

SENSORY-BASED INTERVENTIONS

CHARACTERISTICS OVERVIEW CHART

Verbal Skills	Grade Levels	Cognitive Level	Areas Addressed
<input checked="" type="checkbox"/> Nonverbal	<input checked="" type="checkbox"/> PK	<input checked="" type="checkbox"/> Classic	<input type="checkbox"/> (Pre)Academic/Cognitive/Academic
<input checked="" type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Elementary	<input checked="" type="checkbox"/> High Functioning	<input type="checkbox"/> Adaptive Behavior/Daily Living
<input checked="" type="checkbox"/> Verbal	<input checked="" type="checkbox"/> Middle/High		<input checked="" type="checkbox"/> Behavior
			<input type="checkbox"/> Communication/Speech
			<input type="checkbox"/> Social/Emotional

BRIEF INTRODUCTION

A growing body of evidence is showing that young people with autism (AU) are challenged by a variety of sensory processing deficits (Case-Smith & Arbesman, 2008; Dunn, Myles, & Orr, 2002; Myles et al., 2004). Results of recent research indicate that children can be hyper- and/or hypo-sensitive to any one or more of the seven sensory systems of the body (tactile, vestibular, proprioception, visual, auditory, gustatory, and olfactory). These processing deficits are often linked to disruptive behaviors.

DESCRIPTION

Occupational therapists are trained to evaluate sensory processing capabilities and formulate individualized plans of therapeutic interventions that can then be carried out by teachers, parents, and other support personnel. It is important to remember that sensory processing interventions are still being examined for efficacy on young people with autism, so they should only be initiated under the supervision of trained professionals.

ILLUSTRATION 1: SLANT BOARD AND SEAT CUSHION TO HELP WITH SENSORY INTEGRATION



From Henry, S. Used with permission

ILLUSTRATION 2: MOVEMENT BREAK IN THE CLASSROOM



From Henry, S. Used with permission




ILLUSTRATION 3: STUDENT WRITING IN SALT TO WORK ON FINE-MOTOR AND TACTILE ISSUES


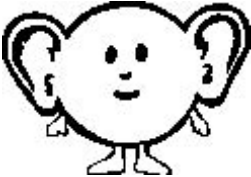




From Henry, S. Used with permission

Interventions that are frequently seen in the school setting include therapy balls as alternative seating, slant boards, weighted vests, gross-motor exercise or use of occupational therapy equipment in a supervised setting, and environmental modifications that allow students to be more successful in the classroom. Little controlled research has been conducted on sensory interventions and additional research is needed before definitive conclusions can be drawn.

The following table briefly describes the sensory areas, their location, their function, and interventions that an occupational therapist or other professional trained in sensory integration can provide.

Sensory Systems, Locations, Function, and Intervention Samples			
System	Location	Function	Sample Interventions
Tactile (Touch) 	Skin – density of cell distribution varies throughout the body. Areas of greatest density include mouth, hands, and genitals.	Provides information about the environment and object qualities (touch, pressure, texture, hard, soft, sharp, dull, heat, cold, pain).	Weighted vests, weighted blanket, resistive putty, handheld fidgets, holding something cold, writing in sand or salt.
Vestibular (Balance) 	Inner ear – stimulated by head movements and input from other senses, especially visual.	Provides information about where our body is in space, and whether or not we or our surroundings are moving. Tells about speed and direction of movement.	Jumping on a trampoline, hanging upside down on a jungle gym, sitting on a therapy ball, rocking on a rocker, swinging on a swing, twirling and spinning.
Proprioception (Body Awareness) 	Muscles and joints – activated by muscle contractions and movement.	Provides information about where a certain body part is and how it is moving.	Movement (i.e., handing out books, running an errand), exercise, weighted backpack, pushing a cart, wheelbarrow walk, seat cushion.

Sensory Systems, Locations, Function, and Intervention Samples (Continued)			
<p>Visual (Sight)</p> 	<p>Retina of the eye – stimulated by light.</p>	<p>Provides information about objects and persons. Helps us define boundaries as we move through time and space.</p>	<p>Sunglasses, cap with bill, highlighting pen, elevated slant board, lights turned off, study carrel.</p>
<p>Auditory (Hearing)</p> 	<p>Inner ear – stimulated by air/sound waves.</p>	<p>Provides information about sounds in the environment (loud, soft, high, low, near, far).</p>	<p>Earplugs, headphones, music, chimes, squeeze toys, books on tape, talking calculator.</p>
<p>Gustatory (Taste)</p> 	<p>Chemical receptors in the tongue – closely entwined with the olfactory (smell) system.</p>	<p>Provides information about different types of taste (sweet, sour, bitter, salty, spicy).</p>	<p>Eating crunchy foods, blowing bubbles, drinking cold water, playing a musical instrument, sucking a thick liquid through a straw.</p>
<p>Olfactory (Smell)</p> 	<p>Chemical receptors in the nasal structure – closely associated with the gustatory system.</p>	<p>Provides information about different types of smell (musty, acrid, putrid, flowery, pungent).</p>	<p>Scented pens or markers, scratch-and-sniff stickers, scented candles, nose plug.</p>

From Myles, B. S., Cook, K. T., Miller, N. E., Rinner, L., & Robbins, L. A. (2000). *Asperger Syndrome and sensory issues: Practical solutions for making sense of the world*. Shawnee Mission, KS: Autism Asperger Publishing Company. Used with permission.

BRIEF EXAMPLE

Chu, a 12-year-old with classic autism, often exhibited behavior challenges. A functional assessment determined that when he entered a novel environment these behaviors were likely to occur. Interventions included (a) music provided through headphones to help him remain calm and (b) a handheld fidget to serve as a distraction. Data showed that when Chu entered new environments with these interventions, his behavior challenges decreased.

SUMMARY

Sensory interventions initiated by an occupational therapist can impact the functioning of individuals with autism.

RESEARCH TABLE

Number of Studies	Ages (year)	Sample Size	Area(s) Addressed	Outcome
75*	2–adult	1028+	Weighted vests, therapy balls as alternative seating, sensory integration therapy, auditory integration therapy, Snoezelen multisensory environments, sensory and motor interventions	Mixed

*Note: This number includes the results from four reviews.

STUDIES CITED IN RESEARCH TABLE

- Murdock, L.C., Dantzler, J.A., Walker, A.N., & Wood, L.B. (2014). The effect of a platform swing on the independent work behaviors of children with autism spectrum disorder. *Focus on Autism and Other Developmental Disabilities*, 29(1), 50-61.

The purpose of this study was to evaluate the effects of the use of a platform swing on various behaviors of children with autism. The participants included 30 children (26 male, 4 female) all diagnosed with autism ranging in age from 2 ½–6 years old. The study took place at the private clinic the participants currently attended. The participants were randomly assigned to a treatment or control group. The researchers measured the following behaviors: on task/off task, engaged/disengaged, exhibiting/not exhibiting stereotypy and repetitive behavior and leaving the instructional area. Results revealed no statistical significances in either the treatment or control group for any of the measured behaviors. This data suggests that the use of a platform swing is not an effective intervention to enhance the desired behavior.
- Davis, T. N., Dacus, S., Strickland, E., Copeland, D., Chan, J.M., Blenden, K., Scalzo, R., Osborn, S., Wells, K., & Christian K. (2013). The effects of a weighted vest on aggressive and self-injurious behavior in a child with autism. *Developmental Neurorehabilitation*, 16(3), 210-215.

The purpose of this study was to analyze the effects of long-term use of a weighted vest for aggressive and self-injurious behaviors that were automatically maintained. The participant was a 9-year-old boy diagnosed with autism. The study took place in a classroom setting. Prior to the study, the participant had been wearing a weighted vest for the majority of the school day for approximately seven months with little cessation of behavior. Researchers used a multi-element design within an embedded reversal design to measure challenging

behavior in alternating vest and no vest conditions. Within each vest or no vest condition, the researchers ran typical functional analysis (FA) conditions and recorded the occurrence of challenging behavior. Results across all conditions showed an undifferentiated pattern of behavior. This suggests that the vest had no effect on behavior.

3. McGinnis, A.A., Blakely, R. Q., Harvey, A. C., Hodges, A.C., & Rickards, J. B. (2013). The behavioral effects of a procedure used by pediatric occupational therapists. *Behavioral Interventions, 28*, 48-57.
The purpose of this study was to evaluate the effect of deep pressure activities as reinforcers on the behavior of three individuals diagnosed with autism. The study took place in the private clinic the participants currently attended for ABA and occupational therapy services. Following a preference assessment for various deep pressure activities, participants were given access to their preferred activity contingent upon following through with a directive given by the therapist. Results of the study show that the latency between the directive given by the therapist and the participant following through decreased over the course of the study. This suggests that the contingency of receiving the deep pressure activities after following through with the directive could have served as a reinforcer for the participants, hence why the latency decreased over time (i.e., the behavior got faster). The researchers cautioned that practitioners should not use deep pressure activities contingent upon the occurrence of problem behavior and/or while problem behavior is occurring.
4. Lang, R., O'Reilly, M., Healy, O., Rispoli, M., Lydon, H., Streusand, W., & ... Giesbers, S. (2012). Sensory integration therapy for autism spectrum disorders: A systematic review. *Research in Autism Spectrum Disorders, 6*(3), 1004-1018.
Intervention studies involving the use of sensory integration therapy (SIT) were systematically identified and analyzed. Twenty-five studies were described in terms of: (a) participant characteristics, (b) assessments used to identify sensory deficits or behavioral functions, (c) dependent variables, (d) intervention procedures, (e) intervention outcomes, and (f) certainty of evidence. Overall, 3 of the reviewed studies suggested that SIT was effective, 8 studies found mixed results, and 14 studies reported no benefits related to SIT. Many of the reviewed studies, including the three studies reporting positive results, had serious methodological flaws. Therefore, the current evidence-base does not support the use of SIT in the education and treatment of children with autism spectrum disorders (ASD). Practitioners and agencies serving children with ASD that endeavor, or are mandated, to use research-based, or scientifically-based, interventions should not use SIT outside of carefully controlled research.
5. Li, K., Lou, S., Tsai, H., & Shih, R. (2012). The effects of applying game-based learning to webcam motion sensor games for autistic students' sensory integration training. *Turkish Online Journal of Educational Technology - TOJET, 11*(4), 451-459.
This study aims to explore the effects of applying game-based learning to webcam motion sensor games for autistic students' sensory integration training for autistic students. The research participants were three autistic students aged from six to ten. Webcam camera as the research tool was connected internet games to engage in motion sensor games. Through the motion sensor games, the researchers were able to collect data from

physiological monitoring, observation (including sensory integration observation and process observation), and interviews. The findings of the study reveal that: (1) the teacher and the participants possess positive attitude toward applying webcam motion sensor games to sensory integration training; (2) Webcam motion sensor games can enhance autistic students' learning interest; and (3) applying the game-based learning to webcam motion sensor games can improve the effect of autistic students' muscle training and endurance.

6. Schaaf, R. C., Benevides, T. W., Kelly, D., & Mailloux-Maggio, Z. (2012). Occupational therapy and sensory integration for children with autism: A feasibility, safety, acceptability and fidelity study. *Autism, 16*(3), 321-327.
Objective: To examine the feasibility, safety, and acceptability of a manualized protocol of occupational therapy using sensory integration principles for children with autism. Methods: Ten children diagnosed with autism spectrum disorder ages 4-8 years received intensive occupational therapy intervention using sensory integration principles following a manualized protocol. Measures of feasibility, acceptability and safety were collected from parents and interveners, and fidelity was measured using a valid and reliable fidelity instrument. Results: The intervention is safe and feasible to implement, acceptable to parents and therapist, and therapists were able to implement protocol with adequate fidelity. These data provide support for implementation of a randomized control trial of this intervention and identify specific procedural enhancements to improve study implementation.
7. Wallen, M., & Joosten, A. (2012). Weighted vests did not improve competing behaviours or joint attention of 2 year olds with Autism Spectrum Disorder (ASD). *Australian Occupational Therapy Journal, 59*(6), 468-470.
The author comments on a study "Weighted vests' effect on social attention for toddlers with Autism Spectrum Disorders (ASD)," by S. V. Leew and colleagues. The study findings suggests no treatment effects of the weighted vests in case of competing behaviours (CB) and joint attention (JA) in four toddlers with ASD. She highlights the advantages of the study which include inter-rater reliability, generalisation probes and blinding of the mothers and also states carefully monitoring of these vests.
8. Devlin, S., Healy, O., Leader, G., & Hughes, B. M. (2011). Comparison of behavioral intervention and sensory-integration therapy in the treatment of challenging behavior. *Journal of Autism Developmental Disorder, 41*, 1303-1320.
The objective of the current study was to compare the effects of sensory-integration therapy (SIT) and a behavioral intervention on rates of challenging behavior (including self-injurious behavior) in four children diagnosed with Autism Spectrum Disorder. For each participant, results demonstrated that the behavioral intervention was more effective than the sensory integration therapy in the treatment of challenging behavior.
9. Hodgetts, S., Magill-Evans, J., & Misiaszel, J. E. (2011). Weighted vests, stereotyped behaviors and arousal in children with autism. *Journal of Autism Developmental Disorder, 41*, 805-814.
Six children with AU were selected for this study involving the impact of weighted vests on stereotyped behaviors. Weighted vests did not decrease motoric stereotyped behaviors in any participant. Verbal stereotyped behaviors decreased in one participant. Weighted vests did not decrease heart rate. Heart rate increased in one participant.

10. Pfeiffer, B. A., Koenig, K., Kinnealey, M., Sheppard, M., & Henderson, L. (2011). Effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *Research Scholars Initiative, 65*, 76-85.
This randomized controlled study examined the impact of a sensory as compared to a motor intervention for individuals with AU. Results identified significant positive changes in for both groups; more significant changes occurred in the SI group, and a significant decrease in autistic mannerisms occurred in the SI group.
11. Bonggat, P.W. & Hall, L.J. (2010). Evaluation of the effects of sensory integration-based intervention by a preschool special education teacher. *Education and Training in Autism and Developmental Disabilities, 45(2)*, 294-302.
This study compared rates of time on task for three elementary school students (one with ASD) between a sensory-integration condition (being brushed using a deep-pressure technique) and an attention condition where no sensory events were provided. There were no differences in rates of on task behavior between conditions for any of the three participants.
12. Fava, L. & Strauss, K. (2010). Multi-sensory rooms: Comparing effects of the Snoezelen and the stimulus preference environment on the behavior of adults with profound mental retardation. *Research in Developmental Disabilities, 31*, 160-171.
The purpose of this study was to determine the effects of exposure to two kinds of multi-sensory room and experience on three groups of participants – one with severe ASD. While the Snoezelen room was reported to lead to reduced aggression and stereotypic behavior for the three ASD participants who experienced it, that conclusion cannot be supported since there was no baseline measurement of those behaviors collected and the participants did not experience either the other sensory room OR an appropriate control condition with no sensory room present which would have allowed a meaningful comparison of behaviors across different settings.
13. Reichow, B., Barton, E.E., Sewell, J.N., Good, L., & Wolery, M. (2010). Effects of weighted vests on the engagement of children with developmental delays and autism. *Focus on Autism and Other Developmental Disabilities, 25(1)*, 3-11.
This study investigated the effects of a weighted vest on the engagement levels of three children with ASD (4, 5, & 5). Using an alternating-treatments design, no difference in engagement was seen between conditions in which the vest was present or absent.
14. Wuang, Y., Wang, C., Huang, M., & Su, C. (2010). The effectiveness of simulated developmental horse-riding program in children with autism. *Adapted Physical Activity Quarterly, 27*, 113-126.
This study reports the effects of a 20-week-long program of simulated horseback riding on the motor and sensory skills of 60 children with ASD. During the 20-week treatment children were rated daily on motor function and sensory integration using survey instruments. While in the treatment condition the authors report improved motor and sensory function but do not provide any direct behavioral measures to support the survey results. In addition, no measures of academic, social, or daily living skills were reported, so it is impossible to determine if the intervention had any impact on functional skills needed by the children.
15. Cox, A. L., Gast, D. L., Luscre, D., & Ayers, K. M. (2009). The effects of weighted vests on appropriate in-seat behaviors of elementary age-students with autism and severe-profound intellectual disabilities. *Focus on Autism and Other Developmental Disabilities, 24(17)*, 17-26.

The purpose of this study was to evaluate the impact of weighted vests on the amount of time three elementary-age students with autism, intellectual disabilities, and sensory processing challenges engaged in appropriate in-seat behavior. Because weighted vests did not have an effect on appropriate in-seat behavior for any participant, a second experiment was conducted. Noncontingent reinforcement (NCR) was assessed and had positive effect on the participants' in-seat behavior.

16. Nwora, A. J., & Gee, B. M. (2009). A case study of a 5-year-old with pervasive developmental disorders-not otherwise specified using sound-based interventions. *Occupational Therapy International, 16*(1), 25-43.
The aim of this study was to determine the efficacy of The Listening Program (TLP), an auditory integration program, in treating a child with PDD-NOS. Using a single-subject case study design, one child with PDD-NOS was administered a 20-week TLP intervention. Results of the study indicated improved behavior and sensory tolerance, receptive/expressive listening and language, motor skills, and behavioral/social adjustment at the post-intervention assessment.
17. Case-Smith, J., & Arbesman, M. (2008). Evidence based review on interventions for autism used in occupational therapy. *The American Journal of Occupational Therapy, 62*(4), 416-429.
This review of literature examined sensory-based interventions and concludes that sensory interventions are philosophically aligned with interventions for individuals with autism, including pivotal response training, social interventions, and behavioral interventions.
18. Morrison, E. (2007). A review of research on the use of weighted vests with children on the autism spectrum. *Education, 127*, 323-327.
While many occupational therapists advocate the use of weighted vests, there is little evidence for the effectiveness of this intervention or for the proper procedures associated with the use of a weighted vest. Three empirical investigations that included twelve students with autism showed that the use of weighted vests for young people with autism is primarily based on the therapist's observation and experience.
19. Schilling, D. L., & Schwartz, I. (2004). Alternative seating for young children with autism spectrum disorder: Effects on classroom behavior. *Journal of Autism and Developmental Disorders, 34*, 4, 423-432.
This study was conducted with four preschool-age children with autism who were allowed to sit on therapy balls while working in the classroom. Each student could move or use the ball as they saw fit, in some cases bouncing vigorously and in others rocking back and forth gently. Therapy balls were recommended to supplement the educational curriculum, not replace it. Students made improvements in on-task behaviors and engagement.
20. Baranek, G. (2002). Efficacy of sensory and motor interventions for children with autism. *Journal of Autism and Developmental Disorders, 32*, 397-422.
This review summarized the sensory and motor difficulties often manifested in autism and evaluated the scientific basis of 29 studies of 757 individuals with autism on sensory and motor interventions used with this population. Recommendations for educational settings included developmentally appropriate sensory-motor experiences, consultation with knowledgeable professionals, environmental modifications based on documented sensory processing or motor deficits, individualized approaches to application of interventions, and

integration of interventions into daily routines in a natural setting. The authors suggest a conservative approach to sensory-based interventions by trained professionals using accepted data collection and evaluation methods.

REFERENCES

- Baranek, G. (2002). Efficacy of sensory and motor interventions for children with autism. *Journal of Autism and Developmental Disorders*, 32, 397-422.
- Bonggat, P.W. & Hall, L.J. (2010). Evaluation of the effects of sensory integration-based intervention by a preschool special education teacher. *Education and Training in Autism and Developmental Disabilities*, 45(2), 294-302.
- Case-Smith, J., & Arbesman, M. (2008). Evidence based review on interventions for autism used in occupational therapy. *The American Journal of Occupational Therapy*.
- Davis, T. N., Dacus, S., Strickland, E., Copeland, D., Chan, J.M., Blenden, K., Scalzo, R., Osborn, S., Wells, K., & Christian K. (2013). The effects of a weighted vest on aggressive and self-injurious behavior in a child with autism. *Developmental Neurorehabilitation*, 16(3), 210-215.
- Devlin, S., Healy, O., Leader, G., & Hughes, B. M. (2011). Comparison of behavioral intervention and sensory-integration therapy in the treatment of challenging behavior. *Journal of Autism Developmental Disorder*, 41, 1303-1320.
- Dunn, W., Myles, B. S., & Orr, S. (2002). Sensory processing issues associated with Asperger Syndrome: A preliminary investigation. *The American Journal of Occupational Therapy*, 56(1), 97-102.
- Fava, L. & Strauss, K. (2010). Multi-sensory rooms: Comparing effects of the Snoezelen and the stimulus preference environment on the behavior of adults with profound mental retardation. *Research in Developmental Disabilities*, 31, 160-171.
- Hodgetts, S., Magill-Evans, J., & Misiaszel, J. E. (2011). Weighted vests, stereotyped behaviors and arousal in children with autism. *Journal of Autism Developmental Disorder*, 41, 805-814.
- Lang, R., O'Reilly, M., Healy, O., Rispoli, M., Lydon, H., Streusand, W., & Giesbers, S. (2012). Sensory integration therapy for autism spectrum disorders: A systematic review. *Research In Autism Spectrum Disorders*, 6(3), 1004-1018.
- Li, K., Lou, S., Tsai, H., & Shih, R. (2012). The effects of applying game-based learning to webcam motion sensor games for autistic students' sensory integration training. *Turkish Online Journal of Educational Technology - TOJET*, 11(4), 451-459.
- McGinnis, A.A., Blakely, R. Q., Harvey, A. C., Hodges, A.C., & Rickards, J. B. (2013). The behavioral effects of a procedure used by pediatric occupational therapists. *Behavioral Interventions*, 28, 48-57.

- Morrison, E. (2007). A review of research on the use of weighted vests with children on the autism spectrum. *Education, 127*, 323-327.
- Murdock, L.C., Dantzler, J.A., Walker, A.N., & Wood, L.B. (2014). The effect of a platform swing on the independent work behaviors of children with autism spectrum disorder. *Focus on Autism and Other Developmental Disabilities, 29*(1), 50-61.
- Myles, B. S., Hagiwara, T., Dunn, W., Rinner, L., Reese, M., Huggins, A., & Becker, S. (2004). Sensory issues in children with Asperger Syndrome and autism. *Education and Training in Developmental Disabilities, 3*(4), 283-290.
- Pfeiffer, B. A., Koenig, K., Kinnealey, M., Sheppard, M., & Henderson, L. (2011). Effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *Research Scholars Initiative, 65*, 76-85.
- Reichow, B., Barton, E.E., Sewell, J.N., Good, L., & Wolery, M. (2010). Effects of weighted vests on the engagement of children with developmental delays and autism. *Focus on Autism and Other Developmental Disabilities, 25*(1), 3-11.
- Rodger, S., Ashburner, J., & Hinder, E. (2012). Sensory interventions for children: Where does our profession stand? *Australian Occupational Therapy Journal, 59*(5), 337-338.
- Schaaf, R. C., Benevides, T. W., Kelly, D., & Mailloux-Maggio, Z. (2012). Occupational therapy and sensory integration for children with autism: A feasibility, safety, acceptability and fidelity study. *Autism, 16*(3), 321-327.
- Schilling, D. L., & Schwartz, I. (2004). Alternative seating for young children with autism spectrum disorder: Effects on classroom behavior. *Journal of Autism and Developmental Disorders, 34*, 4, 423-432.
- Wallen, M., & Joosten, A. (2012). Weighted vests did not improve competing behaviours or joint attention of 2 year olds with Autism Spectrum Disorder (ASD). *Australian Occupational Therapy Journal, 59*(6), 468-470.
- Wuang, Y., Wang, C., Huang, M., & Su, C. (2010). The effectiveness of simulated developmental horse-riding program in children with autism. *Adapted Physical Activity Quarterly, 27*, 113-126.
- Zimmer, M., & Desch, L. (2012). Sensory integration therapies for children with developmental and behavioral disorders. *Pediatrics, 129*(6), 1186-1189.

ORGANIZATIONS RECOGNIZING INTERVENTION AS EVIDENCE BASED

Centers for Medicaid and Medicare Services: <http://www.cms.gov>

National Autism Center: <http://www.nationalautismcenter.org>

National Professional Development Center on Autism Spectrum Disorders:
<http://autismpdc.fpg.unc.edu>

RESOURCES AND MATERIALS

These materials all provide information on how to address sensory processing needs in a student's program.

- Kranowitz, C. S., Szklut, S., Balzer-Martin, L., Haber, E., & Sava, D. I. (2002). *Answers to question teachers ask about sensory integration: Forms, checklists, and practical tools for teachers and parents*. Las Vegas, NV: Sensory Resources.
- Oden, A. (2006). *Ready bodies: Learning minds*. Spring Branch, TX: Ready Bodies, Learning Minds.
- Williams, M. S., & Shellenberger, S. (1996). *How does your engine run? A leader's guide to self-regulation*. Albuquerque, NM: Therapy Works.
- Williams, M. S., & Shellenberger, S. (2001). *Take five: Staying alert at home and school*. Albuquerque, NM: Therapy Works.

GENERAL RESOURCES

- Autism Internet Modules (AIM) www.autisminternetmodules.org. The Autism Internet Modules were developed with one aim in mind: to make comprehensive, up-to-date, and usable information on autism accessible and applicable to educators, other professionals, and families who support individuals with autism spectrum disorders (ASD). Written by experts from across the U.S., all online modules are free, and are designed to promote understanding of, respect for, and equality of persons with ASD.
- Evidence-Based Practice Briefs
<http://autismpdc.fpg.unc.edu/content/briefs>
- Indiana Resource Center for Autism (IRCA) <http://www.iidc.indiana.edu/index.php?pagelid=32/>. The Indiana Resource Center for Autism staff's efforts are focused on providing communities, organizations, agencies, and families with the knowledge and skills to support children and adults in typical early intervention, school, community, work, and home settings.
 - IRCA Articles: <http://www.iidc.indiana.edu/index.php?pagelid=273>
- Texas Statewide Leadership for Autism www.txautism.net. The Texas Statewide Leadership for Autism in conjunction with the network of Texas Education Service center with a grant from the Texas Education Agency has developed a series of free online courses in autism. Please check the training page, <http://www.txautism.net/trainings>, for updated lists of courses, course numbers, and registration information.

- Current courses include the following:
 - ❖ Asperger Syndrome 101
 - ❖ Augmentative and Alternative Communication and the Autism Spectrum
 - ❖ Autism for the General Education Teacher
 - ❖ Autism 101: Top Ten Pieces to the Puzzle
 - ❖ Classroom Organization: The Power of Structure for Individuals with ASD
 - ❖ Communication: The Power of Communication for Individuals with ASD
 - ❖ Futures Planning for Students with Autism Spectrum Disorder
 - ❖ Navigating the Social Maze: Supports and Interventions for Individuals with ASD
 - ❖ Solving the Behavior Puzzle: Making Connections for Individuals with ASD
- Strategies for Working with Students with Autism in the General Education Setting:
 - ❖ Strategy 1: Understanding Students with Autism Spectrum Disorders.
 - ❖ Strategy 2: Get to Know the Individual Student.
 - ❖ Strategy 3: Create Predictability.
 - ❖ Strategy 4: Develop Clear Expectations, Part 1 -- Social and Behavioral.
 - ❖ Strategy 5: Develop Clear Expectations, Part 2 --Academic.
 - ❖ Strategy 6: Create a Positive Learning Community.
 - ❖ Strategy 7: Promote Positive Peer Interaction.
 - ❖ Strategy 8: Use Instructional Strategies That Promote Successful Learning.
 - ❖ Strategy 9: Use Behavioral Strategies That Promote Success Learning.
 - ❖ Strategy 10: Develop a Plan to Address Challenging Behavior.
 - ❖ Strategy 11: Borrow from the Special Educator's Toolbox.
 - ❖ Strategy 12: Respect Each Student's Dignity and Need for Autonomy
- School-Based Applied Behavior Analysis Programs for Students with Autism Spectrum Disorders:
 - ❖ Course 1: Introduction to Autism Spectrum Disorders, Evidence-Based Practices, and the Basics of Applied Behavior Analysis (45 minutes)
 - ❖ Course 2: Reinforcement and Extinction (1.5 hours)
 - ❖ Course 3: Challenging Behavior Assessment and Treatment (1 hour)
 - ❖ Course 4: Communication and Social Skills Training (1 hour)
 - ❖ Course 5: Instructional Strategies (4 hours)
 - ❖ Course 6: Classroom and Environmental Arrangement (1.5 hours)