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Effects of Weighted Vests for Children with Autism

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Introduction: Sensory dysfunction, such as over-reaction to sounds, is common in children with autism, and impacts their participation in classroom activities. Occupational therapists aim to improve participation and address sensory dysfunction by using weighted vests to provide somatosensory stimulation, which is assumed to affect the autonomic nervous system.

Objectives: We investigated the behavioral and physiological effects of weighted vests and hypothesized that wearing a weighted vest would: (1) result in decreased off-task and stereotypic behaviors, and (2) correlate with changes in heart rate, a measure of autonomic nervous system activity that tests the theoretical basis for weighted vest use.

Methods: Ten children with autism (ages 3 to 10) wore a vest for 20-30 minutes and were videotaped during a table- top activity at the same time each school day for 8 weeks. For two weeks at a time the vest had weights (phase A) or no weights (phase B). The study was a single-subject research design, with the starting phase randomized (ABAB or BABA). Raters of the videotapes could not tell if the vest had weights or mock weights (blinding). They recorded the percentage of intervals the child was off-task or using stereotypic behaviours. Heart rate was collected using wireless monitors when children wore the vest.

Results: The weighted vest was associated with decreased off-task behavior in 5 of 10 children based on percent of non-overlapping data points (PND = 70-100%), and decreased stereotypic behavior in 1 participant (PND = 60%). Overall, heart rate was not affected by weighted vests.

Conclusions: Weighted vests increase participation by decreasing off-task behaviors in the classroom for some, but not all, children with autism. Weighted vests did not decrease stereotypic behaviours. The expected effects on the autonomic nervous system postulated in theory were not found.

Contribution to Practice/evidence base of OT: This rigorous study adds to the limited evidence available to guide occupational therapists' use of weighted vests. There is a need to reconsider the theoretical basis of weighted vests and to determine which children benefit. In addition, occupational therapists need to use appropriate outcome measures in clinical practice.