The Sensory Profile: A Discriminant Analysis of Children With and Without Disabilities

Julie Ermer, Winnie Dunn

Key Words: attention deficit disorder with hyperactivity • autism • evaluation process, occupational therapy

Objectives. The purpose of this study was to determine which factors on the Sensory Profile, a measure of children's responses to commonly occurring sensory experiences, best discriminate among children with autism or pervasive developmental disorder (PDD), children with attention deficit hyperactivity disorder (ADHD), and children without disabilities.

Method. Data for three groups of children 3 to 15 years of age were used: 38 children with autism or PDD, 61 with ADHD, and 1,075 without disabilities. The researchers conducted a discriminate analysis on the three groups, using group membership as the dependent variable and the nine factors of the Sensory Profile as independent variables.

Results. The analysis yielded two discriminant functions: one that differentiated children with disabilities from children without disabilities and another that differentiated the two groups of children with disabilities from each other. Nearly 90% of the cases were correctly classified with these two functions.

Conclusion. The Sensory Profile is useful for discriminating certain groups of children with disabilities. Children with disabilities are accurately classified into disability categories with the factors described by previous authors. This suggests that patterns of behavior associated with certain developmental disorders are reflected in populations of children without disabilities. It may be the frequency or intensity of certain behaviors that differentiate the groups.

Occupational therapists offer a unique perspective in the delivery of service to children with disabilities by considering the sensory aspects of behavior. From a sensory integrative perspective, an underlying facet of many of the behaviors observed in children with disabilities is to either generate or avoid sensory stimulation. Determining a child's threshold for tolerating sensory stimuli helps families and other professionals to understand a child's reaction to experiences easily tolerated by peers. Determining sensory preferences may also guide therapists in their choice of activities. A contextually relevant evaluation of the impact of sensory experiences on children's ability to function within their environment (i.e., home, school, community) is an important part of an occupational therapy assessment. Recent studies have incorporated the use of the Sensory Profile (Dunn & Westman, 1995) in the diagnostic evaluation of sensory behaviors in children with and without disabilities (Bennett & Dunn, in press; Dunn, 1994; Dunn & Brown, 1997; Kientz & Dunn, 1997) as a...
potential method for including sensory data in the diagnostic process.

The Sensory Profile was developed by Dunn and colleagues to assess the responses of both children with disabilities and children without disabilities to a variety of commonly occurring sensory experiences. Parents report the frequency their child responds to 125 commonly occurring experiences. Items compiled from the literature fall into eight categories: Auditory, Visual, Activity Level, Taste/Smell, Body Position, Movement, Touch, and Emotional/Social.

From a national sample of children without disabilities, Dunn and Brown (1997) analyzed Sensory Profile scores through an exploratory factor analysis. Their findings were consistent with the hypothesis that the resulting factors would reflect homogeneity of responses (either high or low threshold responses) to a variety of stimuli across sensory categories. The nine resulting factors in children without disabilities are listed in the Appendix.

Of particular interest in the present study were the factors containing items that appeared consistent with the diagnostic criteria for groups of children with disabilities. Certain patterns of behavior, as represented by the items in the factor groupings in Dunn and Brown’s (1997) large sample of children without disabilities, closely resembled patterns of behavior accepted as symptomatic for certain groups of children with disabilities. For example, Factor 4 (Oral Sensory Sensitivity) described the clinical signs associated with autism and pervasive developmental disorder (PDD), whereas Factor 5 (Inattention/Distractibility) appeared to contain items consistent with the diagnostic criteria for attention deficit hyperactivity disorder (ADHD).

Factor 4 contains nine items that describe sensitivity to particular tastes, textures, and temperatures of food. Foods that are typically part of a child’s diet might be aversive to children who have a strong preference for or a strong aversion to smells or who routinely smell nonfood items. Professionals have observed these behaviors in children with autism or PDD (Ayers & Tickle, 1980; Kientz & Dunn, 1997). Although the quality or frequency of sensory responses is not included in the diagnostic criteria for autism or PDD (American Psychiatric Association, 1994), abnormal responses to sensory experiences in children with autism or PDD have been studied and are accepted as clinically significant (Baranek & Berkson, 1994; Bauer, 1995; DiLalla & Rogers, 1994; Ornitz, 1989). Ayres and Tickle (1980) found that the 10 children with autism that they studied, as a whole, were hyporeactive to particular smells and tastes but were hyperreactive to touch (i.e., textures). Kientz and Dunn (1997) found a 25% difference between children with autism or PDD and children without disabilities on the item “shows strong preference for certain tastes” and a 38% difference on the item “picky eater, especially regarding textures” from the Sensory Profile. It is hypothesized that Factor 4 may discriminate children with autism or PDD from children with ADHD and children without disabilities.

Factor 5 contains seven items describing inattention and distractibility. Although these behaviors are seen in a variety of disability categories, the disability best represented by these characteristics is ADHD. According to the most recent diagnostic criteria for ADHD, inattention, hyperactivity, and impulsivity are hallmark symptoms of the disorder (APA, 1994). Distraction by extraneous stimuli is included in the diagnostic criteria for ADHD. Many researchers have studied the ability of children with ADHD to process and respond to sensory information (Barkley, Grodzinski, & DuPaul, 1992; Carter, Kremer, Chaderjian, Northcutt, & Wolfe, 1995; Leung & Connolly, 1994; Schachar, Tannock, Marriott, & Logan, 1995). Ayres (1979) theorized that children with ADHD have decreased sensory processing abilities because they are easily overstimulated and react to stimuli that children without disabilities commonly ignore or “tune out” (e.g., the dog barking, a light flashing). Because these children constantly react to extraneous stimuli, they appear distracted and overactive. When Bennett and Dunn (in press) used the Sensory Profile to compare the sensory behaviors of children with ADHD to those of children without disabilities, they found significant differences between the two groups on 113 of the 125 items. They found a clinically significant difference on 42 items (i.e., a raw score difference of one point or more on the five-point Likert scale), 30 of which fell exclusively within Factors 1 (Sensory Seeking), 2 (Emotionally Reactive), and 5 (Inattention/Distractibility).

In sum, the Sensory Profile appears to contain items that capture the heterogeneity of the population of children without disabilities. Through a factor analysis, patterns of behavior (i.e., the factor groupings) emerged that seemed to indicate high or low thresholds for various types of sensory experiences (Dunn & Brown, 1997). Because certain factors contain items that appear consistent with the diagnostic criteria for disability categories such as ADHD or autism and PDD, perhaps these factors or combinations of factors will discriminate children without disabilities from children with disabilities. The purpose of this study was to determine the Sensory Profile factors that best discriminate children with autism or PDD, children with ADHD, and children without disabilities.

Method
Sample
Parents of children with autism or PDD, children with
ADHD, or children without disabilities provided the data for this study. The data were accessed from a large database compiled from previous studies and added to by the first author.

**Children with autism or PDD.** This group consisted of a convenience sample of 38 children 3 to 13 years of age. This group came from two sources: (a) children diagnosed by independent physicians or by state diagnostic centers who were receiving services through the Northwest Missouri Autism Consortium (Kientz & Dunn, 1997) and (b) children evaluated and diagnosed by a transdisciplinary team at the Child Development Unit at the University of Kansas Medical Center.

**Children with ADHD.** This group consisted of a convenience sample of 61 children 3 to 15 years of age collected by Bennett and Dunn (in press). These children were diagnosed at the University of Kansas Children's Center, ADHD Clinic. The Sensory Profile was administered after the diagnosis was established and after intervention had been initiated.

**Children without disabilities.** This sample was taken from data collected for a national study (Dunn & Westman, 1997). The group consisted of 1,075 children 3 to 10 years of age who were not receiving any special education services or taking medications regularly (e.g., for hyperactivity; seizures).

**Instrument**

The Sensory Profile (Dunn & Westman, 1995) is a 125-item assessment on which parents report the frequency their child responds to items in eight categories: Auditory, Visual, Taste/Smell, Movement, Body Position, Touch, Activity Level, and Emotional/Social. This frequency is determined from a Likert scale where

1. always: when the item occurred every time
2. frequently, or at least 75% of the time
3. occasionally, or 50% of the time
4. seldom, or 25% of the time
5. never: when the item never occurred

Although the sample sizes varied dramatically, each approximated a normal distribution and, therefore, did not violate the assumptions of normal distribution. However, the assumption of homogeneity of variance was violated. Because the variance was smallest in the largest group (children without disabilities), the results of this analysis must be interpreted conservatively.

**Procedure**

Parents provided informed consent before filling out the Sensory Profile. Sensory Profile forms completed during scheduled clinic visits required signed consent forms. Sensory Profile forms obtained through mailings contained a consent form and stated that returning the forms to the researcher indicated consent to participate. The researcher was available by phone to answer parents' questions, and, in some instances, the researcher was present while the forms were being completed. Because the majority of data used in this study was gathered by other researchers as part of a large database, see references cited for details of procedures (Bennett & Dunn, in press; Dunn & Westman, 1997; Kientz & Dunn, 1997).

**Data Analysis**

To identify the factors on the Sensory Profile that best discriminate among children with autism or PDD, children with ADHD, and children without disabilities, a three-group, direct-entry discriminant analysis was conducted. Discriminant analysis is a statistical procedure useful for classifying cases into one or more groups on the basis of various characteristics. It offers information as to which characteristics discriminate best between groups and analyzes the precision of these characteristics for group classification (Portney & Watkins, 1993; Stevens, 1992).

In this study, the dependent variable was diagnostic group. The nine factors obtained in Dunn and Brown's (1997) factor analysis were treated as subscales, and the scores calculated for each factor were the independent variables (see Appendix). We calculated factor scores for each child by multiplying the item's factor loading by the child's score on that item and then summing these products to produce a single score. Because this analysis excluded children who had missing data, we inserted group means for each item that contained missing data in the groups of children with disabilities in order to increase the number of cases available for the analysis. A total of 432 (8.3%) group item means were inserted, 123 (1.6%) items for the children with ADHD and 319 (6.7%) items for the children with autism or PDD. Missing data points were scattered throughout the samples. Group means were not inserted in the group of children without disabilities, resulting in 671 children from this group available for the analysis. The data were analyzed with the Statistical Package for the Social Sciences (SPSS-X) version 6.0 (Green, Salkind, & Akey, 1997).

**Results**

Seven hundred sixty-nine cases were analyzed in the discriminant analysis. Although the sample sizes varied dramatically, each approximated a normal distribution and, therefore, did not violate the assumptions of normal distribution. However, the assumption of homogeneity of variance was violated. Because the variance was smallest in the largest group (children without disabilities), the results of this analysis must be interpreted conservatively.

The discriminant analysis yielded two discriminant functions. A discriminant function is a combination of variables (i.e., factors) that best discriminates groups. The first discriminant function accounts for the most variability between groups. The second accounts for the next highest amount of variability. In this study, a factor was considered to be a good discriminator if its discriminant
The hypothesis put forth by Dunn and Brown (1997) suggested that children with disabilities would exhibit a unique profile of behaviors when compared to their nondisabled peers. The first discriminant function discriminated children with autism or PDD from children with ADHD. Factors 1 (Sensory Seeking), 4 (Oral Sensory Sensitivity), and 9 (Fine Motor/Perceptual) were the significant discriminators. The discriminant analysis bases its classification on the combination of the first and second discriminant functions. The combination of high and low incidence of behaviors on the factors that performed as the best discriminators are listed in Table 2. On the basis of these two functions, 89.08% of the cases were correctly classified into one of the three groups. The children without disabilities were slightly more likely to be correctly classified with these two functions than either of the two groups of children with disabilities (see Table 3).

The scatterplot presented in Figure 1 illustrates the relationship of the three groups to each other, using the two discriminant functions as variables. The group centroid of children without disabilities is very close to neutral, with very small positive values of discriminant functions 1 (horizontal axis) and 2 (vertical axis). Table 2 shows that children without disabilities have a relatively high incidence of behaviors in Factor 1 and a relatively low incidence of behaviors in Factors 4, 5, and 9. A low score indicates a high level of behaviors as 1 = always and 5 = never.

Children with autism or PDD have a group centroid located in the negative region on discriminant functions 1 and 2 (see Figure 1). The combinations of functions in Table 2, illustrates a high incidence of behaviors in Factors 4, 5, and 9 and a low incidence of behaviors in Factor 1 for this group. In contrast, the group centroid for the children with ADHD has a negative value for discriminant function 1 and a positive value for discriminant function 2. This indicates a high incidence of behaviors in Factors 1 and 5 and low incidence of behaviors in Factors 4 and 9 (see Table 2).

Discussion

**Discrimination of Groups**

The hypothesis put forth by Dunn and Brown (1997) suggested that the Sensory Profile factors found in children without disabilities would discriminate children with ADHD and children with disabilities when compared to their nondisabled peers. Of these nine factors, Factors 1 (Sensory Seeking), 4 (Oral Sensory Sensitivity), 5 (Inattention/Distractibility), and 9 (Fine Motor/Perceptual) were the best discriminators. Combinations of high or low scores on these factors created a pattern or profile for children without disabilities, children with ADHD, and children with autism or PDD.

**Profile of children without disabilities.** Sensory processing is a well-established component of many theories of learning and development (Ayres, 1979; Piaget, 1952; Reilly, 1974). Children seek information about their world through the senses and use this information to form adaptive responses. The findings of this study support these theories in that children without disabilities were discriminated best by a high level of behaviors in Factor 1. In addition to a high incidence of behaviors in Factor 1, the profile of a child without disabilities also includes a low incidence of behaviors in Factors 4, 5, and 9. So, despite their level of activity, children without disabilities, as a group, do not show patterns of inattention, distractibility, or oral sensory sensitivity when compared with their peers who have disabilities. Their scores on the Sensory Profile suggest that they do not, as a group, experience the same difficulties with fine motor and academic (perceptual) tasks. Their overall pattern of scores suggest that they adapt appropriately to sensory input.

**Profile of children with ADHD.** Children with ADHD are known to exhibit many of the sensory seeking behaviors seen in children without disabilities, but with greater frequency or intensity (Bennett & Dunn, in press). In addition to sensory seeking behaviors, inattention and distractibility tend to impair a child's ability to function across environments (APA, 1994). This study supports these findings in that children with ADHD were best discriminated by a high incidence of behaviors in Factors 1 and 5 and a low incidence of behaviors in Factors 4 and 9.

Table 1

<table>
<thead>
<tr>
<th>Standardized Canonical Discriminant Function Coefficients</th>
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<tbody>
<tr>
<td>Factor Name</td>
</tr>
<tr>
<td>Factor 1: Sensory Seeking</td>
</tr>
<tr>
<td>Factor 2: Emotional Reactivity</td>
</tr>
<tr>
<td>Factor 3: Low Endurance/Tone</td>
</tr>
<tr>
<td>Factor 4: Oral Sensory Sensitivity</td>
</tr>
<tr>
<td>Factor 5: Inattention/Distractibility</td>
</tr>
<tr>
<td>Factor 6: Poor Registration</td>
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<tr>
<td>Factor 7: Sensory Sensitivity</td>
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<tr>
<td>Factor 8: Sedentary</td>
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<tr>
<td>Factor 9: Fine Motor/Perceptual</td>
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</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>Classification Based on Discriminant Functions 1 and 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>No disabilities</td>
</tr>
<tr>
<td>ADHD</td>
</tr>
<tr>
<td>Autism or PDD</td>
</tr>
</tbody>
</table>

**Note:** + = low score on this factor (high incidence of behaviors within the factor), 0 = high score on this factor (low incidence of behaviors within this factor). ADHD = attention deficit hyperactivity disorder; PDD = pervasive developmental disorder.
Table 3

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of Cases</th>
<th>No Disabilities</th>
<th>ADHD</th>
<th>Autism or PDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>No disabilities</td>
<td>671</td>
<td>609 (90.8%)</td>
<td>23 (3.4)</td>
<td>39 (5.8)</td>
</tr>
<tr>
<td>ADHD</td>
<td>60</td>
<td>5 (8.3)</td>
<td>46 (76.7)</td>
<td>9 (15.0)</td>
</tr>
<tr>
<td>Autism or PDD</td>
<td>38</td>
<td>4 (10.5)</td>
<td>4 (10.5)</td>
<td>30 (78.9)</td>
</tr>
</tbody>
</table>

Note. Percent of "grouped" cases correctly classified = 89.08%. ADHD = attention deficit hyperactivity disorder; PDD = pervasive developmental disorder.

In this analysis, children with ADHD differed from children without disabilities in inattention and distractibility. In their analysis of children with ADHD and children without disabilities, Bennett and Dunn (in press) found that differences between these groups were on items within Factors 1, 2 (Emotionally Reactive), and 5. The means for children with ADHD differed from children without disabilities on certain items by more than one point. This may suggest that although the pattern of sensory seeking behaviors (Factor 1) in children with ADHD may resemble that of children without disabilities, the incidence or frequency of the behaviors is markedly higher.

Profile of children with autism or PDD. Researchers in the field of occupational therapy have addressed the atypical and often bizarre responses of children with autism or PDD to sensory experiences (Ayres & Tickle, 1980). Repetitive stereotyped behaviors, self-stimulation, or strong aversive responses to commonly occurring sensory experiences create functional impairments across environments. In this study, children with autism or PDD differed most from the other two groups by a relatively low incidence of behaviors in Factor 1 and a high incidence of behaviors in Factors 4, 5, and 9. In essence, the profile of children with autism was opposite that of a child without disabilities.

Practice Implications

Evaluation. Information regarding the way a child responds to sensory events within the home and community environments is important information that should be made available to the diagnostic team. Children with behavioral disorders such as autism or PDD and ADHD process sensory information differently than children without disabilities (Ayres, 1979; Bennett & Dunn, in press; Kientz & Dunn, 1997). Because the Sensory Profile is sensitive to these differences and can discriminate between these two disability groups, this measure may be useful in the evaluation process to screen for autism, PDD, or ADHD. Additionally, because the Sensory Profile relies on parental report of observed behaviors and the frequency or intensity of behaviors within the child's natural environment, its use encourages parental involvement in the evaluation process. Parents are often uniquely intuitive regarding their child's behavior and are able to highlight behaviors not readily observable in traditional testing arenas.

Intervention. Because the Sensory Profile allows par-
ents to highlight the behaviors interfering with their child's functioning, the measure can be useful to therapists in planning contextually relevant interventions. The assessment's data can inform therapists about which sensory systems might be affected and which patterns of behavior (i.e., factors) might be more indicative of the child's performance. Designing an environment that includes the child's preferred stimuli and that controls the stimuli the child perceives as aversive is a key intervention strategy.

Limitations and Directions for Future Research

Several limitations were inherent in this study. The use of convenience samples for the two groups of children with disabilities warrants further studies for regional differences. The vast discrepancy in sample sizes (i.e., relatively small samples of children with disabilities) was noted. Larger samples of children with disabilities would further validate the findings. Because the assumption of homogeneity of variance was violated, results of the discriminant analysis should be conservatively interpreted. Finally, because only two disability groups were chosen for this study, no predictions can be made about how other disability groups might be discriminated and classified. Further research using other samples of children with disabilities would provide additional information regarding the validity for the use of the Sensory Profile in other groups of children with disabilities.

Conclusion

Occupational therapists bring to the interdisciplinary team expertise in sensory processing and its impact on performance in daily life. Although sensory processing problems have not explicitly been included in diagnostic criteria for children, this study provided evidence that some performance difficulties may be associated with poor sensory processing and may be specific to particular disabilities. As our knowledge of how disabilities affect children's performance increases, so does our ability to offer useful information to families regarding status, prognosis, and options for intervention. Populations of children with disabilities exhibit patterns of behavior that are distinguishable from children without disabilities. Identifying how these patterns resemble or differ from those of children who are developing typically leads to more accurate assessment and intervention planning options.

The results of this study indicate that the Sensory Profile contains items and factors that not only have the ability to discriminate children with disabilities from children without disabilities, but also to discriminate groups of children with disabilities from each other. The factor structure profiled in children without disabilities indicates a continuum of sensory responses and behaviors that discriminates groups of children from each other, suggesting that frequency, intensity, or the patterns in which the behaviors appear may be an important feature of diagnosis.

The Sensory Profile was originally created as a tool to assess the responses of children to naturally occurring sensory experiences in their everyday environments (i.e., home, school, community). Because existing tools had not considered naturally occurring experiences in context or were not validated for use with groups of children with disabilities, the results of this study support the Sensory Profile as a useful tool for certain groups of children with disabilities.

Acknowledgments

We thank Catana Brown, MA, OTR, for assistance with the statistical analysis. This study was completed in partial fulfillment of the first author's requirements for a master of science degree in occupational therapy.

Appendix

Factor Analysis Item List (Dunn & Brown, 1997)

<table>
<thead>
<tr>
<th>Factor 1: Sensory Seeking</th>
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<tbody>
<tr>
<td>Movement 10</td>
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<tr>
<td>Movement 11</td>
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<tr>
<td>Movement 9</td>
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<tr>
<td>Body Position 1</td>
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<tr>
<td>Movement 5</td>
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<tr>
<td>Movement 14</td>
</tr>
<tr>
<td>Body Position 7</td>
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<tr>
<td>Movement 17</td>
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<tr>
<td>Movement 18</td>
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<tr>
<td>Touch 21</td>
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<tr>
<td>Activity Level 2</td>
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<tr>
<td>Touch 18</td>
</tr>
<tr>
<td>Auditory 3</td>
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<tr>
<td>Emotional/Social 5</td>
</tr>
<tr>
<td>Activity Level 1</td>
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<tr>
<td>Body Position 2</td>
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<tr>
<td>Touch 23</td>
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</table>

<table>
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<tr>
<th>Factor 2: Emotionally Reactive</th>
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<tbody>
<tr>
<td>Emotional/Social 11</td>
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<tr>
<td>Emotional/Social 10</td>
</tr>
<tr>
<td>Emotional/Social 20</td>
</tr>
<tr>
<td>Emotional/Social 21</td>
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<tr>
<td>Emotional/Social 15</td>
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<tr>
<td>Emotional/Social 8</td>
</tr>
<tr>
<td>Emotional/Social 6</td>
</tr>
<tr>
<td>Emotional/Social 2</td>
</tr>
</tbody>
</table>
Emotional/Social 12 Expresses feeling like a failure
Emotional/Social 13 Is stubborn or uncooperative
Emotional/Social 7 Has definite fears
Emotional/Social 4 Has trouble "growing up"
Emotional/Social 14 Has temper tantrums
Emotional/Social 3 Needs more protection from life other than
children
Emotional/Social 24 Has difficulty making friends
Emotional/Social 23 Overly serious

Factor 3: Low Endurance/Tone
Body Position 3 Seems to have weak muscles
Body Position 4 Tires easily, especially when standing or
holding a particular body position
Body Position 9 Has a weak grasp
Body Position 5 Locks joints for stability
Body Position 10 Can’t lift heavy objects
Movement 20 Poor endurance/tires easily
Body Position 11 Props to support self
Body Position 8 Moves stiffly
Movement 21 Appears lethargic

Factor 4: Oral Sensory Sensitivity
Taste/Smell 6 Shows preference for certain tastes
Taste/Smell 5 Will only eat certain tastes
Taste/Smell 4 Shows a strong preference for certain smells
Taste/Smell 2 Avoids certain tastes/smells that are
typically part of children’s diets
Touch 12 Picky eater, especially regarding textures
Taste/Smell 8 Seeks certain foods
Taste/Smell 9 Seeks out certain tastes/smells
Touch 6 Limits self to particular food
Taste/Smell 3 Routinely smells nonfood objects

Factor 5: Inattention/Distractibility
Auditory 2 Is distracted or has trouble functioning if
there is a lot of noise around
Activity Level 6 Difficulty paying attention
Auditory 4 Appears not to hear what you say
Auditory 6 Can’t work with background noise
Auditory 7 Has trouble completing tasks when the
radio is on
Auditory 8 Doesn’t respond when name is called
Visual 1 Looks away from task to notice all actions
in the room

Factor 6: Poor Registration
Emotional/Social 18 Doesn’t express emotions
Emotional/Social 19 Doesn’t perceive body language or facial
expressions
Emotional/Social 22 Doesn’t have a sense of humor
Touch 22 Doesn’t seem to notice when someone
touches arm or back
Visual 18 Doesn’t notice when people come into
the room
Taste/Smell 10 Does not seem to smell strong odors
Touch 20 Decreased awareness of pain and
temperature
Touch 9 Avoids going barefoot, especially in sand
or grass

Factor 7: Sensory Sensitivity
Movement 1 Becomes anxious or distressed when feet
leave ground
Movement 2 Feats falling or heights
Movement 3 Dislikes activities where head is upside
down or roughhousing
Movement 4 Avoids climbing, jumping, humpy or
uneven ground

Factor 8: Sedentary
Movement 19 Prefers sedentary activities
Movement 6 Seeks sedentary play options
Activity Level 3 Spends most of the day in sedentary play
Activity Level 4 Prefers quiet, sedentary play

Factor 9: Fine Motor/Perceptual
Visual 14 Has trouble staying between the lines when
coloring or when writing
Visual 7 Writing is illegible
Visual 8 Has difficulty putting puzzles together
Emotional/Social 14 Has temper tantrums

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