

Evidence Topic: The Wilbarger Protocol

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Evidence Question:

Specific area under investigation: Person, Intervention, Comparison, Outcome

In elementary aged children, does the use of the Wilbarger protocol when followed by therapy treatment decrease negative classroom behavior such as avoidance, emotional upset, and distractibility in children with sensory sensitivity as opposed to therapy treatment without the use of the Wilbarger protocol?

Question Background:

What situations inspired this question?

Sensory Processing Disorder (SPD) is defined as a decreased ability to produce adaptive behaviors as a result of a poor match between the environmental and performance demands on the individual (Foss, Mcgruder, Swinth, and Tomlin, 2003). SPD can impact a child's ability to perform roles and routines in an independent and functional manner. These disorders are classified within a rubric of dysfunction as individuals who under- or over- respond to sensory input from the body or environment.

Under responsive individuals will have a decreased responsiveness to input. They will seek more activities involving sensory stimulation. The overresponsive individuals have an increased responsiveness to input. They will avoid activities involving sensory stimulation. Some individuals will also fluctuate from overresponsive to undersponsive on the rubric of dysfunction.

One approach used in treatment of Sensory Integrations Dysfunction is the Wilbarger Protocol, often referred to as 'Brushing'. This protocol encompasses the following steps:

- Administration of direct deep-touch pressure and stimulation using a specific surgical scrub brush followed by-
- Manual administration of direct deep-touch from the shoulder to the wrist while constantly maintaining contact with the individual.
- This sensory input is applied every 90 to 120 minutes followed by manual joint compressions.

Parameters of the Search:

It is important to know how thoroughly the literature was searched for research studies concerning the question. If the search was not intensive, important information may be lacking from the review.

Parameters: Most articles found pertained to general topics within the field of sensory integration. Research containing information related to the Wilbarger protocol were either studies that involved limited participants, or used the Wilbarger Protocol to measure the effectiveness of other treatment methods. Study on the effectiveness of the Wilbarger Protocol is not firmly established, therefore, all articles that examined the use of the Wilbarger protocol were considered in the evidence findings.

Keywords: Sensory Defensiveness, Sensory Treatment, Occupational Therapy, Wilbarger Protocol, Brushing Therapy, Brushing Technique in Treatment.

Websites, Resources: CINAL, PubMed, Medline, ERIC, AOTA website

Evidence Table

Contains appraisals of evidence reviewed.

Key to Level of Evidence

(Level of evidence may be adjusted downward by EBPX team if study has poor rigor.)

Level	1	2	3	4	5
Type of Evidence	Systematic Reviews and meta-analyses	Randomized Control Trials (RCT)	Quasi-experimental and Comparative studies	Correlation and Non-experimental studies	Descriptive studies & Expert Opinion articles

Citation	Type of Evidence & Access	Description of Evidence/ Type of Study	Level of Evidence	Description of Population	Description of Intervention	Findings
Foss, A., Mcgruder, J., Swinth, Y., Tomlin, G.. (2003). Sensory modulation dysfunction and the wilbarger protocol: An evidence review. Occupational Therapy Practice. July, 2003.	CAT On file at Region X Service Center	Review of background Sensory Modulation Disorder (SMD) and Wilbarger Protocol	Review included five case studies 5	8 year old female with developmental delays	Wilbarger Protocol	A CAT completed by Foss, et al, in 2003 identifies descriptive studies which examined the effects of the Wilbarger Protocol on one individual with SMD. Another study was identified that measured arousal but not behavior of the individual with SMD.

Beyer, C., Ruth, S.. (2006). Integration and application of home treatment program: A study of parents and occupational therapists. American Journal of Occupational Therapy. 60(5).	Research Article On file at Region X Service Center	Qualitative Study (descriptive)	5	6 parents 8 OTR's	Compliance with Wilbarger Protocol	Mostly to do with parent adherence to home treatment programs of Wilbarger Protocol. This study examines the difficulty of applying the Wilbarger Protocol but not the effects of it on an individual with SMD.
Atwood, K., Kimball, J., Lynch, K., Stewart, K., Thomas, M. (2007). Using salivary cortisol to measure the effects of a wilbarger protocol – based procedure on sympathetic arousal: A pilot study. 61(4).	Research Article On file at Region X Service Center	Sensory Stimulation Disorder - Basic research effect of Wilbarger Protocol on stress hormone levels	3	4 boys with Sensory Modulation Disorder (3 – 5 yrs old)	Wilbarger Protocol	3 out of 4 participants decreased cortisol levels 1 increased cortisol levels All participants showed cortical levels to either increase or decrease to meet norm levels of cortisol hormones in the body. This study examined the physiological changes in an individual with SMD but did not address behavioral outcomes.

EBPX Summary

Summary of the EBPX team on the collective evidence reviewed.

There are studies that have suggestive evidence that this intervention may impact the physiological arousal response. One study examined the measurements of one child who showed to have a behavioral response to the Wilbarger Protocol.

EBPX Strength and Impact Summary

Interpretation of the collective evidence reviewed by the EBPX team.

Although reference to the Wilbarger Protocol is frequent in the literature and the technique is widely known among occupational therapists, at this time there is **NO EVIDENCE THAT THIS INTERVENTION IS EFFECTIVE IN REDUCING NEGATIVE CLASSROOM BEHAVIOR** such as avoidance, emotional upset, and distractibility in children with sensory sensitivity. The therapists should be cautioned to carefully measure the individual outcomes when using this method of treatment with an individual.