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Children with Asperger's Syndrome: Characteristics/Learning Styles and Intervention Strategies

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Introduction

Asperger's Syndrome was named for a Viennese psychiatrist, Hans Asperger. In 1944 Asperger published a paper in German describing a consistent pattern of abilities and behaviors that occurred primarily in boys. In the early 1980s Asperger's paper was translated into English, which resulted in international recognition for his work in this area (6).

In the 1990s, specific diagnostic criteria for Asperger's Syndrome were included in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV, 1994) as well as the International Classification of Diseases, 10th edition (ICD10) (3) & (15). In general, DSM-IV and ICD10 base their diagnostic criteria for Asperger's Syndrome on the following:

-  Impairment of social interaction
-  Impairment of social communication
-  Impairment of social imagination, flexible thinking and imaginative play
-  Absence of a significant delay in cognitive development
-  Absence of general delay in language development (in Wisconsin, the child may still have an impairment under the state eligibility criteria for speech & language)

Recent research establishes the prevalence of Asperger's Syndrome as approximately 1 in 300, affecting boys to girls with a ratio of 10:1 (6). Children with clinical (medical) diagnosis of Asperger's Syndrome and who have been identified by schools as "children with disability" are typically found by the IEP Team conducting the evaluation to have an impairment in such areas as Autism, Speech/Language, or Other Health Impaired. Depending on the unique characteristics of the child, other impairment area listed under state law for special education may also be considered and used. This link will connect to the Wisconsin Department of Public Instruction for additional information on these areas: <http://www.dpi.state.wi.us/dpi/dlsea/een/program.html>.

The general features and characteristics exhibited by children diagnosed with Asperger's Syndrome are similar to the general features and characteristics exhibited by children who have been clinically diagnosed with Autism and are described as having "high functioning autism". For educational purposes, the remainder of this paper focuses on the child with Asperger's Syndrome who has been identified by the IEP Team as being a child with a disability. Much of the following information is



also relevant for consideration in working with children identified as having autism and who are described as having "high functioning autism".

Training

Each person who comes in contact with a child diagnosed with Asperger's Syndrome (either school staff or peers) should receive training on the unique characteristics and educational needs of such children. Due to confidentiality issues this should always be discussed first with the parents of the child with Asperger's Syndrome. Their written consent should be obtained prior to providing peer training.

Educational Staff Training should include the following two components:

 **General training of the entire school staff:** Prior to working with children with Asperger's Syndrome, it is critical to understand the unique features and characteristics associated with this developmental disability. Staff should be informed that children with Asperger's Syndrome have a developmental disability, which causes them to respond and behave in a way, which is different from other students. Most importantly, the responses/behaviors exhibited by these children should not be misinterpreted as **purposeful** and **manipulative behaviors** (4).

 **Child specific training for educational staff who will be working directly with the child:** Educational staff who will be working directly with a child with Asperger's Syndrome should understand his **individual** strengths and needs **prior** to actually working with the child. A team of persons familiar with the child and his disability should provide this training. The team may include previous teacher(s), speech/language pathologist, occupational therapist, teacher aide and most importantly, the child's parents.

Peer training:

 The peers/classmates of the child with Asperger's Syndrome should be told about the unique learning and behavioral mannerisms associated with Asperger's Syndrome. It is important to note that parent permission must always be given prior to such peers' training. A successful protocol for training peers at the kindergarten to approximately second grade level was developed by Division TEACCH and is available at their web site <http://www.unc.edu/depts/teacch/>. Another peer training protocol designed for children between the ages of 8-18 is Carol Gray's "Sixth Sense" (10).

Characteristics and Learning Styles: General

The following characteristics and learning styles associated with Asperger's Syndrome are important to consider, particularly their impact on learning, and in planning an appropriate educational program for the child (7). Children with Asperger's Syndrome exhibit difficulty in appropriately processing in-coming information. Their brain's ability to take in, store, and use information is significantly different than neuro-typically developing children. This results in a somewhat unusual perspective of the world (7). Therefore teaching strategies for children with Asperger's Syndrome will be different than strategies used for neuro-typically developing children.

Children with Asperger's Syndrome typically exhibit strengths in their visual processing skills, with



significant weaknesses in their ability to process information auditorily. **Therefore use of visual methods of teaching, as well as visual support strategies, should always be incorporated to help the child with Asperger's Syndrome better understand his environment.**

The remainder of this article describes ten primary characteristics of children with Asperger's Syndrome and intervention strategies for each.

Social Relation Difficulties

Characteristics: Children with Asperger's Syndrome tend to exhibit a **lack** of effectiveness in social interactions rather than a lack of social interactions. They tend to have difficulty knowing how to 'make connections' socially (4). Social situations are easily misread by children with Asperger's Syndrome and as a result, their interactions and responses are often interpreted by others as being odd (4).

Children with Asperger's Syndrome can exhibit low self-esteem and possible depression, particularly when they reach adolescence, due to their painful awareness of the social differences that exist between them and their peers (12). They have a desire to "fit in" socially, yet have no idea how to do this. Children with Asperger's syndrome can be significantly impacted by the following characteristics of social relations:

 **Social Reciprocity:** Children with Asperger's Syndrome can exhibit an imbalance in reciprocal social relations (i.e., the "give and take" in social relationships), which can be exhibited in several ways:

 The child can exhibit the need to take control and direct social situations according to his own limited social rules and social understanding. Although the child may be able to initiate interactions with others, these interactions are typically considered to be "on his own terms". These interactions appear to be very egocentric in that they relate primarily to the child's specific wants, needs, desires and interests and do not constitute a truly interactive, give-and-take social relation with another person.

 The child can appear very quiet, withdrawn and even unresponsive. He exhibits limited social drive. It can be extremely difficult for the social participant to engage the child in a social relation. (e.g., A child with Asperger's Syndrome was having a birthday party at her home. When the other children arrived, she stayed in the living room with them for a short while. She then said, "good-night", and stayed in her room for the rest of the party.)

 **Recognizing and interpreting various social situations:** Typically developing children are able to recognize and interpret the social nuances of various social situations without being specifically taught. Their intact processing systems allow for this to occur. However children with Asperger's Syndrome typically have great difficulty recognizing, understanding and thus applying appropriate social skills to various social situations. Their unique processing/learning systems do not readily allow for accurate recognition and interpretation of this seemingly abstract information (14).

 **Social rules:** Children with Asperger's Syndrome typically do not learn social rules. either



by observing others or through frequent verbal reminders. These children do not appear to be **intentionally** ignoring and/or breaking these rules. Instead, they have a difficult time accurately perceiving social environments and thus, they do not understand that a particular social rule is to be applied in a specific social context.

Example: A teacher frequently reminds a child with Asperger's Syndrome, prior to going out for recess, that he cannot push other children. The child repeats this rule prior to going out to recess. However, when the child goes onto the playground at recess, he pushes several children.

 **Friendship skills:** Children with Asperger's Syndrome tend to exhibit limited knowledge of the concept of friendship

Example: When a teenager with Asperger's Syndrome was asked if he had any friends he responded that friendship was an area where he had some problems. He was able to name two peers whom he considered "friends"; however, he did not know the last name of one of the students. He proceeded to physically describe the student to see if the listener knew the student's last name. When asked why these students were his friends, he said because he saw them in the hallway during passing period, and that he also saw one of the students at a weekly church youth group meeting. When asked if he and his "friends" went to each others' houses, talked on the phone, etc., the teen with Asperger's Syndrome said no, that he just **saw** them at different places).

Children with Asperger's Syndrome also do not appear to attend to or respond to peer pressure. They may have definite preferences for clothing due to comfort level, in relation to sensory sensitivities without regard or concern for popular styles as worn by peers.

Example: Some children prefer no ridges on the collar, no buttons down the front of a shirt, no blue jeans - only elastic waist pants, no long/short sleeves or long/short pants, etc.

 **Understanding and expressing varied emotional states:** Children with Asperger's Syndrome may have difficulty identifying (labeling and understanding) varied emotional states, both in themselves and in others. In addition, regulation of emotional states can be



Example: When experiencing great distress, a child with Asperger's Syndrome continually asks others for monitoring of his emotional states, "Am I under control yet?", He has limited awareness of when he is calm, versus extremely upset. Another example would be laughing, seemingly inappropriately, when others are hurt, embarrassed, etc. One child with Asperger's Syndrome physically manipulates his face when requested to exhibit various emotional states.

Social Relation--Intervention Strategies:

The child with Asperger's will need to be **directly taught** various social skills (recognition, comprehension and application) in one-to-one and/or small group settings. Social skills training will also be needed to generalize previously learned social skills from highly structured supportive contexts to less structured settings and, eventually, real-life situations. **It is important to emphasize that children with Asperger's Syndrome will not learn social relations by watching other people, or by participating in various social situations.** They tend to have great difficulty even recognizing the essential information of a social situation, let alone processing / interpreting it appropriately.

Tools for teaching social skills:



"Social Stories"

-  The use of **Social Stories** (9) and **social scripts** can provide the child with visual information and strategies that will improve his understanding of various social situations. (See the previous article on "Assistive Technology" for an explanation on social stories.) In addition, the Social Stories/scripts can teach the child appropriate behaviors to exhibit when he is engaged in varied social situations. The repetitious "reading" of the Social Story/script makes this strategy effective for the child with Asperger's Syndrome. A 3-ring binder of Social Stories/scripts kept both at home and school, for the child to read at his leisure, has proven very successful for many students with Asperger's Syndrome

 **Role-playing** various social situations can be an effective tool for teaching a child appropriate social responses.

 **Video-taping/audio-taping** both appropriate and inappropriate social behaviors can assist the child in learning to identify and respond appropriately to various social situations.



🌻 **"Lunch/recess club"** is a structured lunch/recess time with specific peers to focus on target social skills for the child with Asperger's Syndrome. This strategy can assist in generalizing social skills previously learned in a structured setting.

🌻 **Comic Strip Conversations** (8) can be used to visually clarify social interactions and emotional relations (*see sample Comic Strip conversations photo*).

🌻 **Peer partners/buddies:** Specific peer(s) can be chosen to accompany and possibly assist the child with Asperger's Syndrome during less structured social situations and when experiencing social difficulties (e.g., out of class transitions, recess, lunch, etc.). This peer support network should initially be established in a small group setting.

🌻 **Individualized visual social "rule" cards** can be taped to the child's desk as a visual reminder regarding appropriate social behaviors to exhibit. Portable "rule" cards can be used for environments other than the classroom. The rules can be written on index cards, laminated, and then given to the child to carry along as visual reminders of the social "rules" for any particular context.



"Personal Rule"
Card

Social Communication Difficulties

Characteristics: The child with Asperger's Syndrome typically exhibits highly articulate and verbose expressive language skills with large vocabularies, particularly regarding specific topics (high interest areas). However, his convincing language skills can easily be misinterpreted as **advanced communication** skills. In turn this can result in a mislabeling of the child's actions as purposeful or manipulative, rather than behavior that is due to the child's significant difficulty in understanding and using appropriate social communication skills. Children with Asperger's Syndrome often lack social communication skills to sustain even **minimal** social communicative interactions in any of the following areas:

👤 **Conversational discourse skills:** Children with Asperger's Syndrome can generally engage in routine social interactions such as greetings. However, they may exhibit significant difficulty engaging in extended interactions, or "two-way" relationships (12). They can have difficulty initiating and maintaining appropriate conversations, engaging in conversational turn-taking, and changing topics in an appropriate manner. Their language can be extremely egocentric in that they tend to talk **at** people, instead of to them, exhibiting seemingly one-sided conversations (?). Incessant question asking can also be prevalent, as well as difficulty in



repairing conversational breakdowns.

 **Understanding and using non-verbal social communication (discourse) skills:**

Children with Asperger's Syndrome can have significant difficulty interpreting non-verbal social communication skills used to regulate social interactions (e.g., tone of voice, facial expressions, body postures, gestures, personal space, vocal volume, use of eye contact to "read" faces, etc.). For example, they may not understand that a raised vocal volume can convey an emotional state such as anger (e.g., A student with Asperger's Syndrome stated, "Why are you talking louder? I can hear you" when his mother raised her voice to communicate anger). These children may also have difficulty interpreting non-verbal cues, which the listener might be giving to communicate that a conversational breakdown has occurred (e.g., facial expressions to indicate not understanding the message, boredom, etc.). Some children with Asperger's Syndrome can exhibit conversational speech with a somewhat flat affect: limited vocal change regarding vocal tone, volume, pitch, stress and rhythm, particularly to indicate emotion and/or emphasize key words.

 **Narrative discourse skills:** Children with Asperger's Syndrome can exhibit difficulty with their narrative discourse skills, including relating past events, or retelling movies, stories, and T.V. shows in a cohesive and sequential manner. They may leave out important pieces of relational information, as well as referents, and may use many revisions, pauses and/or repetitions.

Example: A child with Asperger's Syndrome was relating his weekend to the class. The child with Asperger's Syndrome related: "Back through time, uhm, uhm, at my Grandma's, uh, it was (pause) back through time. I was, I was, I (pause) I uh, a long time ago. I was at my Grandma's."

Social Communication - target skills and strategies for intervention:

The following social communication skills (pragmatic language skills) may be focused on for direct instruction, depending upon the child's individualized needs:

-  Initiation of appropriate social interactions for various situations through appropriate **verbal** utterances, rather than actions or behaviors (e.g., On the playground, the child with Asperger's Syndrome should use the words "Wanna play chase?" to ask a peer to play tag, rather than going up to the peer and shoving them);
-  Topic initiation of **varied** topics - not only topics related to high interest areas;
-  Topic maintenance, particularly for topics initiated by others.
-  Conversational turn-taking across 3-4 turns (reciprocal communication skills);
-  Asking questions of others related to topics initiated by others;

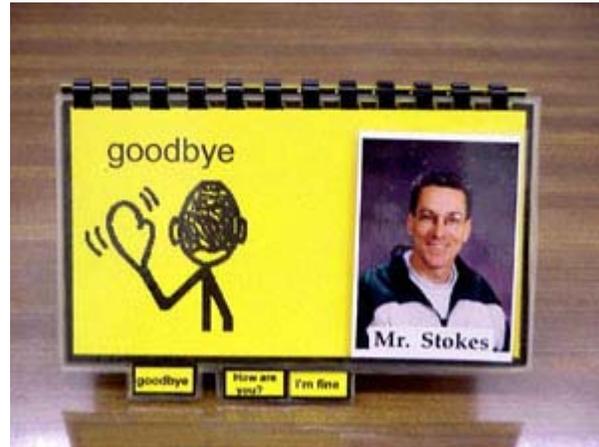


- Calling attention to communicative utterances. The child **directs** his communication to someone by first calling the other person's attention to himself;
- Comprehension and use of nonverbal social communication skills: tone of voice, personal space, vocal volume, body orientation, facial expressions, etc.;

- Narrative discourse skills: relating past events, retelling stories sequentially and cohesively by including important pieces of relational information as well as referents;

- Greetings;

- Seeking assistance appropriately (e.g., raising his hand for help in the classroom).



"Greeting Card"

Tools for teaching social communication skills: All of the tools listed previously for teaching social skills can also be used to teach social communication skills, with the addition of the following:

- Visual support strategies can be used to teach conversational discourse skills such as turn taking, topic initiation, topic maintenance, etc. For example, a visual "my turn" card can be used to physically pass back and forth between conversational partners, to visually indicate whose turn it is in the conversation.

Language Comprehension/Auditory Processing Difficulties

Characteristics: Children with Asperger's Syndrome generally interpret auditory information **literally** and **concretely**. They can have difficulty understanding figurative language, jokes/riddles, multiple meaning words, teasing and implied meanings.

Example 1: A child with Asperger's Syndrome was participating in a local basketball clinic. He was playing very well, and the coach made the comment, "Wow! Your mom must have put gas in your shoes this morning". The child



quickly looked at his mother with a worried expression. His mother shook her head "No" and encouraged him to keep on playing. The child responded to the coach, "Not today."

Example 2: A mother said to her child, "Stop back-talking to me". The child said, "I'm sorry Mom, I'll talk to your front."

It is also important to note that delays in processing information auditorily may be present in children with Asperger's Syndrome. Even though they may be able to **comprehend** the auditory information given, it may take them additional time to **process** this information prior to responding. They may also have difficulty following multi-step auditory directions (e.g., "Go back to your desk and take out your journals, and then write about your weekend.").

Language Comprehension/Auditory Processing - Intervention Strategies:

- 👉 Auditory information/prompting should be kept to a minimum, as it can be too overwhelming for some children. Visual cues should be used to assist the child to more readily comprehend directions, questions, rules, figurative language, etc.
- 👉 Give the child with Asperger's Syndrome enough **time to respond**, in order to allow for possible auditory processing difficulties, before repeating/rephrasing the question/directive. The child can be taught appropriate phrases to indicate he needs additional processing time, (e.g., "Give me a minute, I'm thinking") (2).
- 👉 Written rules can help the child understand what is expected of him at all times. Reference to the rules can be used rather than verbally telling him what to do, or what not to do.
- 👉 Auditory directions can be written on a dry erase board for the child with Asperger's Syndrome, greatly increasing his ability to independently complete tasks/activities.
- 👉 The adults in the child's environment should be aware of the child's concrete/literal interpretation of figurative language, and should provide concrete explanations if necessary. Focus should also be given to increasing the child's comprehension of figurative language skills, such as idioms, multi-meaning words, jokes, teasing, etc., through the use of visual supports.

Sensory Processing Difficulties

Characteristics: The child with Asperger's Syndrome may exhibit some sensory processing difficulties that result in atypical responses to sensory input (auditory, visual, tactile, smell, taste and movement). This difficulty in organizing his sensory input, experiencing both hypersensitive (over response) and hyposensitive responses (under response) to various sensory stimuli, can cause him to experience stress and anxiety in trying to interpret his environment accurately. Sensory processing difficulties can also markedly decrease the child's ability to sustain focused attention. It is important to note that the processing of this sensory information can be extremely inconsistent; that is, at one time the child may experience a hypersensitive response to a specific sensory stimuli, but at another time may exhibit a typical or a hyposensitive response.



Example: A child with Asperger's Syndrome was eating in a restaurant with family members and experiencing sensory overload. He ate as quickly as possible and then asked if he could go outside. The child paced for 20 minutes back and forth in front of the restaurant while waiting for the rest of the family to finish eating. While riding home, he pulled the hood of his coat all the way over his face and tied it tightly, to try to block out all sensory stimuli.

Example: While watching television with his family, a child with Asperger's Syndrome put his hands over his ears and exclaimed "That T.V. is driving me crazy".

Example: A child with Asperger's Syndrome exhibited an extreme sensory sensitivity to the sight and smell of eggs, particularly hard-boiled. The child gagged and vomited when exposed to hard-boiled eggs.

Sensory Processing - Intervention Strategies:

 It is important to be aware of possible auditory sensitivities and how the environment might be contributing to the child's marked increase in anxiety and challenging behaviors. Strategies to accommodate for auditory sensitivities can include:

 Use of headphones/headband to muffle extraneous auditory stimuli;

 Use of headphones to listen to calming music - when appropriate;

 Forewarn the child of any fire drills, tornado drills, etc. This can be done both verbally and visually (on his schedule). Although the child may appear calm outwardly and appear able to readily handle this change in routine, he may be experiencing internal stress/anxiety which could appear later.

 The use of a daily sensory diet, consisting of access to various sensory calming activities and/or physical activities (as deemed necessary), which are scheduled throughout the child's day. This can decrease his stress, anxiety and repetitive behaviors, as well as increase his calm/relaxed states and focused attention. Sensory "break" activities should be visually represented on the child's daily schedule. Examples of sensory calming activities include:

 **Deep pressure (pressure touch) activities:** firm hugs; being rolled within a mat or blanket; wearing a weighted vest/blanket; water activities; ball bath; massage; chewing, wearing a "Body Sock".

 **Rhythmic vestibular stimulation:** swinging, rocking in a rocking chair; movement on a wagon, scooter board, tri/bicycle; jumping; bouncing; vibration; or rolling in a tube or mat.

 **Proprioceptive stimulation:** sitting on a T-stool, Dyna-Disk or therapy ball for increased focused attention.

 Incorporating heavy work patterns (i.e., push, pull, carry) into functional tasks/jobs appears



to assist some children in becoming more calm and focused. For example, taking the attendance or lunch room count to the office for each classroom; getting the milk cartons for the kindergarten classrooms and delivering them to each classroom; sweeping a walkway; carrying books back to the library; cleaning the chalkboard, etc.

👉 Use of a "quiet space/area" in order to decrease sensory overload and increase self-calming, is another strategy. The quiet space should be a specified location/area with objects which are calming to the child (e.g., koosh balls, books, bean bag chair). For children who transition to various classrooms, the use of a "home base" classroom as a safe place to go is suggested when they feel the need for calming (12).

👉 Access to a "fiddle basket" containing small items for the child to manipulate (e.g., small koosh balls, Bend Bands, Fiddle-links, clothespins, etc.) can help calm the child and focus his attention at certain times during the day (e.g., while sitting and listening to a story read aloud by the teacher).

👉 To avoid sensory overloading transitions such as changing class periods, going to/from recess, or changing clothes for gym in the locker room, allow the child to transition a few minutes earlier or later than the rest of the students.

Difficulty Representing Language Internally

Characteristics: Children with Asperger's Syndrome can "blurt out" their thoughts as statements of factual information, resulting in an appearance of insensitivity and lack of tact. However these children typically do not understand that some thoughts and ideas can and should be represented internally, and thus should not be spoken aloud. Therefore, whatever they think, they tend to say aloud.

Example 1: "Mrs. Jones, why are you wearing that dress? It looks just like a bathrobe."

Example 2: "This is boring. Don't you think this is boring, Ryan? "

Typically developing children can internalize thoughts by the time they are five to six years old (2). This aspect of language should show improvement as the child learns how to take the perspective of others. This perspective-taking ability is sometimes referred to being able to "mind-read" or developing "Theory of Mind".

Representing Language Internally - Intervention Strategies:

👉 Initially, encourage the child to whisper, rather than speak his thoughts aloud . Next, encourage him to "think it-don't say it" (1).

👉 Role playing, audio/video taping and social scripting can all be used to teach the child how to initially identify what "thoughts" should be represented internally, versus aloud. Role-playing will allow the child to practice this skill.

Insistence on Sameness



Characteristics: Children with Asperger's Syndrome can be easily overwhelmed by minimal changes in routines and can exhibit a definite preference for rituals (13). As a result, these children can become quite anxious and worry incessantly about the unknown; that is, when the environment becomes unpredictable and they do not know what to expect.

Example: Unpredictability may occur during less structured activities or times of the day: recess, lunch, free play/time, physical education, bus rides to/from school, music class, art class, assemblies, field trips, substitute teachers, delayed start/early dismissal, etc.

The following features are important to consider for the child with Asperger's Syndrome:

 **Rigid, egocentric perceptions:** Children with Asperger's Syndrome tend to have very rigid egocentric perceptions of the world, and thus can become quite upset when changes occur that "go against" their preconceived "rules" or perceptions (14). Therefore, when a new situation occurs, they have to learn a "new rule" (perception) which can be very upsetting to them (e.g., indoor recess due to inclement weather) (14).

 **Strict adherence to rules:** Children with Asperger's Syndrome may generate rules based upon their perceptions of various experiences. As a result, they may strictly adhere to these self-imposed rules, and expect others to adhere as well. When these rules are "broken" by others, this can create a great deal of stress/anxiety in children with Asperger's Syndrome.

Example: Whenever a particular child with Asperger's Syndrome tells someone "Thank you", he expects the person to respond immediately with, "Your welcome". If the person does not immediately respond, the child will perseverate in saying "Thank you", and become increasingly anxious until the person says "You're welcome").

Conversely, when **given** rules by others (teachers, parents, etc.), children with Asperger's Syndrome tend to strictly and concretely interpret the rules, as well as exhibit strict adherence to the rule - for both themselves and others.

Example: A child with Asperger's Syndrome was given the following rules in art class by the teacher regarding markers: "No throwing markers; No chewing on the markers; No smashing marker tips". The child with Asperger's Syndrome imitated a peer, and connected the markers together to make a long "sword" type structure. This child and the peer engaged in a "sword fight". Both children got "in trouble" for this behavior, although the child with Asperger's Syndrome was truly confused as to why he was in trouble because he hadn't broken any "rules", according to **his** perceptions.

 **Need for closure/completion:** In relation to their ritualistic needs, children with Asperger's Syndrome can exhibit an intense need for closure or completion of tasks/activities before transitioning to the next activity. This can create significant educational implications if not planned for accordingly (e.g., If a math worksheet is not able to be completed prior to going out for recess, the child with Asperger's Syndrome may become quite upset - even though he may enjoy going outside for recess very much). The anxiety relates to the need for closure, a ritualistic need, rather than in relation to the specific activities at hand, and typically cannot be alleviated by being **told** that the activity can be completed later.



Insistence on Sameness - Intervention Strategies:

-  It is important to provide a consistent, predictable environment with minimal transitions.
-  Use of a visual schedule can assist in providing the child with information relating to his day, as well as preparing him for any changes which might occur in his daily routine.
-  Visual and auditory forewarning/foreshadowing are also critical, in order to give the child much needed information relating to possible changes in routines.
-  Assignments may need to be modified so that the child can complete them within a specific amount of time, prior to transitioning to the next activity.
-  Use of a "finish later" folder or box may be helpful. Even though the child may be verbally reminded that he can finish his math worksheet after recess, this information will not be processed as readily as through the use of a visual strategy, such as a "finish later" folder/box.

Poor Concentration/Distractibility/Disorganization:

Characteristics: Children with Asperger's Syndrome can often appear off-task, and may be easily distracted by both internal (perseverative thoughts/concerns) and external (sensory) stimuli. For example, internal stimuli distraction: a child sees a single cloud in the sky and begins to obsess about whether it is going to rain and/or possibly storm. External stimuli distraction: attending to a fly buzzing around the room rather than the teacher; attending to fluorescent light flickering). Screening out information that is irrelevant can be very difficult, requiring conscious effort by the child with Asperger's Syndrome (13).

In addition, children with Asperger's Syndrome can exhibit significant difficulties regarding both their internal and external organizational skills, including the following:

-  **Organizing** their thoughts and ideas to express themselves in a cohesive manner. For example, a child with Asperger's Syndrome was asked to explain how he figured out the answer to the math problem, $900 \times 3 = 2,700$. He responded: "Well, first of all, $9 \times 3 = 27$ and $90 \times 3 = 270$ and $900 \times 3 = 2,700$ and it sort of reminds me of another kind of math problem like the other day when you're multiplying and uh it goes $9 \times 3 = 27$ and then uhm, its like... I don't really know what I'm saying.").
-  **Gathering** educational materials needed for specific tasks/activities/homework.
-  **Keeping** track of their belongings - including personal and educational materials such as assignments.
-  **Desk/locker** organization, etc.

Concentration/Distractibility/Disorganization - Intervention Strategies:

-  A highly structured educational environment may be indicated for the child with Asperger's



Syndrome to experience success (*please refer to the "Structured Teaching" article for additional information*).

👉 Use of a timer (either egg or kitchen) provides time constraints and structure for completing tasks. When given an unlimited amount of time, children with Asperger's Syndrome may take an unlimited amount of time for task completion. However caution should be taken in using timers. Some children may become highly interested (distracted) in the amount of time which is passing, via the timer, and thus become less attentive to completing the task. Other children have exhibited extreme anxiety when timers are used because they become overly focused on the amount of time passing, and thus perceive that they cannot complete the task within the time constraint given.

👉 A written (visual) checklist is used to keep the child focused and "on task" so that he can complete each step listed in sequential order. This visual tool will allow for **independent** completion of an entire routine or task (e.g., use of a "morning routine" checklist or "homework" checklist).

👉 A daily (individualized) visual schedule should be used to communicate to the child what is currently happening, when he is "all done" with something, what is coming up next, and any changes that might occur. (*Please refer to the article on Structured Teaching for more information regarding visual schedules*).

👉 Use of a visual calendar at both home and school will give the child information regarding up-coming events/activities. When the child asks when a particular event will occur, he can easily be referred to the visual calendar, which presents the information through the visual mode, which the child can more readily understand (e.g., class field trip, "bath night", swimming lessons, etc.).

👉 Give **written** directions/cues whenever possible in various contexts/environments. Small dry erase boards and index cards are good tools to use for written directions as they are easily portable. (e.g., In computer lab, a three step direction could be written down to give the child information as to what he needs to do independently, rather than giving him continual auditory prompting for completion of the task).

👉 Use color-coded notebooks to match academic books.

👉 Use an assignment notebook consistently.

👉 Worksheets may need to be reorganized. Modifications could include fewer problems per sheet; larger, highly visual space for responding and boxes next to each question to be checked when completed.

👉 For class lectures, peer buddies may be needed to take notes. No Carbon Required (NCR) paper can be used or the student's notes could be copied on a copy machine.

👉 Use of an "Assignments to be Completed" folder as well as a "Completed Assignments" folder, is also recommended.



Emotional Vulnerability

Characteristics: Children with Asperger's Syndrome often have the intellectual ability to successfully participate in the regular education curriculum. However, they may lack the social/emotional abilities to cope with the demands of the regular education environment, such as regular classroom, recess, and lunch (13). As a result, these children may exhibit a low self-esteem, may be self-critical and may be unable to tolerate making mistakes (perfectionist) (13). Thus they can become easily overwhelmed, stressed and frustrated, resulting in behavioral outbursts due to poor coping strategies/self-regulation. These children can appear quite anxious for most of their waking day as they continually attempt to manage an ever-changing, sensory stimulating, social world. As stated by Tony Attwood, children with Asperger's Syndrome "are emotionally confused, not emotionally disturbed" (2).

Emotional Vulnerability - Intervention Strategies:

 **Utilize** the child's strength areas and incorporate them into special projects/assignments to be presented to the class by the child. This activity may increase his self-esteem with peers (e.g., a child with a high interest in geography could give a presentation to the class relating to the current area of study).

 **Teach** the child relaxation techniques that he could learn to implement on his own to decrease anxiety levels (e.g., "Take a big breath, count to ten", etc.) These steps could initially be written down as visual "cue" cards for the child to carry with him, and refer to as needed.

Restricted/Perseverative Range of Interests

Characteristics: Children with Asperger's Syndrome tend to have eccentric preoccupations or odd, intense fixations, as noted by the following characteristics (13):

-  Relentless "lectures" on their specific areas of interest;
-  Repetitive questions about interests, concerns or worries;
-  trouble "letting go" of thoughts or ideas, particularly relating to concerns or worries;
-  Refusal to learn about anything outside of their limited field of interest, as they do not appear to understand the significance.

Common high interest areas for many children with Asperger's Syndrome may include: "Wheel of Fortune" game, transportation, astronomy, animals, dinosaurs, geography, weather and maps. It is important to note that these behaviors can often resemble obsessive/compulsive types of behaviors.

Example: Perfectionism regarding written work: erasing the same printed letter or drawing numerous times in succession due to the seemingly imperfect quality of the letter formation/drawing, resulting in increased frustration/anxiety; One child with Asperger's Syndrome exhibits a high interest in *Perfection*. She continues to keep erasing all of her *Perfection* and lines up in



exhibits a high interest in Barbies. She cannot go to bed unless all of her Barbies are lined up in the exact same way).

Restricted/Perseverative Range of Interests - Intervention Strategies:

 **Set** aside specific times of the day, and specific time periods, for the child to discuss his high interests. This "discussion time" can even be included on his visual schedule. If the child brings up a perseverative topic/question at another time, refer him to his visual schedule to indicate when he can converse about this topic.

 **Provide a written** answer to repetitive questions asked by the child. When the child repeats the question, he can be referred to the written answer, which may assist in comprehension, and thus decrease the occurrence of the repetitive question asking.

 **Incorporate** the child's high interests into academics (e.g., if the child has a high interest in maps, use maps to teach math skills). With creativity and individualization, almost any high interest area can be infused into any academic area. Many students with Asperger's Syndrome have sustained their high interests into higher educational studies and subsequent vocations (e.g., Temple Grandin - holds a Ph.D. in animal sciences and has designed over one third of our country's animal livestock holding facilities).

Difficulty Taking the Perspective of Others (Mind Reading/Theory of Mind Deficit)

Characteristics: Children with Asperger's Syndrome can have great difficulty understanding that other people can have thoughts, intentions, needs, desires and beliefs different from their own (6). Thus their perceptions of the world are often viewed as rigid and egocentric, when in reality they are unable to infer other people's mental states. Typically developing children acquire "Theory of Mind" skills by age four, yet it is estimated that this concept develops between the ages of 9-14 in children with Asperger's Syndrome (6). The following are educational implications for children who have "Theory of Mind" deficit (6):

 When the teacher asks a question to the class, the child thinks that the teacher is speaking directly (and only) to him, and therefore calls out the answer.

 A child with Asperger's Syndrome can be extremely vulnerable to wrongful intent initiated by other children. He can have great difficulty reading the intentions of others and understanding the motives behind their behavior (e.g., a fifth grade student "befriended" a child with Asperger's Syndrome and told him to say and do many inappropriate verbalizations/actions, for which he got into trouble).

 Due to difficulty in being able to understand the emotional perspective of others, the child may exhibit a seemingly lack of empathy (e.g., a child with Asperger's Syndrome may laugh seemingly inappropriately when another child gets hurt).

 The child may have difficulty understanding that his behavior (both actions and words) can affect how others think or feel. He doesn't appear to understand that his words or actions can



make someone feel different than his own emotional state. He is not purposefully trying to hurt others. He is factually relating information, without regard to the other person's feelings.

Example: The child with Asperger's Syndrome may want to play on the computer during free time, and will attempt to do so with little to no regard to the child who is already occupying this activity. Another example: The child may state quite bluntly, "Someone stinks in here. I think it's Lori. Lori, you stink!".

 Cooperative learning groups can be extremely challenging for the child with Asperger's Syndrome. Again, he may have difficulty understanding that the other children in his group can have thoughts and ideas different than his own. This can often result in a significant increase in the child's stress, frustration and anxiety leading to the possible occurrence of challenging behaviors.

 The child may have difficulty taking into account what **other** people know or can be expected to know, leading to confusion on the part of the listener. Because the child can have great difficulty in considering the listener's perspective, he may exhibit the following shortfalls when relating information:

-  Provide insufficient background information to establish the subject;
-  A lack of referents;
-  Excluding important pieces of relational information, as **he** already knows this information;
-  Giving an excessive amount of irrelevant details when relating information, again oblivious to the listener's needs.
-  These children may exhibit an inability to deceive or to understand deception. They are sometimes described as the "classroom cops", due to their concrete and literal interpretation of information given. When rules are broken, they willingly identify the guilty party, with no awareness that they should participate in any sort of deception, even if **they** are the guilty party.

Mind Reading/Theory of Mind Deficit - Intervention Strategies:

 Training designed to specifically address the above features will assist the child in learning to consider the perspective of others. "Teaching Children with Autism to Mind-Read: A Practical Guide" is a good resource book with specific skills and activities clearly outlined for intervention (11).

 The child will need to be taught to recognize the effect of his actions on others (6). If he says something offensive, let him know very concretely and literally that "words hurt, just like getting punched in the arm". Encourage the child to stop and think how a person will feel before



he acts or speaks.

 Comic strip conversations can be used as a tool to visually clarify communicative social interactions and emotional relations through the use of simple line drawings. Specific colors are used to convey various emotional states for both the speaker and listener (8).

 Children's literature, videos, movies, or T.V. shows can be used to teach the child to interpret the actions of the characters, thus teaching him how to figure out what other people know (5).

Conclusion:

Children with Asperger's Syndrome exhibit significant social communicative difficulties, as well as other defining characteristics, which may severely impact their ability to function successfully in all facets of life. However, when given appropriate support strategies, through direct teaching and various accommodations and/or modifications, the child with Asperger's Syndrome can learn to be successful in our unpredictable, sensory overloading, socially interactive world. It is critical that a team approach be utilized in addressing the unique and challenging needs of a child with Asperger's Syndrome, with parents being **vital members** of this team.

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Additional Resources for Asperger's Syndrome and High Functioning Autism

-  MAAP (More-Able Autistic Persons) Newsletter: published by Sue Moreno and website (Maap Services, Inc., P.O. Box 524, Crown Point, IN 46307)
-  Connections Newsletter: The Newsletter for Asperger's Disorder and High Functioning Autism. 1177 West Loop South, Suite 530, Houston, Texas 77027. Newsletter published six times per year
-  Autism-Asperger's Syndrome Digest: Future Horizons, Inc. 721 W. Abrams Street, Arlington, Texas 76013. Newsletter published six times per year
-  The Morning News : Carol Gray, Editor; Jenison Public Schools 2149 Bauer Road Jenison, MI 49428. Newsletter published quarterly
-  Asperger's Syndrome and Rage; Practical Solutions for a Difficult Moment: by Brenda Smith Myles and Jack Southwick; Autism Asperger Publishing Company, P.O. Box 23173, Shawnee Mission, Kansas 66283-0173. Book
-  This is Asperger Syndrome: by Elisa Gaanon and Brenda Smith Myles: Autism Asperger



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