

Re: Study to Explore Early Development  
Developmental evaluation feedback for *<name of child>*  
Date of birth: *<insert>*  
Date of test: *<insert>*

Dear *<insert>*,

Thank you for taking part in the Study to Explore Early Development. As you know, results from this study may help researchers find out more about possible causes of autism spectrum disorders and other developmental disabilities. Results may also lead to better services and treatments for children with autism and related disabilities. Your participation in this study helps us reach these goals.

**ASD Workflow:** *<name of child>* was given two assessments as part of the child evaluation: the Mullen Scales of Early Learning (Mullen) and the Autism Diagnostic Observation Schedule – Second Edition (ADOS-2). You also completed some questionnaires and interviews about your child’s development including the Child Behavior Checklist (CBCL/1½–5), Vineland Adaptive Behavior Scales – Second Edition (Vineland-2), and the Autism Diagnostic Interview, Revised (ADI-R). In general, these assessments measure learning, social, communication, and behavior skills.

**POP Workflow:** *<name of child>* was given the Mullen Scales of Early Learning (Mullen) as part of the child evaluation. You also completed the Child Behavior Checklist (CBCL/1½–5). In general, these assessments measure learning, social, communication, and behavior skills.

The assessments were administered according to general clinical guidelines and are thought to be valid and reliable measures of your child’s abilities at the time of testing. However, the scores should not be used alone to make educational or treatment decisions for your child because of the following reasons:

- Each child received the same battery of tests for this research study. The assessments were not selected to address the needs of your child;
- Young children may not perform to the best of their ability in unfamiliar settings, when tired or hungry, or if uncomfortable or shy around the examiner; and
- Learning and ability skills often change over the course of childhood.

A brief summary of your child’s scores on each of the assessments follows. **Please remember, the scores in this report may represent what your child was able to do in this research**

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**situation only.** The scores may not represent your child's best performance. However, we encourage you to share these results with your child's doctor, health care provider, and/or school.

### **Mullen Scales of Early Learning (Mullen)**

The Mullen measures early learning and ability in four domains of development. *Fine Motor* measures small and precise movements that use the thumb and pointer finger (such as picking up objects, holding a crayon, and turning door knobs). *Visual Reception* measures the ability to understand and make sense of images (such as brightness, color, depth, patterns, and objects). *Receptive Language* measures the ability to understand the verbal communication of another person (such as following commands and looking at a named object). *Expressive Language* measures the ability to use words and make sentences. *Early Learning Composite* is an overall score of how well your child learns.

It is important to note that learning and ability often change over the course of childhood. Therefore, the results of the Mullen should not be considered a measure of future learning ability.

- If t- scores are **70 to 80** (on all the domains except Early Learning Composite, maximum is 80) program the following: The results of the Mullen show your child has Well Above Average <insert the pertinent domain(s): *Fine Motor, Visual Reception, Receptive Language, Expressive Language*> skills.
- If t- scores are **61 to 69** (on all the domains except Early Learning Composite, maximum is 80) program the following: The results of the Mullen show your child has Above Average <insert the pertinent domain(s): *Fine Motor, Visual Reception, Receptive Language, Expressive Language*> skills.
- If t- scores are **40 to 60** (on all the domains except Early Learning Composite) program the following: The results of the Mullen suggest your child has Average <insert the pertinent domain(s): *Fine Motor, Visual Reception, Receptive Language, Expressive Language*> skills.
- If t- scores are **31 to 39** (on all the domains except Early Learning Composite) program the following: The results of the Mullen suggest your child has Below Average <insert the pertinent domain(s): *Fine Motor, Visual Reception, Receptive Language, Expressive Language*> skills.
- If t- scores are **20 to 30** (on all the domains except Early Learning Composite, maximum is 80) program the following: The results of the Mullen show your child has Well Below Average <insert the pertinent domain(s): *Fine Motor, Visual Reception, Receptive Language, Expressive Language*> skills.
- If the **Early Learning Composite** standard scores are **130 to 155** (155 is the maximum possible) program the following: The result of the Mullen Early Learning Composite suggests that, compared to other children <his/her> age, your child's overall performance was Well Above Average at the time of testing.

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- **If the Early Learning Composite standard scores are 116 to 129 (155 is the maximum possible) program the following:** The result of the Mullen Early Learning Composite suggests that, compared to other children *<his/her>* age, your child’s overall performance was Above Average at the time of testing.
- **If the Early Learning Composite standard scores are 85 to 115 program the following:** The result of the Mullen Early Learning Composite suggests that, compared to other children *<his/her>* age, your child’s overall performance was Average at the time of testing.
- **If the Early Learning Composite standard scores are 71 to 84 program the following:** The result of the Mullen Early Learning Composite suggests that, compared to other children *<his/her>* age, your child’s overall performance was Below Average at the time of testing.
- **If the Early Learning Composite standard scores are 49 to 70 program the following:** The result of the Mullen Early Learning Composite suggests that, compared to other children *<his/her>* age, your child’s overall performance was Well Below Average at the time of testing.

	<u>T-Score*</u>	<u>Meaning/Interpretation</u>
<b>Visual Reception</b>		<i>&lt; If 70 to 80 insert &gt;</i> Well Above Average <i>&lt;If 61 to 69 insert&gt;</i> Above Average <i>&lt;If 40 to 60 insert&gt;</i> Average <i>&lt;If 31 to 39 insert&gt;</i> Below Average <i>&lt;If 20 to 30 insert&gt;</i> Well Below Average
<b>Fine Motor</b>		<i>&lt; If 70 to 80 insert &gt;</i> Well Above Average <i>&lt;If 61 to 69 insert&gt;</i> Above Average <i>&lt;If 40 to 60 insert&gt;</i> Average <i>&lt;If 31 to 39 insert&gt;</i> Below Average <i>&lt;If 20 to 30 insert&gt;</i> Well Below Average
<b>Receptive Language</b>		<i>&lt; If 70 to 80 insert &gt;</i> Well Above Average <i>&lt;If 61 to 69 insert&gt;</i> Above Average <i>&lt;If 40 to 60 insert&gt;</i> Average <i>&lt;If 31 to 39 insert&gt;</i> Below Average <i>&lt;If 20 to 30 insert&gt;</i> Well Below Average
<b>Expressive Language</b>		<i>&lt; If 70 to 80 insert &gt;</i> Well Above Average <i>&lt;If 61 to 69 insert&gt;</i> Above Average <i>&lt;If 40 to 60 insert&gt;</i> Average <i>&lt;If 31 to 39 insert&gt;</i> Below Average <i>&lt;If 20 to 30 insert&gt;</i> Well Below Average
	<u>Standard Score*</u>	
<b>Early Learning Composite</b>		<i>&lt;If 130 to 155 insert&gt;</i> Well Above

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<p>Average &lt;If 116 to 129 insert&gt; Above Average &lt;If 85 to 115 insert&gt; Average &lt;If 71 to 84 insert&gt; Below Average &lt;If 49 to 70 insert&gt; Well Below Average</p>
<p>* The Mullen is reported in T-scores and Standard scores. T-scores and Standard scores tell how well your child scored compared to other children the same age.</p> <ul style="list-style-type: none"><li>➤ Mullen T-scores between 40 and 60 are in the Average range.</li><li>➤ Mullen Standard scores between 85 and 115 are in the Average range.</li></ul>

### Autism Diagnostic Observation Schedule – Second Edition (ADOS-2)

The ADOS-2 is a play-based measure used with children and adults. It is very useful in looking for social, communication, and behavioral symptoms common in persons with autism spectrum disorders. *Social-communication*, or social affect, measures how your child communicates and interacts with others. *Restricted and repetitive behaviors* measures odd or unusual behaviors.

Your child was administered Module <populate from ISAAC>.

- If the scores are **below** the cutoff indicated for the appropriate ADOS-2 module and cell, **insert the following:** Your child did not meet criteria for autism spectrum disorders as measured by the ADOS-2 at the time of testing.
- If the scores are **at or above** the cutoff indicated for the appropriate ADOS-2 module and cell, **insert the following:** Your child met criteria for autism spectrum disorders as measured by the ADOS-2 at the time of testing.
- If the Visual Reception score on the Mullen is  $\leq 15$  months (age equivalent) than the following should also be programmed to appear: Results of the ADOS-2 should be interpreted with caution based on the Visual Reception delays noted on the Mullen

### Child Behavior Checklist (CBCL/1½–5)

The CBCL/1½–5 is a checklist that you completed. It measures your child’s behavior and social abilities. The instrument is used with children 1½ to 5 years old. *Internalizing behavior* measures things such as emotional reactions, symptoms of anxiety and depression, and social withdrawal (such as your child does not like change, is nervous or very sad, or avoids eye contact). *Externalizing behavior* measures problems with attention and aggressive behavior (such as your child cannot sit still, hits others, or is easily upset).

- If t-scores are **59 or less** insert the following: The results of the CBCL/1½–5 suggest your child is not showing any <insert the pertinent domain: *Internalizing Behavior, Externalizing Behavior*> problems.
- If t-scores are **60 to 63** insert the following: The results of the CBCL/1½–5 suggest your child may have some problems with <insert the pertinent domain: *Internalizing Behavior, Externalizing Behavior*>.

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- If t-scores are **64 or above** insert the following: The results of the CBCL/1½–5 suggest your child has significant problems with *<insert the pertinent domain: Internalizing Behavior, Externalizing Behavior>*.

<u>T-Score*</u>	<u>Meaning/Interpretation</u>
<b>Internalizing Behavior</b>	<p><i>&lt;If 59 or less insert&gt;</i> No problems</p> <p><i>&lt;If 60 to 63 insert&gt;</i> Some problems</p> <p><i>&lt;If 64 or more insert&gt;</i> Significant problems</p>
<b>Externalizing Behavior</b>	<p><i>&lt;If 59 or less insert&gt;</i> No problems</p> <p><i>&lt;If 60 to 63 insert&gt;</i> Some problems</p> <p><i>&lt;If 64 or more insert&gt;</i> Significant problems</p>
<p>* The CBCL is reported as T-scores. T-scores tell how well your child scored compared to other children the same age.</p> <p>➤ CBCL T-scores less than 60 suggest no problems.</p>	

### **Vineland Adaptive Behavior Scales – Second Edition (Vineland-2)**

The Vineland-2 measures personal and social functioning in everyday situations. The Vineland-2 measures four areas of functioning. *Communication* is the use of verbal, nonverbal, and written language. *Daily Living Skills* measures how well a child can do everyday things both inside and outside of the home. *Socialization* measures social skills related to play, coping, and relationships. *Motor* measures physical activity that uses both large and small body movements (such as crawling, walking, running, picking up objects, holding a crayon). *Adaptive Behavior Composite* is the total of the domain scores just described.

- If standard scores are **130 or above** (on all the domains except maladaptive behavior) program the following: The results of the Vineland-2 suggest your child is showing Well Above Average *<insert the pertinent domain: Communication, Daily Living, Socialization, Motor>* skills.
- If standard scores are **115 to 129** (on all the domains except maladaptive behavior) program the following: The results of the Vineland-2 suggest your child is showing Above Average *<insert the pertinent domain: Communication, Daily Living, Socialization, Motor>* skills.
- If standard scores are **86 to 114** (on all the domains except maladaptive behavior) program the following: The results of the Vineland-2 suggest your child displays Average *<insert the pertinent domain: Communication, Daily Living, Socialization, Motor>* skills.
- If standard scores are **71 to 85** (on all the domains except maladaptive behavior) program the following: The results of the Vineland-2 suggest your child is showing Below Average *<insert the pertinent domain: Communication, Daily Living, Socialization, Motor>* skills.

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- **If standard scores are 20 to 70 (on all the domains except maladaptive behavior) program the following:** The results of the Vineland-2 suggest your child is showing Well Below Average <insert the pertinent domain: *Communication, Daily Living, Socialization, Motor*> skills.
- **If the Adaptive Behavior Composite standard scores are 130 or above program the following:** The result of the Vineland-2 Adaptive Behavior Composite suggests that, compared to other children <his/her> age, your child’s overall performance was Well Above Average at the time of testing.
- **If the Adaptive Behavior Composite standard scores are 115 to 129 (155 is the maximum possible) program the following:** The result of the Vineland-2 Adaptive Behavior Composite suggests that, compared to other children <his/her> age, your child’s overall performance was Above Average at the time of testing
- **If the Adaptive Behavior Composite standard scores are 86 to 114 program the following:** The result of the Vineland-2 Adaptive Behavior Composite suggests that, compared to other children <his/her> age, your child’s overall performance was Average at the time of testing.
- **If the Adaptive Behavior Composite standard scores are 71 to 85 program the following:** The result of the Vineland-2 Adaptive Behavior Composite suggests that, compared to other children <his/her> age, your child’s overall performance was Below Average at the time of testing.
- **If the Adaptive Behavior Composite standard scores are 20 to 70 program the following:** The result of the Vineland-2 Adaptive Behavior Composite suggests that, compared to other children <his/her> age, your child’s overall performance was Well Below Average at the time of testing.

	<u>Standard Score*</u>	<u>Meaning/Interpretation</u>
<b>Communication</b>		<If 130 to 160 insert> Well Above Average <If 115 to 129 insert> Above Average <If 86 to 114 insert> Average <If 71 to 85 insert> Below Average <If 20 to 70 insert> Well Below Average
<b>Daily Living Skills</b>		<If 130 to 160 insert> Well Above Average <If 115 to 129 insert> Above Average <If 86 to 114 insert> Average <If 71 to 85 insert> Below Average <If 20 to 70 insert> Well Below Average
<b>Socialization</b>		<If 130 to 160 insert> Well Above Average <If 115 to 129 insert> Above Average <If 86 to 114 insert> Average <If 71 to 85 insert> Below Average <If 20 to 70 insert> Well Below Average

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<b>Motor</b>	<p>&lt;If 130 to 160 insert&gt; Well Above Average                  &lt;If 115 to 129 insert&gt; Above Average                  &lt;If 86 to 114 insert&gt; Average                  &lt;If 71 to 85 insert&gt; Below Average                  &lt;If 20 to 70 insert&gt; Well Below Average</p>
<b>Adaptive Behavior Composite</b>	<p>&lt;If 130 to 160 insert&gt; Well Above Average                  &lt;If 115 to 129 insert&gt; Above Average                  &lt;If 86 to 114 insert&gt; Average                  &lt;If 71 to 85 insert&gt; Below Average                  &lt;If 20 to 70 insert&gt; Well Below Average</p>
<p>* The Vineland is reported as Standard scores. Standard scores tell how well your child scored compared to other children the same age.</p> <ul style="list-style-type: none"> <li>➤ Vineland Standard scores between 86 and 114 are in the Average range.</li> </ul>	

**Autism Diagnostic Interview, Revised (ADI-R)**

The ADI-R is a parent interview used to distinguish autism from other developmental disorders. Four domains are measured. *Communication* measures the use of verbal and nonverbal language (such as talking or gestures). *Reciprocal Social Interaction* measures how well your child interacts with others. *Restricted, Repetitive and Stereotyped Patterns of Behavior* measures odd or unusual behaviors. *Abnormality of Development* measures delayed development before 36 months of age.

- If the scores are **below** the domain cutoffs (in all, 1, or 2 areas) indicated above (Abnormality of Development is not included here) insert the following: Your child did not meet criteria for autism spectrum disorders as measured by the ADI-R at the time of testing.
- If the scores are **at or above** the domain cutoffs in **ALL 3 domains** indicated above, insert the following: Your child met criteria for autism spectrum disorders as measured by the ADI-R at the time of testing.
- If the Visual Reception score on the Mullen is <24 months (age equivalent) than the following should also be programmed to appear: Results of the ADI-R should be interpreted with caution based on Visual Reception delays noted on the Mullen.

**RE: Abnormality of Development**

- Regarding Abnormality of Development program the following if the score is <1: Your child has not shown any problems in development as measured by the Abnormality of Development domain.
- Regarding Abnormality of Development program the following if the score is ≥1: Your child has shown some problems in development as measured by the Abnormality of Development domain.

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Thank you for taking part in the Study to Explore Early Development. It is important to keep in mind the testing we did with your child was done for research purposes. We did not do these tests to give you a clinical diagnosis. No single developmental test can detect autism spectrum disorders. If you have any questions about this study or letter, please do not hesitate to call. If you have any concerns with your child's development we encourage you to share this letter with your child's doctor, healthcare provider, or school.

Sincerely,