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# iLs Research & Supporting Data

The following list is comprised of iLs-specific studies conducted by third party researchers, clinicians and educators. Please visit [www.integratedlistening.com/research](http://www.integratedlistening.com/research) to read and download the complete studies.

## **FOCUS SYSTEM**

### ***A Pilot Study of Integrated Listening Systems for Children with Sensory Processing Problems***

***Sarah A. Schoen, PhD, OTR, Lucy J. Miller, PhD, OTR, and Jillian Sullivan, PhD***

***Journal of Occupational Therapy: Schools and Early Intervention, 8: 1-21 2015***

Abstract: This study explores the effects of iLs on individualized parent goals for children with sensory processing impairments. The 40-session iLs program was implemented at home and in clinic over a 3-month period. Important and clinically meaningful gains were achieved by all participants in both home and educationally-related goals. Individualized goal achievement was supported by gains in standardized measures of behavior and adaptive functioning. Changes in physiological arousal (measured by EDA – electrodermal activity) suggest the iLs program is impacting underlying regulation mechanisms that may be contributing to the observed behavioral changes. Behavioral changes included increased relaxation, fewer meltdowns and a generally calmer disposition for participants whose arousal decreased.

### ***Using the Focus System in a Sylvan Learning Center for Students with Learning Differences,***

***Ann Smith, Sylvan Center Owner, Highlands Ranch, Colorado, 2016***

Abstract: Data on 44 students was collected to measure the effect of the iLs Focus System on students with learning difficulties. The Focus System was used before beginning the Sylvan program. Pre- and post- assessments include Sylvan's math and reading tests and the iLs Measure of Foundational Abilities (MFA). Results showed that, on average, students' math and reading scores improved by approximately 1.2 years after the 40-hour Focus program. Average improvements in the MFA categories included: Social/Emotional → 54%; Auditory/Language → 48%; Organization, Attention & Cognition → 53%; Motor Skills → 37%; and Sensory Processing → 34%.

### ***Evaluating the Benefits of the iLs Focus System for Children with Cochlear Implants and Other Hearing***

***Devices at the Jean Weingarten Peninsula Oral School for the Deaf, Redwood City, CA, Ann***

***Brownstone, MS, OTR/L, SWC***

Abstract: Eight students from the Jean Weingarten Oral School for the Deaf participated in a pilot study of the effectiveness of Focus System programs in improving language skills, auditory processing, gross/fine/perceptual motor skill development and greater self confidence in children with significant hearing loss or impairment. A multidisciplinary team implemented and evaluated the program and found gains across OT, SLP and Audiology disciplines (using Peabody Developmental Motor Scales, II, Beery-Buktenica Developmental Test of Visual-Motor Integration, 6th Edition, Test of Auditory Comprehension, ROWPVT and EOWPVT).

### ***An Investigation to Evaluate the Benefits of the Integrated Listening Systems in Primary/Early Elementary Classrooms (Kindergarten-Third Grade): The Case of Valley View Academy in Northern California, Jeannie Dubitsky, Ed. D., University of California, Davis, 2014***

Abstract: Ten students were chosen for the case study to compare pre and post test scores, survey

results and interview data. Results showed similarities and differences among the students regarding physical, academic, social and emotional development after the intervention. Students showed improvement in all areas evaluated after experiencing the iLs program.

***Early Intervention: A Longitudinal Study of Reading and Reading Related Achievement of Students in Kindergarten Through Second Grade Enrolled in the Alpha Program,***

***J. Anne Calhoun, Ph. D. Educational Psychology, College of Education, University of New Mexico***

Abstract: A controlled study involving 64 K-2 at risk students was conducted by U of New Mexico researcher Anne Calhoun, Ph.D. Students participated in the Alpha Program,\* a program combining iLs with art therapy (see following page for details). The average improvement in reading over the 3-month intervention was 2 years. *“Taken as a whole, this analysis indicates that the students in the experimental group have improved in all categories associated with reading. This improved achievement is significantly greater (more meaningful) than the improvements of the control group peers. Overall the picture presented of the students in ALPHA is one that shows immense growth in cognitive, academic, and psychological areas.”* J. Anne Calhoun, Ph. D.

***School Pilot Study, Denver Area School Pilot Study, 2009***

Abstract: A variety of normed, standardized tests were used to assess 20 children with learning difficulties before and after iLs programs. The report includes each child’s pre- and post-program test scores as well as teacher and parent comments. Teachers involved in the program reported “significant improvement” in 19 of the 20 children. The criteria of “significant improvement” includes at least one of the following: being transitioned from special education to regular education, having an IEP removed or overcoming a substantial emotional/behavioral challenge to successful classroom performance.

***iLs Home Program Autism Study, Theresa May Benson, PhD, OTR/L***

Abstract: Study on the effect of the iLs home program on 18 children diagnosed with autism. The purpose of this multi-site intervention study was to examine the effectiveness of the iLs Focus home program with children 4 to 8 years of age with Autism Spectrum Disorder (ASD). This mixed-methods study (single-case series with pre/post-testing) of 18 children with ASD supported outcome findings of a previous iLs practitioner survey on the perceived effectiveness of the iLs program.

Results found significant gains across multiple subjective and objective outcome measures in areas of:

- social skills and emotional regulation
- quantity and quality of atypical and problem behaviors including behavior during treatment
- number and severity of autistic behaviors; and overall functional adaptive behavior skills
- visual, fine and gross motor skills including body functions and motor planning
- auditory listening skills

Overall, the results demonstrated that the effects of the iLs program were significant, of generally large magnitude, easily observable, and sustained throughout the post-intervention baseline. The iLs home program was thus supported as an effective intervention for improving multiple areas of functioning in children with autism spectrum disorder.

***School Pilot Study, Denver Area School Pilot Study, 2009***

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***Survey of iLs Professionals Using iLs with Autism, Spiral Foundation, Boston, MA***

Summary: Survey reviewing therapists' experience using iLs with over 1300 children on the autism spectrum; results are in 24 outcome categories

***Auditory Processing Disorder, Julia Harper, PhD, OTR/L and Aimee Levine Weiner, Aud; published in Advance OT Magazine***

Abstract: Therapeeds, a private clinic in Ft. Lauderdale, Florida, reports the results of 29 children diagnosed with APD who completed the Therapeeds' H.O.P.E. Sensory & Motor Program combined with iLs' receptive and expressive programs. The iLs equipment used was a combination of the iLs Pro, Focus and Expressive Language Program. Among the pre- and post-program tests are the following:

**Vestibular:** Pre-testing indicated 0 of the 29 children had intact vestibular processing skills measured by the PrN and functional skills. Post-testing showed all 29 in normal range.

**Ocular Motor:** Pre-testing showed that 28 of the 29 demonstrated ocular-motor deficits in the areas of visual pursuits, saccades and convergence/divergence skills. Post-intervention, 25 of the 29 demonstrated intact ocular motor skills.

**All Auditory Processing Skills:** Post-intervention, 22 of the 29 children had auditory processing skills that were completely within normal limits *in every area*.

**Medications:** Seven of 29 children began this therapy on medication for attention-related concerns. By the end of the program, the medications for all 7 had all been discontinued.

**ABR Binaural Summation:** Pre-intervention ABR tests showed all 29 children had little difference between listening with one ear and listening with both ears (binaural summation). Post-intervention, all 29 tested in the normal range.

## **SAFE AND SOUND PROTOCOL (SSP)**

Based on Dr. Stephen Porges' Polyvagal Theory, the SSP is derived from nearly four decades of research on the relationship between the autonomic nervous system and social-emotional processes. It is designed to stimulate nervous system regulation by exercising and systematically challenging the neural network associated with listening by using specifically processed music. The papers and some of the clinical trials refer to the SSP as the Listening Project Protocol, its working title during the research phase.

***Porges, S. W., Bazhenova, O. V., Bal, E., Carlson, N., Sorokin, Y., Heilman, K. J., Cook, E. H., ... Lewis, G. F. (2014). Reducing auditory hypersensitivities in autistic spectrum disorder: preliminary findings evaluating the listening project protocol. *Frontiers in pediatrics, 2, 80. doi:10.3389/fped.2014.00080****

Summary: In this peer-reviewed study, children with Autism Spectrum Disorder (ASD) who used an early version of the SSP experienced significant improvements in behavioral organization, listening, spontaneous speech and hearing sensitivities. Two trials validated these findings. The first tested the difference between receiving the intervention while playing calmly and simply wearing the headphones (with no sound or music). The second tested the difference between using the intervention with the specially treated music and with untreated music. Despite being "blind" to which group their child was in, parents of the children who received the full intervention in each trial reported significant improvements in the domains of hearing sensitivities and emotional control.

***Porges, S. W., Macellaio, M., Stanfill, S. D., McCue, K., Lewis, G. F., Harden, E. R., Handelman, M., Denver, J., Bazhenova, O. V., ... Heilman, K. J. (2012). Respiratory sinus arrhythmia and auditory processing in autism: modifiable deficits of an integrated social engagement system?. *International journal of psychophysiology : official journal of the International Organization of Psychophysiology, 88(3), 261-70.****

Summary: In a second peer-reviewed study, higher functioning individuals with ASD were tested using an early version of the SSP. Assessments included parent questionnaires, an auditory processing test and heart rate monitoring. The study showed that auditory processing and state regulation improved following the intervention.

### **Current Clinical Trials**

There are five clinical trials evaluating the effectiveness of the SSP with diverse populations demonstrating various features.

#### ***The Listening Project: Tuning into Change***

Funded by the Australian Childhood Foundation (ACF) to evaluate the effectiveness of the SSP in children with a trauma history.

#### ***The Listening Project at the ADD Centre and Biofeedback Institute of Toronto***

A research project will be conducted at the ADD ("Attention Deficit Disorder") Centre and Biofeedback Institute of Toronto to evaluate the feasibility of the Safe & Sound Protocol (SSP) intervention in individuals with difficulties with autonomic and/or behavioral regulation.

***Optimizing the Social Engagement System in Prader-Willi Syndrome: Insights from the Polyvagal Theory***

To demonstrate the effectiveness of the Safe & Sound Protocol (SSP) in decreasing the atypical features of the SES in adolescents with PWS.

***Examining the Effects of Processed Music on Chronic Pain***

To examine whether the Safe & Sound Protocol (SSP), a non-invasive audio intervention, can be effective for reducing chronic pain in a sample of older adults and whether increased regulation via the autonomic nervous system accounts for the decrease in pain if the intervention is successful.

***Evaluating the Effectiveness of Home-based SSP on Individuals With PWS***

To demonstrate the effectiveness of the Safe and Sound Protocol (SSP) on improving social and regulation behaviors in individuals with PWS. In addition, to evaluate a new methodology for collecting and evaluating vocal samples for analyses of prosody, one of the indices of the functioning of the SES.

## **DREAMPAD**

***Gutman, S. A., Gregory, K. A., Sadlier-Brown, M. M., Schlissel, M. A., Schubert, A. M., Westover, L. A., & Miller, R. C. (2017). Comparative Effectiveness of Three Occupational Therapy Sleep Interventions: A Randomized Controlled Study. OTJR: Occupation, Participation and Health, 37(1), 5–13.***

***<https://doi.org/10.1177/1539449216673045>***

Summary: Conducted by Dr. Sharon Gutman at Columbia University Medical Center, this randomized, controlled study of 29 adults with light sleep difficulties compared three non-pharmacological sleep interventions: the Dreampad pillow with Intrasound Technology, an audio breathing program called iRest™, and sleep hygiene (sleep improvement behavior such as reducing food, alcohol and screen time before bed). The most statistically significant results of the study were the reduction in night time awakenings experienced by Dreampad users. Waking during the night is the number one symptom reported by those with stress related sleep problems as well as the number one problem reported by the study participants.

***Schoen, Sarah A.; Man, Sheryl; and Spiro, Chelsea (2017) "A Sleep Intervention for Children with Autism Spectrum Disorder: A Pilot Study," The Open Journal of Occupational Therapy: Vol. 5: Iss. 2, Article 3.***

Abstract: This study examined the immediate, short-term effects of Integrated Listening Systems' (iLS) Dreampad on the sleep behaviors of children with Autism Spectrum Disorder (ASD). In addition, this study examined the effects of changes in sleep patterns on parent and family measures of stress and quality of life.

***Measuring the Effect of the iLS Dreampad with Ten Veterans Diagnosed with Post-Traumatic Stress Disorder (PTSD) , Jan C. Nelson, OTR, MA***

Abstract: Study conducted with 10 veterans suffering from PTSD. Each participant recorded their sleep habits and pain symptoms for two weeks prior to using the Dreampad and two weeks while using the Dreampad. Their journals included usage, sleep habits and other comments. Study participants were interviewed after initial Dreampad use and again three months later. All participants saw significant sleep changes after use of the Dreampad.

***Preliminary Study: The Effect Of The iLS Dreampad On Children With ADHD And Sleep-Related Difficulties, The Hallowell Center, New York***

Abstract: This clinical program was conducted in collaboration with the Hallowell Center in New York to determine the feasibility and potential benefits of using the Integrated Listening Systems (iLS) Dreampad for sleep problems in children with Attention Deficit Hyperactivity Disorder (ADHD). The results were quite promising for future study. All children showed a decrease in sleep problems as noted in response to the Child's Sleep Habits Questionnaire (CSHQ). All of the parents reported a positive reaction to using the Dreampad and were interested in continuing its use. Many said their children were going to bed/sleep more quickly, sleeping more soundly, waking up more easily and generally seemed more relaxed.

***iLS Dreampad Heart Rate Variability (HRV) Study, Kelly L. Olson, Ph.D., Director, Clinical Research and Development, SleepImage***

Abstract: This study measures the effect of the Dreampad on the parasympathetic nervous system. Ten of twelve adults showed significant PNS engagement within 5 minutes of using the Dreampad.

## HISTORICAL RESEARCH ON MUSIC, MOVEMENT AND LEARNING

The following research studies do not specifically measure iLs as an intervention; rather, they are supportive of the general iLs methodology integrating music, movement and language to improve brain function.

***The Neurochemistry of Music, Mona Lisa Chanda, Daniel J. Levitin, Trends in Cognitive Sciences, Volume 17, Issue 4, 179-193, 1 April 2013***

Abstract: Music is used to regulate mood and arousal in everyday life and to promote physical and psychological health and well-being in clinical settings. This meta-analysis evaluates the evidence that music improves health and well-being through the engagement of neurochemical systems for (i) reward, motivation, and pleasure; (ii) stress and arousal; (iii) immunity; and (iv) social affiliation.

***Music and Pleasure Motivation, V. Menon and D.J. Levitin, 2005***

Importance: shows fMRI images of subjects listening to classical music demonstrate that music evokes responses in areas of the brain involved in positive reward, motivation, sleep, mood, attention and learning.

***Measuring Musical Timing Skills. Overy, K., Nicolson, R.I., Fawcett, A.J., Clarke, E.F., 2003. Dyslexia 9, 18-36***

Importance: Study connecting dyslexia with timing challenges

***From Timing Deficits to Musical Intervention Overy, K., 2003. Ann. Ny Acad. Sci. 999, 497-505***

Importance: Study finds that classroom music lessons had a positive effect on both phonologic and spelling skills, but not reading skills, among dyslexic children

***Music & Fatigue, Jing L, Xudong W.; J Sports Med Phys Fitness. 2008 Mar; 48(1):102-6***

Importance: Study on 30 college students in which music significantly reduce exercise-induced fatigue. "Conclusion: The results suggest that relaxing music has significantly positive effects on the rehabilitation of cardiovascular, central, musculoskeletal and psychological fatigue and the promotion of the regulatory capability of the kidneys."

***Music & Visual Recognition, Pavlygina RA, Frolov MV, Davydov VI, Milovanova GB, Sulimov AV.; Neurosci Behav Physiol. 1999 Neuroscience of Behavior and Physiology, Mar-Apr;29(2):197-204***

Recognition of visual images in a rich sensory environment: musical accompaniment. Importance: According to a report in the journal Neuroscience of Behavior and Physiology, a person's ability to recognize visual images, including letters and numbers, is faster when either rock or classical music is playing in the background

***Music & Insomni, Lai HL, Good M.; J Adv Nurs. 2005 Feb, 49(3):234-44***

Importance: Randomized, controlled study on 60 adults aged 60-83 with difficulty sleeping. Listening to 45-minutes of music before bed resulted in significantly better sleep quality in the experimental group, as well as significantly better programs of sleep quality: better perceived sleep quality, longer sleep duration, greater sleep efficiency, shorter sleep latency, less sleep disturbance and less daytime dysfunction. Sleep improved weekly, indicating a cumulative dose effect.

**Music & Reduced Stress, Labbé E, Schmidt N, Babin J, Pharr M.; Appl Psychophysiol Biofeedback. 2007 Dec; 32(3-4):163-8. Coping with stress: the effectiveness of different types of music**

Importance: Results indicate listening to self-select or classical music, after exposure to a stressor, significantly reduces negative emotional states and physiological arousal.

**The influence of Mozart's music on brain activity in the process of learning, Jausovec N, Jausovec K, Gerlic I., Clin Neurophysiol. 2006 Dec; 117(12):2703-14**

Importance: Controlled study involving 56 individuals concludes that Mozart's music, by activating task-relevant brain areas, enhances the learning of spatio-temporal rotation tasks.

**Music & Spatial Temporal Reasoning, Sarnthein J, vonStein A, Rappelsberger P, Petsche H, Rauscher FH, Shaw GL, Neurol Res. 1997 Apr;19(2):107-16. Persistent patterns of brain activity: an EEG coherence study of the positive effect of music on spatial-temporal reasoning**

Importance EEG showing the spatial-temporal area of the brain looking at reasoning while patients are listening to music.

**Music Training & Mathematical Ability, Schmithorst VJ, Holland SK., Neurosci Lett. 2004 Jan 16;354(3):193-6. The effect of musical training on the neural correlates of math processing: a functional magnetic resonance imaging study in humans**

Importance: fMRI imaging leads to hypothesis that the correlation between musical training and math proficiency may be associated with improved working memory performance and an increased abstract representation of numerical quantities.

**Music & Spatial-Temporal Reasoning, Rauscher FH, Shaw GL, Levine LJ, Wright EL, Dennis WR, Newcomb RL, Neurol Res. 1997 Feb;19(1):2-8. Music training causes long-term enhancement of preschool children's spatial-temporal reasoning**

Importance: Controlled study involving 78 schoolchildren; suggests that music training produces long-term modifications in underlying neural circuitry in regions not primarily concerned with music, such as mathematics and science, which draw heavily upon spatial-temporal reasoning.

**Motor Development And Motor Resonance Difficulties, Autism Frontiers in Integrative Neuroscience, 24 April 2013, Joseph P. McCleery\*, Natasha A. Elliott, Dimitrios S. Sampanis and Chrysi A. Stefanidou**

Summary: Research suggests that a subset of children with autism experience notable difficulties and delays in motor skills development, and that a large percentage of children with autism experience deficits in motor resonance. These motor-related deficiencies, which evidence suggests are present from a very early age, are likely to negatively affect social-communicative and language development in this population. Here, we review evidence for delayed, impaired, and atypical motor development in infants and children with autism. New studies involving a focus on motor skills alongside speech and language intervention are showing promising preliminary results.

**Brain Stem Dysfunction & Autism, Ornitz EM, Atwell CW, Kaplan AR, Westlake JR.; 1985, Arch Gen Psychiatry, Oct;42(10):1018-25; Brain-stem dysfunction in autism. Results of vestibular stimulation**

Importance: brain stem dysfunction in autistic children shown using a vestibular test.

**Cerebellum & Attention, Akshoomoff, N.A., Courchesne, E., Journal Cog Neuroscience, Fall 1994, Vol. 6, No.4, pp 388-399; ERP Evidence for a Shifting Attention Deficit in Patients with Damage to the**

### **Cerebellum**

Importance: study shows connection between cerebellum and ability to shift attention between visual and auditory stimuli.

### ***Cerebellum, Attention & Autism, Courchesne, E., Townsend, J., Akshoomoff, N.A., Saitoh, O., et.al; 1994, Vol. 108 Behavioral Neuroscience; Impairment in Shifting Attention in Autistic and Cerebellar Patients***

Importance: cerebellum is involved in rapid attention shifts; cerebellar maldevelopment in autistic children may account for inability to shift attention

### ***Cerebellum & Cognition, Aakshamoof, N.A., Courchesne, E., Townsend, J., 1997, Int'l Review of Neurobio, Vol 41, pp 575-584a, 585-598***

Importance: This study presents neurobehavioral, neurophysiological, and neuroimaging data to support the hypothesis that the cerebellum plays a role in attentional functions; discusses the idea that the cerebellum is a “master computational system that anticipates and adjusts responsiveness in a variety of brain systems (e.g., sensory, attention, memory, language, affect) to efficiently achieve goals determined by cerebral and other subcortical systems.”

### ***Cerebellum Coordinates Eye & Hand Tracking, R. C. Miall, R. C., Reckess, G. Z., Imamizu, H., 2001 Nature Publishing Group***

Brief: These data provide the most direct evidence from fMRI imaging that the cerebellum supports motor coordination. Its activity is consistent with roles in coordinating and learning to coordinate eye and hand movement.

### ***Motor Control & Dyslexia Ramus, F., Pidgeon, E., Frith, U. (2002); Inst. Of Cognitive Neuro; The relationship between motor control and phonology in dyslexic children***

Importance: Scientists find correlation between coexistence of motor problems and dyslexia; however, they believe the relationship is do not necessarily causal.

### ***Dyslexia & Cerebellum Size, Eckert, M.A., Leonard, C.M., Richards, T.L., Aylward E.H., Thomson, J. and Berninger, V.W. , 2003, Brain, Vol. 126, No. 2, 482-494; Anatomical correlates of dyslexia: frontal and cerebellar findings***

Importance: Controlled study showing neuroanatomical differences among dyslexics. The dyslexics exhibited significantly smaller right anterior lobes of the cerebellum, pars triangularis bilaterally, and brain volume.

### ***Cerebellum & Auditory Processing, Petacchi, A., Laird, A. R., Fox, P. T. and Bower, J. M. (2005), Human Brain Mapping, 25: 118–128. Cerebellum and auditory function: An ALE meta-analysis of functional neuroimaging studies***

Brief: meta-analysis of 15 different auditory studies selected through PET and fMRI literature; results are consistent with the hypothesis that the cerebellum may play a role in sensory auditory processing

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## Additional Resources

Barthel, Kim & Fleury, Theo, *Conversations with a Rattlesnake: Raw and Honest Reflections on Healing and Trauma*, 2014

Bellis, PhD, Teri James, *When the Brain Can't Hear: Unraveling the Mystery of Auditory Processing Disorder*, 2002

Bluestone, Judith, *The Fabric of Autism: Weaving the Threads into a Cogent Theory*, 2005

Buckendorf, PhD. CCC-SLP, R., *Autism: A Guide for Educators, Clinicians, and Parents*, 2008

Buron, Kari Dunn & Wolfberg, PhD, Pamela, *Learners on the autism spectrum: Preparing highly qualified educators*, 2008

Dana, LCSW, Deb, *The Polyvagal Theory in Therapy: Engaging the Rhythm of Regulation*, 2018

Doidge, MD, Norman, *The Brain That Changes Itself*, 2007

Doidge, MD, Norman, *The Brain's Way of Healing*, 2015

Geffner, D & Swain, D, *Auditory Processing Disorders*, 2013

Geffner, D & Swain, D, *Auditory Processing Disorders*, 2013, Minson, RB; Pointer, AW – “Integrated Listening Systems: A Multisensory Approach to Auditory Processing Disorders”, *Multimodal Interventions for CAPD*, Chapter 29

Goddard-Blythe, Sally, *Attention, Balance and Coordination: The A.B.C. of Learning Success*, 2009

Grandin, Temple, *The Way I See It: A Personal Look at Autism and Asperger's*, 2008

Hannaford, PhD, Carla, *Smart Moves: Why Learning Is Not All in Your Head*, rev 2007

LeDoux, Joseph, *The Synaptic Self: How Our Brains Become Who We Are*, 2002

Leeds, Joshua, *The Power of Sound: How to Be Healthy and Productive Using Music and Sound*, 2010 (newest edition)

Madaule, Paul, *When Listening Comes Alive: A Guide to Effective Learning and Communication*, 1994

Miller, PhD, Lucy Jane, Fuller, Doris, *Sensational Kids: Hope and Help for Kids with Sensory Processing Disorder*, 2007

Pert, Candace, *Molecules Of Emotion: The Science Behind Mind-Body Medicine*, 1999

Pica, R., Experiences in Movement, Birth to Age 8, 2004

Porges, PhD, Stephen, The Pocket Guide to the Polyvagal Theory, 2017

Porges, PhD, Stephen & Dana, Deb, Clinical Applications of the Polyvagal Theory, 2018

Ratey, MD, John, A User's Guide to the Human Brain, 2002

Ratey, MD, John, SPARK: The Revolutionary New Science of Exercise and the Brain, 2008

Schwartz, MD, J., Begley, S, The Mind & the Brain: Neuroplasticity & the Power of Mental Force, 2002

Summerford, Cathie, Action Packed Classrooms, Using Movement to Educate and Invigorate Learners, 2000

Tomatis, A.A., The Ear and Language, published 1963, (Trans English orig 1978), 1997

Tomatis, A.A., The Ear and The Voice, 1999

**Miscellaneous:**

Nash-Wortham, Mary, Hunt, Jean, Take Time, (Bean Bag activities, age 8+)

Smith, Nell, The Breathing Circle -Learning through the movement of the natural breath (great activities for early years)

McAllen, Audrey, The Listening Ear (great resource for speech and child development; may be helpful with the VoicePro)

**Videos:**

Lavoie, Richard, How Difficult Can This Be? The F.A.T. City Workshop: Understanding Learning Disabilities, DVD Format

Lavoie, Richard, Last One Picked . . . First One Picked On: Learning Disabilities and Social Skills, DVD Format

Lavoie, Richard, Beyond F.A.T. City: A Look Back, A Look Ahead, DVD Format