

Review of the Literature

WEIGHTED VESTS and DEEP PRESSURE

Deris, A.R., Hagelman, E.M., Schilling, K., & DiCarlo, C.F. (2006). **Using Weighted or Pressure Vest For a Child with Autistic Spectrum Disorder.** *Online submission at Eric.gov.*

One four-year-old boy diagnosed with ASD was studied to assess the effects of a weighted vest and pressure vest on attention span and self-stimulation. Intervention consisted of alternating treatment between the weighted vest, pressure vest, and no vest during morning circle time. The results showed that self-stimulation occurred 70% of observed intervals at baseline. Self-stimulation was unchanged with both garments, but remained at 77% without vest during activity.

Fertel-Daly, D., Bedell, G., & Hinojosa, J. (2001). **Effects of a Weighted Vest on Attention to Task and Self-Stimulatory Behaviors in Preschoolers with Pervasive Developmental Disorders.** *AJOT*, 55(6) 629-640.

Five children between ages 2 to 4 years who were diagnosed with PPD were studied to examine the effects of wearing a weighted vest on attention span during fine motor tasks and self stimulation. The intervention consisted of wearing a weighted vest for two hours shortly after arrival to school. The study had baseline (A)-week 1-2; intervention (B)-week 3-4; intervention withdrawal phase (B)-week 5-6. During intervention all showed decreased distractibility and increased focus on tasks. One child changed type of self stim behavior and less self abusive. During withdrawal three of students demonstrated increased distractions and decreased focus on task.

Edelson, S.M., Edelson, M.G., Kerr, D.C.R., & Grandin, T. (1999). **Behavioral and physiological effects of deep pressure on children with autism: A pilot study evaluating the efficacy of Grandin's hug machine.** *AJOT*, 53145-152.

This study evaluated the effectiveness of a device called the Grandin's Hug Machine (a machine that offers self controlled lateral body pressure) on arousal and anxiety reduction in autism. Arousal was measured with the Conners Parent Rating Scale (to be completed by the parents before the 1st session and after the 6th and 12th session. Physiological responses were measured with a galvanic skin response reading (GSR) (measured before and after each session). Each child received 12, 20-minute sessions in the Hug Machine. (2 x's a week for 6 weeks). They were to apply deep pressure with the machine as often as desired. The placebo group laid in the machine with the lever for the deep pressure disengaged, so they were unable to apply pressure. The results showed a significant reduction in tension and anxiety for the experimental group as well as a decrease in GSR measures after the deep pressure.

Kane, A., Luiselli, J., Dearorn, S. & Young, N. (2004). **Wearing a Weighted vest as Intervention for Children with Autism and Pervasive Developmental Disorder.** *The Scientific Review of Mental Health Practice*, 3(2).

Four children with PDD and autism were evaluated regarding the effects of wearing a weighted vest on attention. Vest was donned one minute prior to observations and Behaviors were measured for 10 one-minute intervals without a vest, with a weighted vest, and with a vest without weight conditions. The results showed that wearing the weighted vest did not reduce typical behaviors or increase attention to task. Three of the four subjects seemed to react negatively to the vest.

Morrison, E.E.. (2007). **A Review of Research on the use of Weighted Vests with Children on the Autism Spectrum.** *BNET.com Online submission*.

This was a literature review of five articles regarding weighted vest usage. Three of the five studies used experimental designs. The fourth study was a qualitative survey and the fifth study was a two part critical appraisal of the literature pertaining to how weighted vests are used. Each of these articles suggest that there is limited evidence to support the effectiveness of the use of the vest on children with autism.

Olson, L.J., & Moulton, H.J. (2004). **Use of Weighted Vests in Pediatric Occupational Therapy Practice.** *Physical & Occupational Therapy in Pediatrics*, 24(3) 45-60.

This sampling of 514 pediatric OTs found a majority of positive responses regarding improvements in their client's on-task performance while wearing weighted vests. It was cautioned thought that biases were possible due to the opinions of the clinicians and the subjectivity of their perceptions of the results with the use of a weighted vest.

Olson, L.J. & Moulton, H.J. (2004). **Occupational Therapists' Reported Experiences using Weighted vests with Children with Specific Developmental Disorders.** *Occupational Therapy International*, 11(1) 52-66.

A survey of 51 Occupational Therapists entered responses into a data bank. Quantitative Results suggest changes in attention and staying on task (for children with developmental disorders); decreased rocking and increased eye contact(for children with autism); and decreased act outs (for children with SID). Qualitative Results noted that 70% of respondents reported changes in their children's behavior and postural control were due to the use of a weighted vest.

VandenBerg, N.L. (2001). **The Use of a Weighted Vest to Increase On-Task Behavior in Children with Attention Difficulties.** *AJOT*, 55(6) 621-628.

The four students wore weighted vest for six 15 minute periods. The vest was donned 5 minutes prior to timing and removed after the completion of a task, 20 minutes to 30 minutes later. The children engaged in table top fine motor activities while the vest was on. Quantitative Results showed a significant increase in on-task behaviors of all four students while wearing the vest.

Qualitative results: Staff members and classroom observers notices a visible difference in the grounding and interaction of the children with the vest on.

Zisserman, L. (1992). **The Effects of Deep Pressure on Self Stimulating Behaviors in a Child with Autism and Other Disabilities.** *AJOT*, 46 547-551.

The purpose of this study was to determine if the wearing of an upper extremity pressure garment will decrease sensory stimulating behaviors in an 8-year-old girl with developmental delays, autism and possible seizure disorder. The pressure gloves were worn for 2 months within an academic year. Observations were made at different classroom times for 30 minutes; the student was observed for two to three 1 minute intervals with the gloves off and then during the same activity with the gloves on. The pressure gloves were worn for 2 months within an academic year. Observations were made at different classroom times for 30 minutes; the student was observed for two to three 1 minute intervals with the gloves off and then during the same activity with the gloves on. A pressure garment for the torso and arms was later applied using the same protocol for 9 weeks. An overall decrease in self-stimulatory behaviors was observed and noted. There were times when the student appeared to be hitting the tabletop with the gloves on. With the pressure garment, there was an overall decrease in self-stim behaviors. An overall decrease in self-stimulatory behaviors was observed and noted. There were times when the student appeared to be hitting the tabletop with the gloves on.