

Autism Spectrum Disorders: Pulling it Together



Understanding and Incorporating Motivation and Practical
Sensory Integration to Support Learning and Communication
Across the Day

February 2012 – Autism Noticeboard
Paula Aquilla (OT, DOMP) & Simone Griffin (SLP)

**Autism
Noticeboard**
A place for ASD professional services

Welcome & Thanks to...

- Amanda Golding, Autism Noticeboard
- All who helped organize this evening
- You, for coming out to learn!

* *Handouts will be available on Autism Noticeboard*

- *Presentation notes*
- *Making the most of communication opportunities*
- *Simone's Ten Top iPad Apps for ASD*

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Presentation Objectives

- Working Towards 'Active Engagement' and Learning and Communication Across the Day
- Taking a step back: building the whole picture
- Sensory Integration & Regulation in ASD
 - The science of sensory systems
 - How different sensory needs might present in ASD
- Tying in Sensory in with Motivation and Active Engagement
- Questions

What Works in Supporting Individuals with ASD?

- Many treatments described in media or on internet
- Generally, **educational** and **behavioral** treatments are most effective for meaningful gains
- There is currently no "cure" for ASD
- Interventions aim to improve the challenges experienced by children/adolescents/adults with ASD

| Approach | Example ASD Interventions |
|---------------|---|
| Communication | Facilitated communication |
| Behavioral | ABA, DDT, DDC, incidental teaching, PRT, PBS, Lovaas Program, PCDI |
| Developmental | DSP, DIR/Floortime model, RDI |
| Therapy-based | AIT, FCT, signing, PECS, sensory integration, social stories |
| Medical | Typical or atypical antipsychotics, beta-blockers, cholinergic/GABAergic/Noradrenergic agents |
| Family-based | More than Words, EarlyBird Program |
| Combined | Early Start Denver Model, TEACCH |
| Alternative | Chelation, cranial osteopathy, digestive enzymes, diet, yeast overgrowth, Secretin, B6 & magnesium, MMR vaccine |
| Other | Daily life therapy, holding therapy, music therapy |

Active Ingredients to Effective Programming

American Speech-Language Hearing Association (ASHA):

- 1) Entry into intervention programs as soon as ASD is suspected
- 2) Active engagement in intensive instructional programming for a minimum of 5 hours per day, 5 days a week
- 3) Repeated, planned teaching opportunities
- 4) Inclusion of a family component, including parent training
- 5) Low student:teacher ratios
- 6) Mechanisms for ongoing assessment and program evaluation with corresponding adjustments in programming

cont'd...

Active Ingredients to Effective Programming

7) Six kinds of instruction should take priority for individuals with ASD:

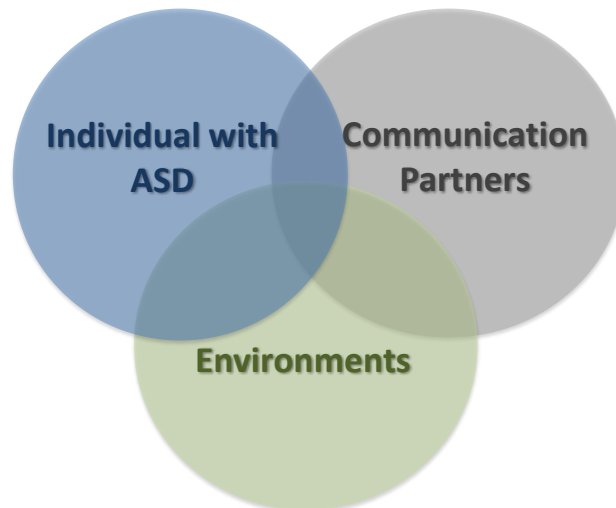
- (a) functional, spontaneous communication;
- (b) social instruction in various settings throughout the day;
- (c) play skills with a focus on play with peers and peer interaction;
- (d) new skill acquisition and generalization and maintenance in natural contexts;
- (e) functional assessment and positive behavior support to address problem behaviors; and
- (f) functional academic skills when appropriate (NRC, 2001).

There has been a movement
from this...



Individual with
ASD

to a more collaborative 'whole' picture & integrated approach



How do we get ...

- Actively engaged individuals?
- Repeated Learning and communication opportunities across the day?
- Inclusion of family members?
- Functional and spontaneous communication?
- Interaction with peers....?

Taking A Step Back: Build the Picture



A different point of view...

“An alternative is for the clinician to begin therapy by looking for how the patient experiences the world, asking not “How do you feel?” but ...

“How do you know the world?”

Dr. John Ratey

Taking a Step Back Start by Building a Picture

- Observing across environments
- Questions (and lots of them)
- Skills and Knowledge (communication partners)
- Preferences (individual and communication partners)
- Trials & Success

Who is this person?

- How would you describe this person?
- What do they like/dislike?
- Who are the family members? What is this person's role in their family
- What is the learning style?
- Which supports work? Which don't?
- What is the best environment for this person?

What is happening when they **ARE** actively engaged?

Understanding what is happening with:

- Sensory systems?
- Motivation?
- Communication?




Individual is actively engaged and focused

What is happening when they are **NOT** actively engaged?

Understanding what is happening with:

- Sensory systems?
- Motivation?
- Communication?



Individual is actively engaged and focused

Sensory Needs and Issues in Individuals with ASD: The reasons behind some Behaviors



A First Person View on Sensory Processing

“Sensory Integration Program. By this I mean to say, it helps all the senses to work together. I had a definite problem. When I concentrated on the sound, I felt my eyes and nose shutting off. I could never do everything together at the same time. That is, I could not see you and at the same time hear you....the result was the knowledge from a fragmented world perceived through isolated sense organs.

Tito Rajarshi Mukhopadhyay

A Dysregulated Nervous System Might look like this:

- Inaccurate response to a request
- State of fight, flight or fright
- Decreased attention and focus
- Difficulty keeping emotion in a calm state
- Difficulty calming self
- Anxiety
- Sleeping, digestion, elimination and eating challenges

Sensory Processing Dysfunction

- Sensory Modulation Disorders – SOR, SUR, SS
- Sensory Discrimination Disorders –visual, auditory, tactile, taste/smell, position/movement
- Sensory Based Movement Disorders – postural disorder, dyspraxia

(Miller, Sensational Kids, 2006, p. 13)

Sensory Modulation Disorder **(SOR)**

- Defensive behavior/hyper-vigilant
- Avoids sensation
- Most commonly identified SPD
- Most emotional
- Fast fight, flight and fright
- Challenging, rigid
- Frequent meltdowns
- May not be able to communicate when upset

Case Example: Joey

- Demonstrates tactile defensiveness and has difficulty dressing, bathing, eating, standing in line and working in groups in the classroom
- Can use visual supports to communicate
- Environment, approach and activity selections

Sensory Strategies for Joey

- E- back against the wall in school, quiet area, front or back of line, cubby at the end, schedule changes
- Communication – use visual to request sensory choices
- A-approach from the front, ask permission prior to touch, give time
- SA-brushing, weight, compression (push-pull-lift-carry)

Sensory Under-Responsivity (SUR)

- Requires intense input just to notice
- Disregards sensation; appears disengaged
- Safety issue; poor response to pain
- Slow responsiveness/slow to toilet train
- Slow to communicate, difficulty with motivation to communicate - it's too much work!

Case Example: Keeshan

- Slow to respond to instruction
- Slow to transition
- Falls off his chair
- Dangerous behaviour on stairs/playground equipment
- Environment, approach and activity ideas

Sensory Strategies for Keeshan

- E - visual supports for communication, safe, consistent environment, stable chair, desk on perimeter of room
- A- give lots of time and deep pressure input to gain attention, be animated and change it up!
- SA - proprioceptive activities; especially duties in the classroom - wiping board clean, carrying books (push, pull, lift and carry), compression, weight, brushing program

Sensory Seekers (SS)

- Constantly seeking out sensation
- Bumper and crasher/spinning, swinging, touching, talking
- Safety concern
- Can be impulsive
- Seems more than even they can handle

Case Example: Matthew

- All over the room
- Doesn't seem to have a 'medium speed'
- Constantly bumping into classmates
- Interested in anything new
- Difficulty completing tasks
- Environment, approach and activity ideas

Sensory Strategies for Matthew

- E - safe, consistent setting with desk toward the perimeter, visual supports for communication; a schedule that builds in movement
- A - patience, time, using of deep pressure when interacting, humor
- SA- movement, push pull lift and carry activities frequently in his day, compression, weight

Sensory Discrimination Disorder (SDD)

- Can't differentiate between sensation; even between internal and external sensation
- Jumbles sensation
- May or may not co-exist with SMD

Case Example: Rebecca

- Very sensitive to emotional environment
- Synesthesia- hears colors and tastes sounds
- Environment, approach and activity ideas

Sensory Strategies for Rebecca

- E - consistent, encourage her help in planning as she's coming from such a different perception
- A - be open, encourage Rebecca to teach you (and maybe the class), about her perception, be consistent
- SA - using whatever senses she prefers that help her to stay in the calm, alert state

Sensory Based Motor Disorder (SBMD)

- Postural Disorder
- Difficulty with core strength, balance, bilateral co-ordination
- Low tone, easy fatigue
- Associated responses
- 'leaner'

Case Example: Chris

- Lower muscle tone
- Difficulty with stamina
- Often leaning on any available surface
- Holds pencil with an exaggerated grasp
- Environment, approach and activity ideas

Sensory Strategies for Chris

- E - space to move and desk near perimeter of room, equipment that offers movement (ball, mini tramp), desk top easel
- Communication-
- A - animated, use of deep pressure, warnings of transitions
- SA - movement, push pull lift and carry tasks, duties in classroom, smells and light touch

Sensory Based Motor Disorder

- Dyspraxia
- Clumsy, difficulty learning new movements
- Ideational, ideomotor challenges
- May prefer familiar tasks as new ones are so difficult to learn

Case Example: Renee

- Doesn't respond to requests accurately
- Needs more time to organize her body
- Doesn't like to repeat a task
- Can become easily frustrated
- Environment, approach, activity ideas

Sensory Strategies for Renee

- E - consistent, visual supports for scheduling, organized
- Communication-
- A - consistent, time given, encourage Renee's turn near the end so she has lots of time to plan
- SA - movement and deep pressure activities and calming activities to combat anxiety - sensory diet

Signs of Autonomic Nervous System Overload

- Yawning/Sneezing/hiccoughing
- Averted or fixed gaze/hyperalert state
- Sweating
- Gagging/spitting up
- Breathing irregularly
- Changing skin color/tone
- Changing state
- Elimination of bowel and bladder

Behavioural Signs of Sensory Overload

- Fussing/crying
- Grimacing
- Sighing/startling
- Stiffening
- Averting gaze/pushing away
- Arching back
- Zoning out

Other things to think about: Anxiety!!!

- Affects affect, regulation, behaviour, body functions
- Daily living tasks; eating, bathing, dressing
- occupations; play, work, school tasks
- Social challenges
- Personality
- Self esteem

Other things to think about: Growth!!!

- Dependent upon: genetics, environment, nervous system, digestive system and relationships
- Growth is a *dynamic* process; a constant interaction between the internal and external world
- Growth is very disorganizing!!

Sensory Diet

- A prescribed combination of activities and environmental/approach accommodations that meet an individual's sensory needs with the goal of maintaining a calm, alert state.
- The use of a sensory diet can enable a child to maintain their nervous system in a calm, alert state and maximize their potential!

Considerations in creating a Sensory Diet

- Individual needs of the child
- Communication needs of the child
- Support of a parent/caregiver/teacher
- Support of the school/centre
- Environment
- Available equipment
- Schedule
- Needs of other siblings/students

Think of Sensory Systems as a Bank...

- Deposits are made through the environment, sensory diet, specific activities and interaction styles
- Withdrawals are made throughout the day; more stressful days need more withdrawals

(Lise Falise, OT)

Calming/Organizing Activities


- Movement
- Oral Motor
- Deep pressure/proprioceptive
- Auditory/visual
- Smell/taste
- Touch
- other

Alerting Activities

- Movement
- Oral motor
- Deep pressure/proprioceptive
- Auditory/visual
- Smell/taste
- Touch
- other

The More we Understand Sensory Integration...

- The more we can work towards more active engagement across the day and increase opportunities for learning, communication and fun!



Individual is actively engaged and focused

Perception is reality!

“There are no bizarre behaviors more accurately, there are human responses that are not fully understood or appreciated.”

Carol Gray (1997)

Take Home Messages

- By learning and understanding more about your child’s sensory needs and processing we can support them to be more ‘actively engages’ and therefore support more learning opportunities across the day.
- Motivation plays an important role in your child’s willingness to actively engage in learning and communication across the day. Team work, collaborations and brainstorming can help work towards maintaining a high level of motivation!

Keeping Building the Picture and Pulling it Together:

Motivation and ASD



E.B. White Describes happiness...

- 'We should all do what, in the long run, gives us joy, even if it is only picking grapes or sorting the laundry'.

Why is Motivation Important?

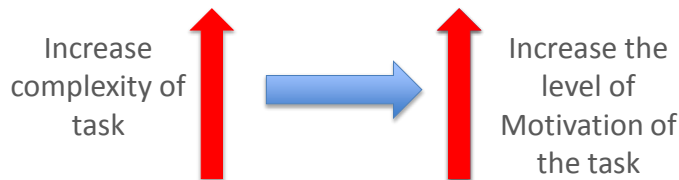
- Motivation and excitement helps us stay focused and enjoy what we are doing
- When we are motivated we are more likely to persist with more challenging tasks
- When we are motivated we are more likely to return to the activity that was motivating.

Why Motivation is Important in ASD

- Individuals with ASD sometimes find learning new skills harder and therefore need to repeat activities numerous times before a skills is learnt.
- Individuals with ASD can sometimes get easily distracted, if a task is highly motivating the child is more likely to remain on task or come back to the task after the point of distraction.

The 7,8,9 or 10 out of 10 Rule!

If you are asking your child to participate in complex task you might need to consider increasing the level of motivation.



My Rule of Thumb:

If it is hard, make sure you are incorporating something that is highly motivating with it. Something that is ranked at 7,8, 9 or 10 out of 10!

Juggling & Compromising Motivation

- While Motivation is important children sometimes have to engage in less motivating activities. Try **make a deal** with them or **schedule** in motivating activities across the table.
- Motivation in classrooms can be hard because there might be different needs and different motivations!

Motivation Across the Ages

- Maintain motivation across the years
- Consider supporting a strong interest or passion into vocational training
- Be creative!



Maintaining Motivation

- This is hard... so get your team involved and work together in exploring how you can maintain motivation across the day, week, and years!!!!

So How Do I ACUTALLY Motivate my Child...



Sensory Preferences and Motivation!

- Understanding your child's sensory needs and preferences is a good start to working out what motivates your child.
- Let's see if we can put it into ACTION!

Get to know your child's Motivation

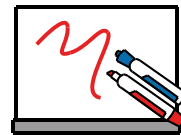
Find out the answers:

- What activities are the most fun for your child/student
- What grabs their attention and keeps it?
- What activities do they become organized and calm?
- What activities create anxiety in your child?
- If left alone what activities does your child engage in?

Record, Record & Record

Work Together & Brainstorm How you Can Incorporate Your Child's Motivations into everyday Activities

- Be creative, the more ideas you have the more chance your child is to like one of them
- Start to analyze and hypothesize why you think your child likes certain things and see if you can extend this interest.



Example: Common ASD Motivation

Trains:



Brainstorm Ideas around Trains...

Brainstorm ideas about how you might incorporate motivation into a range of different learning areas.

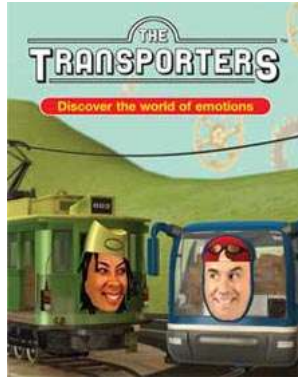
Trains Example:



Example Motivational Activity

Trains: Teaching Emotions

Example: Transporters is a DVD that uses animated trains with real life faces to teach emotions to individuals with ASD.



www.thetransporters.com

Example Motivational Activity

Trains: Following/Giving Instructions

Example: Barrier Game where the player is required to listen carefully to where they needs to place each train.


E.g.,
"Put Thomas up the
top in the middle"





Example Motivational Activity

Trains: Communication Skills











Example: Increase sentence length


I


want


train


Example: Increase vocabulary (train set)

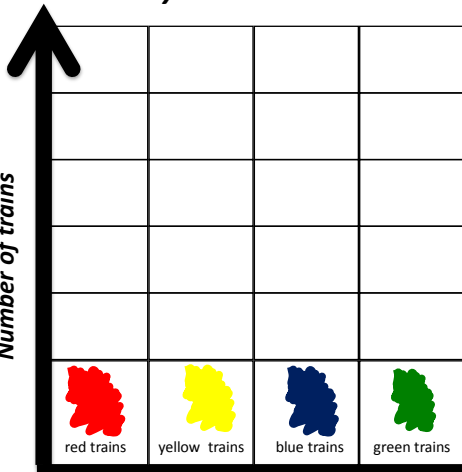
| | | | | |
|---|---|---|--|---|
|  straight track |  curved track |  bridge |  train |  carriages |
|  crossing |  signs |  grass |  flowers |  trees |




Example Motivation

Trains: Math Concepts

Example: Individuals could count and graph the colored trains that pass/included in a toys set.





| | | | |
|--|---|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| |  red trains |  yellow trains |  blue trains |

Example Motivational Activity

Trains: Activities of Daily Living

Example: Real life train travel experiences can include lots of learning opportunities.



Example Motivational Activity

Trains: Problem Solving

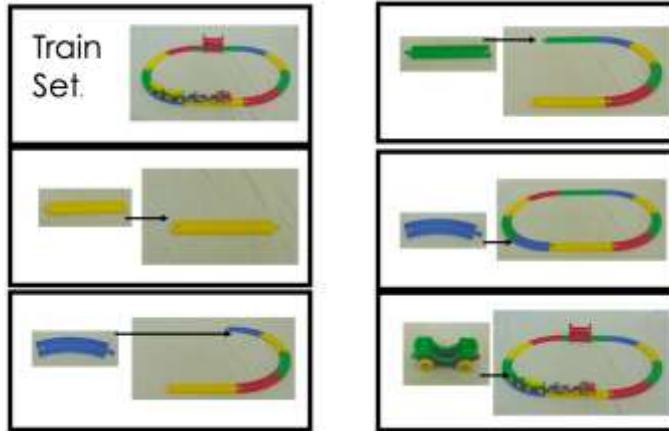
Example: Train Conductor is an iPad App that requires problem solve and organize trains so they don't crash.



Example Motivational Activity

Trains: Extending Play Skills

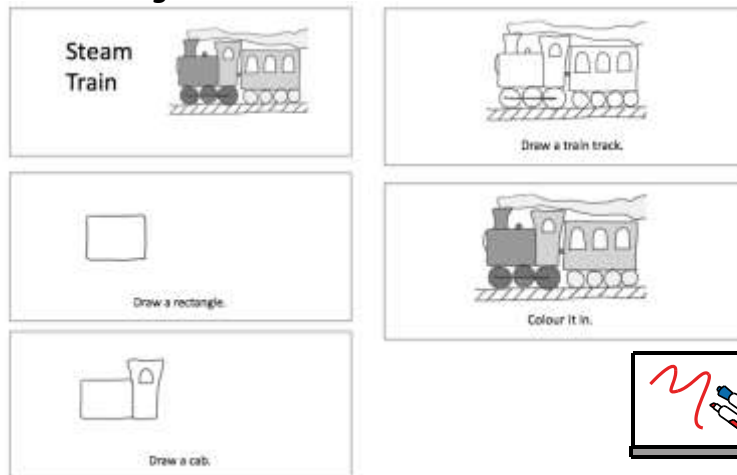
Example: Some children might need support in constructing toys that have multiple parts.



Example Motivational Activity

Trains: Drawing/Fine Motor

Example: Visual script with step by step instructions for drawing a steam train



Using iPads to Motivate Individual with ASD




Using iPads with Individual with ASD


Depending on **HOW** you use the iPad with you child/student it can be used to support:


- Educational Skills
- Communication Skills
- Social Skills
- Leisure Skills



Simone Griffin's Top 10 ASD iPads Apps

1.  **Injini** (\$49.99): This App is well designed and follows child development skills. The App is great for children starting out using an iPad and learning to trace, visually track, follow instructions and much more (There is a free trial version of this App).


2.  **First Then Visual Schedule** (\$9.99): This App is great for creating quick on the spot visual schedules for children. It can also be used as a visual script to help break down a task into smaller and easier steps or you could insert pictures to re-tell a story.


3.  **Cut The Rope** (\$0.99): This App is great for children learning to problem solve their way through levels. The goal of the game is to cut ropes (using their finger) and get the lolly to fall into the frogs mouth. Lots of conversations and requests for help!





Please review the suitability of these Apps for your child's individual needs before purchasing them.

Simone Griffin's Top 10 ASD iPads Apps

4.  **Camera** (free): This App is included on the iPad. Children can use the camera to capture special moments and then later share them with friends of family – or have some fun modifying them in photo booth. Or for those buddy movie makers the video camera can be a great learning tool too!

5.  **SOSH** (\$39.99): This App is designed to help tweens, teens and young adult social skills. It was designed specifically with individuals with Asperger's in mind. It is great for self regulation, understanding perspectives, dealing with stress and much more (There is a free trial version of this App).

6.  **Draw Free** (free): This App is general drawing App without wasting paper. Your child can draw or trace over a picture that you have drawn in a different color. Once you have finished you can take a picture of it on the iPad and keep it to talk about after or share the picture with friends and family.

7.  **Cake Doodle** (\$0.00): This App has all the fun of cooking without the mess. You get to make the cake and decorate it. Its great for following instructions and requires you to crack eggs by tapping, tip the iPad to pour the milk, sieve the flour by turning the handle and much more!

Please review the suitability of these Apps for your child's individual needs before purchasing them.

Simone Griffin's Top 10 ASD iPads Apps



Proloqu2go (\$189.99): This App is one of the most popular and comprehensive augmentative and alternative communication voice output devices. It can be made into a simple AAC voice output device and changed to include more information in it as the individual's communication needs change (Funding for this App might be available through Yoralla Aids & Equipment program)



Pictello (\$18.99): This App is designed to help children on the spectrum to learn how to re-tell special stories and events. You simply take photos, insert them into the program and you can type what happened and incorporate voice output to go with the story!



FirstWords: Deluxe (\$4.99): This App is designed to get kids learning to spell. There are different levels which makes it great for a range of children. You can simply match the letters to the tiles to spell the words or make it harder whereby the child needs to spell the short word without prompts. Kids seem to love the fun design of this App.

Keep up to date with the latest iPad and Autism Apps with Simone's Facebook Page, simple search for "Autism & iPads" on Facebook.



Please review the suitability of these Apps for your child's individual needs before purchasing them.

Take Home Messages

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- Motivation plays an important role in your child's willingness to actively engage in learning and communication across the day. Team work, collaborations and brainstorming can help work towards maintaining a high level of motivation!

Autism: Useful Readings

Books on Communication

- Frost, L.A. and Bondy, A.S. (2002). *The Picture Exchange Communication System: Training Manual* (2nd edn). Newark, DE: Pyramid Educational Products.
- Gray, C. (1994). *The Social Storybook*. Arlington, Tx: Future Horizons.
- Griffin, S. and Sandler, D. (2010). *Motivate to Communicate: 300 Games and Activities for Your Child with Autism*. London, UK: Jessica Kingsley Publishers.
- Hodgdon, A.L. (1995). *Visual Strategies for Improving Communication: Practical Supports for School and Home*. Troy, MI: Quirk Roberts.
- McClannahan, L.E. and Krantz, P.J. (1999). *Activity Schedules for Children with Autism: Teaching Independent Behaviors*. Bethesda, MD: Woodbine House.
- Quill, K. (2000). *Do, Watch, Listen, Say: Social and Communication Intervention for Children with Autism*. Baltimore, MD: Paul H. Brookes.
- Sussman, F. (1999). *More than Words: Helping Parents Promote Communication and Social Skills in Children with Autistic Spectrum Disorders*. Toronto, Ontario: The Hanen Centre.
- Sussman, F. (2006). *TalkAbility: People Skills for Verbal Children on the Autism Spectrum – A Guide for Parents*. Toronto, Ontario: The Hanen Centre.

Books on Sensory Issues

- Biel, L. and Peske, N. (2005). *Raising a Sensory Smart Child: The Definitive Handbook for Helping your Child with Sensory Integration Issues*. New York, NY: Penguin Group.
- Heller, S. (2002). *Too Loud Too Bright Too Fast Too Tight: What to Do if You are Sensory Defensive in an Overstimulating World*. New York, NY: HarperCollins.
- Kranowitz, C. (2003). *The Out of Sync Child has Fun: Activities for Kids with Sensory Processing Disorder*. York, NY: Penguin Group.
- Kranowitz, C. (2005). *The Out of Sync Child: Recognizing and Coping with Sensory Processing Disorder*. New York, NY: Penguin Group.
- Miller, L. (2006). *Sensational Kids: Hope and Help for Children with Sensory Processing Disorder (SPD)*. New York, NY: Penguin Group.
- Yack, E., Aquilla, P. and Sutton, S. (2002). *Building Bridges Through Sensory Integration: Therapy for Children with Autism and Other Pervasive Developmental Disorders* (2nd edn). Las Vegas, NV: Sensory Resources.

General Books on Autism

- Attwood, T. (2008). *The Complete Guide to Asperger's Syndrome*. London, UK: Jessica Kingsley Publishers.
- Bondy, A. and Sulzer-Azaroff, S. (2002). *The Pyramid Approach to Education in Autism*. Newark, DE: Pyramid Educational Products.
- Hodgdon, A.L. (1999). *Solving Behavior Problems in Autism: Improving Communication with Visual Strategies*. Troy, MI:
- Quirk Roberts. Maurice, C. (ed.), Green, G. and Luce, S. (co-eds) (1996). *Behavioral Intervention for Young Children with Autism: A Manual for Parents and Professionals*. Austin, Tx: ProEd.
- Notbohm, E. (2005). *Ten Things Every Child with Autism Wishes You Knew*. Arlington, Tx: Future Horizons.
- Offit, P. (2008). *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure*. New York, NY: Columbia University Press.
- Siegel, B. (2007). *Helping Children with Autism Learn: Treatment Approaches for Parents and Professionals*. New York, NY: Oxford University Press.
- Szatmari, P. (2004). *A Mind Apart: Understanding Children with Autism and Asperger Syndrome*. New York, NY: Guilford Press.

Acknowledgments



Thank you to the many children, adults and their families that make our jobs fun!

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