

# Early Childhood Measurement and Evaluation Tool Review

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## **Ages and Stages Questionnaire (ASQ): A Parent-Completed, Child-Monitoring System (3rd Ed.)**

### **Measurement Areas:**

The ASQ is designed to provide information on how a child is performing in 5 key developmental areas:

1. Communication
2. Gross motor skills
3. Fine motor skills
4. Problem-solving
5. Personal-social skills

The ASQ ranges from 4-60 months, with questionnaires for ages (in months): 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 42, 48, 54, and 60.

### **Purpose:**

The ASQ can be used for two purposes:

- As a first-level screening tool to identify infants and children that may require further assessment.
- As a monitoring tool to gauge the development of children who are at-risk for developmental disabilities or delays.

The ASQ is distributed by doctors, teachers, and other professionals to parents for completion. The questionnaire is then returned to the professional, who scores it and provides feedback.

### **Length and Structure:**

The ASQ takes 10-15 minutes to complete, and 2-3 minutes to score. The ASQ contains a series of 19 parent-completed questionnaires with 30 developmental items in each questionnaire. A parent responds “yes”, “sometimes”, or “not yet” to each of the 30 items for the questionnaire appropriate

to the child's age, these responses are then converted to point values and added together. The total score is then compared to established screening cut-offs: if a score falls below a set cut-off (2 standard deviations below the mean, based on the normative sample), a child is identified as requiring further diagnostic testing. The ASQ questionnaires contain a section where parents can record general concerns/issues that are not captured in the questionnaires.

### **Materials:**

The complete paper-based ASQ system is available for USD \$225. The ASQ forms can be photocopied therefore there are no additional fees for questionnaires and scoring sheets. A book and CD-ROM of activities are also available for USD \$24.95 each (the learning activities include games and ideas for interaction with children that address the five developmental areas – these activities can be shared with parents and childcare professionals). You can also purchase the questionnaires and scoring sheets, in addition to 200 intervention activities in one CD-ROM.

### **Accessibility:**

The ASQ is available in English, French, Spanish, with some ages available in Korean. Other translations are under development.

### **Administration, Scoring, and Interpretation:**

The ASQ is easy to administer, and appropriate for parent-completion. The test is easy to score, and moderately easy to interpret. Training for scoring and interpretation is available for professionals and paraprofessionals through the publisher.

### **Subscales:**

A score is calculated for each of the 5 developmental areas (communication, gross motor skills, fine motor skills, problem-solving, and personal-social skills). Subscales can be administered and interpreted alone.

### **Documentation:**

The User's Guide, which is included in the purchase of the ASQ system, outlines specific procedures for administration, scoring, and interpretation, as well as provides information on reliability and validity.

### **Norming Sample:**

The original norming sample included 2008 children (53% male and 47% female) between the ages of 4 to 36 months that met the following criteria:

1. No previous history of developmental or serious health problems as reported by parents;
2. Birth at full-term (>37 weeks); and
3. No assignment to a NICU (Neonatal Intensive Care Unit).

The large quantity of data collected was used to establish the means and ultimately the cutoff scores for the ASQ. The population was sufficient to develop norms for each of the developmental intervals from 4 to 36 months. Additional data was collected on 320 children at 48 and 60 months of age.

### Reliability:

Coefficient alphas for the 5 developmental areas typically range from .60 to .70. Alphas tend to increase with the age interval and tend to be lower for the Personal-Social subscale. These reliability estimates are considered adequate given that there is a small number of items in each area and the age range of the sample.

**Test-retest reliability** was evaluated by comparing the results of 2 questionnaires completed by parents within a 2-week time period. Test-retest reliability was calculated as percentage of agreement in classification (94%) for a sample of 175 parents.

**Interobserver reliability** was determined by comparing questionnaires completed by parents with those completed by professionals. The percentage agreement in classification for a sample of 112 parents compared with 2 examiners was 94%.

### Validity:

Concurrent validity of the ASQ was examined by comparing classifications based on the ASQ with other standardized measures of development (e.g., Bayley Scales of Infant Development, Stanford-Binet Intelligence Scale, and Battelle Developmental Inventory). The percent agreement between questionnaires and standardized assessments ranged from 76% for the 4-month ASQ questionnaire to 91% for the 36-month ASQ questionnaire, with 84% overall agreement.

Sensitivity, the proportion of children who were classified as having developmental delays on both the ASQ and the comparison standardized instrument ranged from 51% for the 4-month ASQ questionnaire to 90% for the 36-month ASQ questionnaire, with 72% overall agreement.

Specificity, the proportion of children classified as not having a developmental delay on both the ASQ and the comparison instrument ranged from 81% for the 16-month ASQ questionnaire to 92% for the 36-month ASQ questionnaire, with 86% overall agreement.

### Publication Information:

Diane Bricker and Jane Squires created the ASQ, with assistance from Linda Mounts, LaWanda Potter, Robert Nickel, Elizabeth Twombly, and Jane Farrell. This review is based on the 2nd Edition, published in 1999 by the Brookes Publishing Company.

### References:

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