 days after first screening, average correlation of 2 testings over 3 ages (3, 9, 18 mo) is .79, range .71 to .84 and increasing with age; the difference between testings was significant at 3 months but non-significant at 9 and 18 months.

Interrater reliability:
Nonclinical infants (n = 90) rated by 2 examiners, coefficients over 3 ages (6, 12, 24 mo) averaged .87, range from .79 to .96 and increase with age.

Number of items:
Eleven to thirteen for each of the 6 developmental ages (3, 6, 9, 12, 18, and 24 mo).

Scoring:
Optimal/non-optimal which leads to classification of low, moderate, or high risk for neurological impairment.
Parent Evaluation of Developmental Status (PEDS)
Characteristics of samples used for norming and validity determination:
Normed and validated on 771 children in various SES and ethnic backgrounds across the US in various settings (including Pediatric offices).
Concurrent validity:
Compared types of parental concerns with 10 different measures (e.g. Stanford-Binet Intelligence Scale, BSID – II, BDI Screening Test, Vineland Adaptive Behavior Scales), N = 771 (different numbers of children were tested with the 10 different measures). Correlations ranged from .04 to 1.0. For BDI Screening Test (n = 156), r = .45 to .65, average = .59.
Test-Retest reliability:
After initial clinic visit, 40 parents were re-interviewed over the phone 2 weeks later; agreement ranged from 80% to 100%, averaging 88%.
Interrater reliability:
Protocols from 40 parents in pilot studies were submitted to a second researcher; percent agreement ranged from 80% to 100%, averaging 95%. To determine if a different interviewer could elicit the same concerns from parents, a second examiner interviewed 40 parents from pilot study over the phone 2 weeks after initial interview; agreement ranged from 80% to 100% and averaged 88%.
Number of items:
Ten items/age level, 12 age levels (0 – 4 mo., 4 – 6, 6 – 12, 12 – 15, 15 – 18, 18 – 23 mo., 2 yrs., 3, 4 – 4.5, 4.5 – 6, 6 – 7, 7 – 8 yrs.)
Scoring:
Parents reports no, yes, or a little about presence of concerns in each item. Compare number of concerns which are significant predictors of difficulties reported to the number concerns which are non-significant predictors of difficulties.
How to order:

Denver Developmental Screening Test (Denver II/DDST-II) and Denver Prescreening Developmental Questionnaire II (PDQ-II)/Revised Denver Prescreening Developmental Questionnaire (RPDQ)
Characteristics of samples used for norming and validity determination:
Denver II, N = 1,036 children in Denver area for norming. PDQ-II based on Denver II.
Concurrent validity:
The authors found correlations ranging from .84 to .95 between the DDST and the Stanford-Binet: Form L-M, Revised Yale Developmental Schedule, and Bayley Scales (N=236 clinical and non-clinical). An independent researcher found correlations of .82, and .52 between the
DDST and the Stanford-Binet: Form L-M, and the PPVT, respectively. Other research raises serious questions about the validity. Comparing PDQ-II to Denver II, obtained 96% agreement in results (N = 193; 73 clinical and 120 nonclinical).

Test-Retest reliability:
DDST was completed one week apart for 186 Colorado children; agreement ranged from 66-93%. Agreement between R-PDQ questionnaires completed one week apart for 51 children was 94%.

Interrater reliability:
DDST rates of agreement among 4 examiners who participated in standardization ranged from 80-95%. For R-PDQ, agreement between teachers and parent ratings for 71 children was 83%.

Number of items:
Denver: personal-social, 23; fine motor, 30; language, 21; gross motor, 31.
PDQ-II, 27 for 0-9 mo., 33 for 9-24 mo., 25 for 2-4 yr., 14 for 4-6 yr.

Scoring:
For Denver: pass/fail; only items that are passed are scored to create a profile. Profile scores are interpreted as abnormal, questionable, normal, or untestable based on the number of passes in each of the four domains of the test.
For PDQ-II: Yes, No answers, delay indicated when response is no for an item passed by 90% of children in the Denver Developmental Screening Test at a younger age.

How to order:
Denver Developmental Materials Inc., P.O. Box 371075, Denver, CO 80237-5075, 800-419-4729.