APPENDIX B:
ASPERGER'S SYNDROME ▬▬▬▬▬▬▬▬▬▬▬

How to Use this Appendix

This appendix provides the team an overview of Asperger's Syndrome. Students with Asperger's Syndrome (AS) share many of the primary characteristics and associated features of ASD described in Chapter 1. The profile of a student with AS, however, is sufficiently different from the typical profile of a student with ASD to warrant the additional information provided in this appendix. The information about AS should be used as the team moves through the planning process outlined in Chapters 1 to 5. The appendix concludes with a summary of common areas of difficulty experienced by students with AS, and teaching strategies.

Asperger's Syndrome

The disorders which would come to be called Autism and Asperger's Syndrome were first described by clinicians in the United States and in Vienna in the early 1940s.

Dr. Leo Kanner, trained in Vienna, emigrated to the United States where he became head of the Johns Hopkins clinic in Baltimore. In 1943 he gave the name "early infantile autism" to a type of disorder not previously identified. He described the disorder as a distinct clinical entity, characterized by a profound lack of affective contact with other people, an obsession with sameness, unusual preoccupation with objects, and impairment of verbal and non-verbal communication.

In 1944 Dr. Hans Asperger in Vienna described the same disorder and gave it a similar name. His paper, "Autistic Psychopathy," reflected his interest in more subtle impairments such as clever-sounding but unusual and pedantic use of language, lack of humour, and isolated exceptional abilities. Asperger's work was published in English in 1981 by Lorna Wing.

Students with Asperger's Syndrome (AS) have many of the characteristics of Autism Spectrum Disorder as described in Chapter 1. According to *DSM-IV-TR* criteria (Appendix A), a diagnosis of Asperger's Syndrome requires

- qualitative impairment in social interaction
- restricted, repetitive, and stereotyped patterns of behaviour, interests, and activities
- clinically significant impairment of social, occupational, or other areas of function
- no clinically significant general delay in language development
- no clinically significant delay in cognitive development or in development of age-appropriate self-help or adaptive skills

> For suggestions on assessment of students with AS, see
>
> - Cumine, V., et al. "Assessment and Diagosis." *Asperger Syndrome: A Practical Guide for Teachers,* 1998: 5-17.
> - Myles, B.S., and D. Adreon. "Assessment of Adolescents with Asperger Syndrome." *Asperger Syndrome and Adolescence*, 2001: 25-58.
> - Myles, B.S., J. Simpson, and J. Carlson. "Assessing Students with Asperger Syndrome." *Asperger Syndrome*, 1998: 13-41.
>
> (AS)

Students who are significantly impaired by ASD are typically identified well before school entry. Those with Asperger's Syndrome, by contrast, often have appeared to parents to be especially self-sufficient and independent children who are bright, verbally sophisticated, and show early interest in letters, numbers, and facts. The child's difficulties with social interaction and communication, rigidity, and anxiety may not become apparent until well after school entry.

It may be particularly difficult both for parents and teachers to accept that the child whom they have seen as exceptionally skilled and able requires student-specific support.

Social Understanding and Interaction

Individuals with AS may be highly motivated to relate to others but may not have the skills to do so successfully. They frequently lack understanding of social customs and expectations and may appear socially awkward, have difficulty with empathy, and misinterpret social cues. They may learn "scripts" for conversations and social interaction but have difficulty reading others' reactions and modifying their scripts to fit specific situations. They are poor incidental learners and need explicit instruction in social understanding and interaction.

> For ideas on social skill development, see
> - Moore, S.T. "Developing Social Skills." *Asperger Syndrome and the Elementary School Experience: Practical Solution for Academic and Social Difficulties*, 2002: 134-187.
> (AS)
> - Janzen, J."Expand Communication and Social Competence." *Understanding the Nature of Autism,* 2003: 369-386.
> (Education)

A common characteristic of persons with AS is difficulty carrying on social conversations. They may have advanced vocabulary and talk incessantly about a favourite subject. The topic will often be narrowly defined and the person may have difficulty switching to another topic or reading the reaction of his listener.

This is often due to problems with understanding the listener's non-verbal communication (or "body language") that sends subtle messages to the speaker, such as boredom with the topic of conversation. For example, looking away from the speaker and shifting restlessly communicates to the speaker that the listener wants to end the conversation or say something back, but the student with AS may not perceive this.

Students with AS often have the same difficulty as other students with ASD in understanding that others have perceptions, thoughts, and feelings different from their own. This inability to "see through another's eyes" is called by some clinicians the absence of a "theory of mind." For instance, a student may interpret the teacher's failure to call on him, even after he had raised his hand as required, as "the teacher is mad at me." Another student may become angry when a peer does not understand his spoken language because he knows what he is trying to say and cannot understand that his articulation or word usage prevents the peer from understanding.

> For discussion of the impact of theory of mind on social understanding and interaction, see
> - Cumine, V., et al. *Asperger Syndrome: A Practical Guide for Teachers*, 1998.
> (AS)
> - Winner, M.G. *Thinking about You, Thinking about Me*, 2002.
> - Winner, M.G. *Inside Out: What Makes a Person with Social Cognitive Deficits Tick?*, 2000.
> (AS)

Temple Grandin, who designs livestock handling facilities and teaches university courses, taught herself how and when to apply social rules by using her intellect and strong visual skills. She devised this personal rule system to help herself navigate the social world and guide her behaviour.

- *Really Bad Things* – examples: murder, arson, stealing, lying in court under oath, injuring or hitting other people. All cultures have prohibitions against really bad things because an orderly, civilized society cannot function if people are robbing and killing each other.

- *Courtesy Rules* – examples: not cutting in on a line at the movie theatre or airport, table manners, saying 'thank you' and keeping oneself clean. These things are important because they make the other people around you more comfortable. I don't like it when somebody else has sloppy table manners so I try to have decent table manners. It annoys me if somebody cuts in front of me in a line so I do not do this to other people.

- *Illegal but Not Bad* – examples: slight speeding on the freeway and illegal parking. However, parking in a handicapped zone would be worse because it would violate the courtesy rules.

- *Sins of the System (SOS)* – examples: smoking pot and being thrown in jail for 10 years and sexual misbehaviour. SOSs are things where the penalty is so severe that it defies all logic. Sometimes the penalty for sexual misbehaviour is worse than for killing somebody. Rules governing sexual behaviour are so emotionally based that I do not dare discuss the subject for fear of committing an SOS. An SOS in one society may be more acceptable in another; whereas rules 1, 2, 3 tend to be more uniform between different cultures. (Grandin, 1999)

For other first-person and parental accounts, see

- Special issues of *Focus on Autism and Other Developmental Disabilities*, 15(4) Winter 2000 and 16(1) Spring 2001.
- Cohen, S. *Targeting Autism*, 1998.
- Shopler, E. and G. Mesibov. *High Functioning Individuals with Autism*, 1992.
(AS)

Communication

Although children with AS usually speak fluently by the time they enter Kindergarten, they often have problems with the complexities of language, including

- pragmatics (the use of language in social contexts)
- semantics (multiple meanings)
- prosody (the pitch, stress, and rhythm of speech)
- understanding and using non-verbal communication

It is often difficult for adults and peers to understand how a child can have strong language skills and sound "bright," yet show severe difficulties in completing class work or interacting socially. It is easy to interpret this inconsistency as wilful non-compliance or deliberate attention-seeking behaviour.

Students with AS may have better expressive than receptive language skills; they may be able to use sophisticated vocabulary which they have memorized as individual words or as "chunks" and learned to use in appropriate contexts, yet fail to understand words used in everyday conversation and instructions. Even a student whose language skills are typically strong will show reduced ability to understand and to communicate when anxiety or emotions run high. The student may know and be able to articulate rules for social behaviours and anger management but not be able to access and apply these skills before responding with words or actions.

Associated Characteristics

Students with AS do not display significant delays in cognitive development and appear quite capable. The student with AS may be relatively proficient in the knowledge of facts, particularly about a subject that absorbs him. The same student may demonstrate relative weaknesses in comprehension and abstract thought, in the ability to attend to and retain any information not of special interest to him, and in social cognition.

Consequently, the student with AS usually experiences difficulties with

- reading comprehension
- problem solving
- concept development
- making inferences and judgements
- applying knowledge or skills
- executive functions (planning, organizing time or tasks, starting and stopping)
- distinguishing reality from fantasy
- perceiving danger

In addition, these students often have difficulty with cognitive flexibility (that is, their thinking tends to be rigid) and with adapting to change or failure. They do not readily learn from their mistakes and may repeat one problem-solving strategy many times rather than trying an alternative.

The student with AS is often intolerant of his own imperfections, real or perceived, and intolerant of others who make mistakes or do not follow rules precisely. He may become so upset about an item in a textbook that is not one hundred percent grammatically or factually correct that he can't continue a task. He may frequently correct adults and peers on matters of fact, grammar, or spelling.

> For ideas on teaching flexibility, see
> - Moore, S.T. *Asperger Syndrome and the Elementary School Experience,* 2002: 142-146.
> (AS)
> - Dalrymple, N. "Environmental Supports to Develop Flexibility and Independence." *Teaching Children with Autism*, 1995: 243-263.
> (Social Relationships)

> "In first grade the class was directed to print the letters of the alphabet. As I printed them, I drew complete letters on the paper, copying as I had seen them in newspapers and books. The teacher and everyone else in the class only drew line figures of letters, and I thought I was in a room full of non-conformists, who drew incomplete letters as though they were right and the whole world was wrong. I also noticed that whenever other children drew pictures, they drew stick figures that looked nothing like people. This I could not understand."
>
> —Vincelette, Barry. "My Early Years." *Focus on Autism and Other Developmental Disabilities*, 15(4) Winter 2000, 236-238.

Motor Skills

Students with AS frequently experience problems with motor coordination. The affected areas may include locomotion, motor planning, low muscle tone, balance, manual dexterity, handwriting, rapid movements, rhythm, and imitation of movements.

In school, students with AS may show difficulty with

- printing or handwriting
- using two hands together or stabilizing material with one hand
- copying material from books, the blackboard, or an overhead
- cutting, pasting, gluing
- folding papers or putting materials into three-ring binders
- moving around the classroom
- handling equipment
- remaining seated for long periods
- dressing/undressing
- sports, gym, recess

Responses to Sensory Stimuli

Students with AS may show the same range of hyper-sensitivity and hypo-sensitivity to auditory, visual, or other sensory stimuli as other students with ASD described in Chapter 1.

See Myles, B.S., et al. *Asperger Syndrome and Sensory Issues: Practical Solutions for Making Sense of the World,* 2000.
(AS)

Attention, Distractibility, Anxiety

Many students diagnosed with AS are inattentive and easily distracted and have received a diagnosis of Attention Deficit/Hyperactivity Disorder at one point in their lives. Distractions may be external, such as movement, light, or noise, or internal, such as perseverative thoughts and interests or emotional distress or perfectionism. Anxiety is also a characteristic associated with AS. It may be difficult for the student to understand and adapt to the social demands of school. The student may see that he reacts differently than his peers do to language, humour, or non-verbal and social communication. Appropriate instruction and support can help to alleviate some of the stress.

Strategies for Teaching Students with Asperger's Syndrome

Some of the strategies for teaching students with ASD may be applicable to students with AS. However, it is important to consider the unique learning characteristics of the individual student, provide support when needed, and build on the student's many strengths.

The following chart identifies some specific learning difficulties and suggests a number of possible classroom strategies, adapted from a variety of sources in the literature.

For planning and teaching academic and other content, see

- Moore, S.T. *Asperger Syndrome and the Elementary School Experience: Practical Solutions for Academic and Social Difficulties*, 2002: 47-86 and 93-132.
- Myles, B.S., and D. Adreon. *Asperger Syndrome and Adolescence*, 2001. (AS)
- Janzen, J. *Understanding the Nature of Autism*, 2003. (Education)

Area of Difficulty	Strategies
Language and Communication • understanding complex language and understanding intent of words with multiple meanings, sarcasm, humour, figures of speech, slang, non-verbal communication	• note difficulties with language comprehension; remediate on the spot and then practise intensively 1:1 or in small group • do whole-class exercises so student sees that other people understand things in different ways • explain metaphors and words with double meanings
• following directions	• teach student to recognize confusion and to seek assistance; encourage student to ask for an instruction to be repeated, simplified, or written down • pause between instructions and check for understanding • limit oral questions to a number the student can manage • teach student to ask questions as well as to answer them
• speaking with unnatural rhythm/rate/inflection/tone • speaking pedantically and formally ("little professor")	• use audio-taped and videotaped conversations between student and others • watch videos to identify non-verbal expressions and their meanings
• in classroom setting or in conversations, bores or frustrates others by interrupting, talking off-topic, talking only about topics of personal interest, resisting attempts to change the subject	• use 1:1 or small group settings to teach rules and cues regarding conversations, including opening remarks, turn-taking, and when to reply, interrupt, or change the topic • use *Comic Strip Conversations* (Gray, 1994) to teach conversation skills related to specific problems
• correcting others' vocabulary and grammar	• use social stories and role-playing to explain how others react to correction; try to reduce number of corrections or have student write them down for later discussion

(continued)

(continued)

Area of Difficulty	Strategies
Social Interaction • has difficulty understanding the rules of social interaction and reasons for them • comprehension of verbal and non-verbal communication is poor • has difficulty understanding own emotions or reading the emotions of others • has difficulty understanding that others know different things and feel differently • has difficulty understanding "unwritten rules" and once learned, may apply them rigidly • can't understand or predict others' reactions or the impact on others of his own actions • is competitive and perfectionistic, seeing winning as the only reason to interact • keeps trying to interact or make friends but failing, leading to anger or depression • hasn't developed a repertoire of age-appropriate leisure skills to serve as vehicles for interaction, such as card or board games	• provide clear expectations and rules for behaviour • teach (explicitly) the rules of social conduct • teach the student how to interact through social stories, modeling, and role-playing • educate peers about how to respond to the student's disability in social interaction • use other students' actions as cues to indicate what to do • encourage co-operative games • provide supervision and support for the student at breaks and recess, as required • use a buddy system to assist the student during non-structured times • teach the student how to start, maintain, and end play • teach flexibility, co-operation, and sharing • teach the student how to monitor his own behaviour • structure social skills groups to provide opportunities for direct instruction on specific skills and to practise actual events • provide adequate pleasant adult interaction • look for other students with similar interests and pair them • teach age-appropriate activities • teach relaxation techniques and provide a quiet place to go to relax • involve other professional support regarding anger and depression as required
• lacks awareness of personal space	• model and practise appropriate personal space

(continued)

Area of Difficulty	Strategies
Rigidity, Need for Sameness • inflexible, rigid style, can't adjust to small changes in classroom physical structure, changes in routines, differing expectations from different teachers	• prepare the student for potential change, wherever possible • use pictures, schedules, and social stories to indicate impending changes
• preoccupied with details and precise factual correctness, and with following rules and ensuring that everyone else does as well	• teach flexibility by introducing small changes regularly and modeling "making mistakes and correcting them" and "changing one's mind" so that student has many trials to learn to cope with changes and learns that he can manage • help student to accept the best answer for the task or from the text, even if not 100% correct
• may be so distracted by obsession with correctness that he can't stay on task or be redirected from talking or ruminating about concerns	• set time period daily for student to debrief about frustrations and insist on completion of tasks within reasonable time periods
• may resist anything new, anytime it is introduced	• acknowledge difficulty and persevere
Attention and Motivation • only interested in a narrow range of topics or activities • resists learning anything new or unrelated to his interests	• limit perseverative discussions and questions • incorporate and expand on interests in activities
• more motivated by own mental perseverations or by being in control than by any activity or any external reinforcer	• set firm expectations for the classroom, but also provide opportunities for the student to pursue his own interests
• no pride in accomplishment or obsessive concern for competition or comparison with others	• provide frequent feedback and redirection • encourage student to compete with himself rather than others
• has difficulty screening distractions to focus on teacher's voice or task at hand	• use non-verbal cues to get attention • break down assignments • use visual organizers, semantic mapping, and outlining • provide timed work sessions • reduce homework assignments • place student at the front of the classroom for group instruction but use a less distracting work setting for seat work

(continued)

(continued)

Area of Difficulty	Strategies

Organizational Skills
 	
• anxiety because tasks or settings seem overwhelming
• difficulties with managing space, time, personal possessions, assignments, classroom materials
• impulsive and easily distracted
	• provide physical predictability with a regular seat and work space, and warn or involve student in rearrangements
	• use box inside desk or additional space to organize belongings, and require weekly tidying
	• provide routine predictability by warning of changes and regular transitions
	• use visual strategies to help organize work, decrease anxiety, increase reliance on environmental prompts rather than adult assistance, and foster independence. Visual supports can include
	  • individual schedules for day/week/month on desk/in binder/in locker
	  • steps for tasks, itemized in point form
	  • colour coding for different subjects, mandatory vs. choice tasks
	  • graphic/written cards to remind of strategies, rules
	  • home-school communication log listing homework, items needed for tomorrow

Motor Coordination • poor gross motor and motor planning skills, awkward gait, poor at sports, poor stamina and balance, difficulty sitting upright at desk for long periods • poor bilateral and/or fine motor skills for printing, writing, keyboarding • perfectionist about appearance of writing • difficulty with using appropriate pressure on pencil, keyboard	• adjust requirements/expectations in gym • involve in fitness activities or individual sports/recreation such as swimming, skating, weight training • allow student to print or hand-write as he does best • give physical breaks from seat work • experiment with specialized seat cushions, slanted writing surface, different pencil grips, or sizes of pen or pencil • adjust quantity/quality of written work • provide extra time for tests • teach keyboard skills or hunt and peck, and don't allow lack of keyboarding skills to delay use of computer for communication or assignments • ensure the involvement of occupational therapist/physical therapist as necessary

(continued)

(continued)

Area of Difficulty	Strategies
Academic Work • usually average to above-average intelligence but may be significantly limited by elements of AS • may orient to print or numbers at early age, causing others to see him as very bright • expressive language may be better than receptive understanding, so others may overestimate his ability • may take more time to process verbal information than he is given, but tries to look competent and to avoid drawing attention to himself • excellent rote memory for factual information and good word recognition/vocabulary skills mask problems with comprehension in reading, and problem-solving in math • may retain and store information without sorting or filing, affecting ability to understand time or sequence, cause/effect, means/end, or to access information quickly	• do not assume that the student has understood simply because he can restate the information • be as concrete as possible in presenting new concepts and abstract material • use activity-based learning where possible • use graphic organizers such as semantic maps, webs • break tasks down into smaller steps or present in another way • provide direct instruction as well as modeling • show examples of what is required • use outlines with topics and sub-topics written to help student take notes and organize and categorize information • avoid verbal overload • build on strengths (for example, memory) • do not assume that student has understood what he has read—check for comprehension, supplement instruction, and use visual supports • use visual strategies to help student organize facts, identify categories and relationships, organize thoughts to express himself orally or in writing, and make abstractions such as time or distance more concrete • assess and teach comprehension skills for reading and math word problems
Emotional Vulnerability • may have difficulties coping with the social and emotional demands of school • easily stressed because of inflexibility • prone to anxiety • often has low self-esteem • may have difficulty tolerating making mistakes • may be prone to depression • may have rage reactions and temper outbursts	• provide praise and tell the student what he does right or well • teach the student to ask for help • teach techniques for coping with difficult situations and for dealing with stress, such as relaxation strategies • use rehearsal strategies to prepare for difficult situations • provide experiences in which the student can make choices • explain ASD or AS to student • help the student to understand his behaviours and the reactions of others • educate other students about ASD or AS

(continued)

Area of Difficulty	Strategies
Emotional Vulnerability (continued)	• use peer supports such as buddy system and peer support network For more information, see Anger Management, Chapter 5, pages 42 to 46.

Sensory Sensitivities
 	
• most common sensitivities involve sound and touch, but may also include taste, light intensity, colours, and aromas
• types of noise that may be perceived as extremely intense are
  • sudden, unexpected noises such as a telephone ringing or fire alarm
  • high-pitched continuous noise
  • confusing, complex, or multiple sounds, such as in shopping centres
• may resist going to settings where he expects loud noises or other unpleasant sensory input such as smells
• exhaustion from trying to cope with sensory overload may lead to irritability, behavioural outbursts, reduced coping ability later in day
	• be aware that normal levels of auditory and visual input can be perceived by the student as too much or too little
	• keep the level of stimulation within the student's ability to cope
	• avoid sounds that are distressing, when possible
	• use music to camouflage certain sounds
	• minimize background noise
	• use ear plugs if noise or reaction is very extreme
	• teach and model relaxation strategies and use of diversions to reduce anxiety
	• provide opportunities and space for quiet time
	• arrange for independent work space that is free of sensory stimuli that bother the student
	
	For more information, see Chapter 5, pages 27 to 36.

For online resources for Asperger's Syndrome, see

• OASIS (online Asperger Syndrome Information and Support) <www.udel.edu/bkirby/asperger>
• More Advanced Autistic Persons Services <www.maapservices.org>
• Tony Attwood's website <www.tonyattwood.com.au>