

# **Preliminary Study: The Effect of the iLs Pillow on Children with ADHD and Sleep-Related Difficulties**

**Site:**

The Hallowell Center New York

**Date:**

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**Description:**

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) Pillow for sleep problems in children with Attention Deficit Hyperactivity Disorder (ADHD).

The focus was to examine the immediate, short term effects of the iLs Pillow on the sleep behaviors of children as measured by sleep diary and parent questionnaire. Additionally, the effects of changes in sleep patterns on parents and family were of interest.

A total of eight children and families participated in this experimental program in advance of an IRB approved protocol. They were asked to complete two questionnaires at three points during the study: after Week One in which no iLs Pillow was used, after Week Two in which the iLs Pillow was used, and after Week Three in which no iLs Pillow was used.

**Results:**

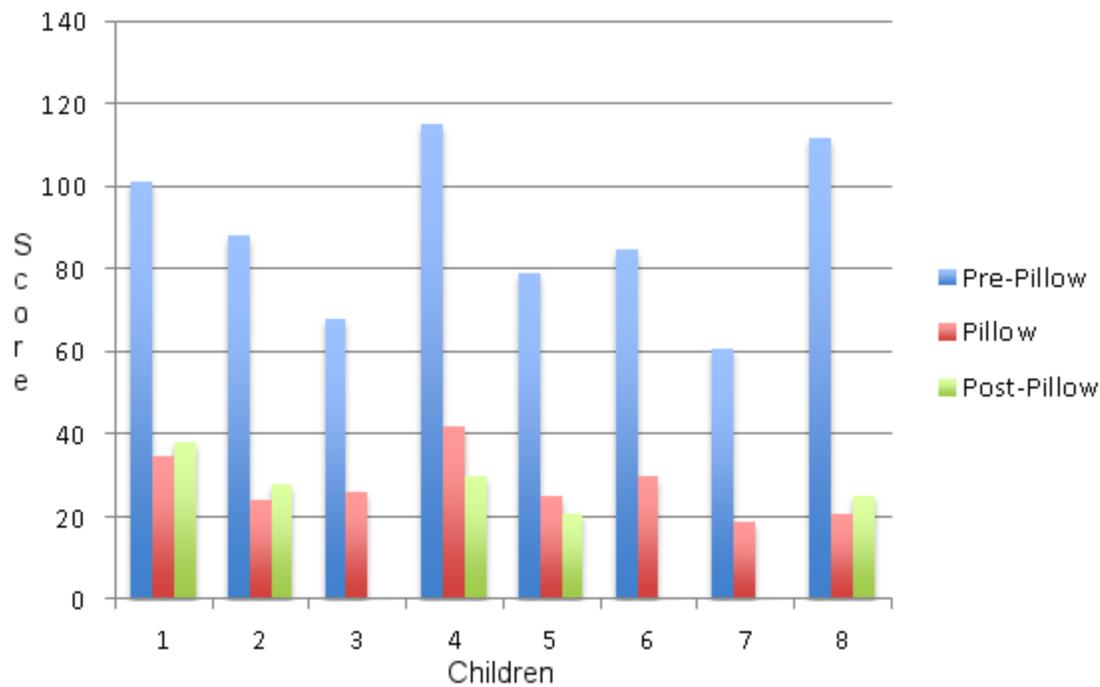
The results were quite promising for future study. All eight children showed a decrease in sleep problems as noted in response to the Child's Sleep Habits Questionnaire (CSHQ). None of the sleep problems returned to their original levels in week three, when the iLs Pillow was not used.

The CSHQ has four subscales: bedtime, sleep behavior, waking during the night and morning wake-up. The most notable changes were in sleep behavior, waking during the night and morning wake-up. All but one child no longer showed any problems waking during the night. All but two children showed improvement in sleep behavior and morning wake-up.

The graph below shows compiled data from the four subscales for each child for three weeks. The Pre-Pillow week is blue, the iLs Pillow week is red, and the Post-Pillow week is green. High scores indicate difficulty; low scores indicate better sleep habits.

Note: Children #3, #6 and #7 do not have data for the final week (post-intervention).

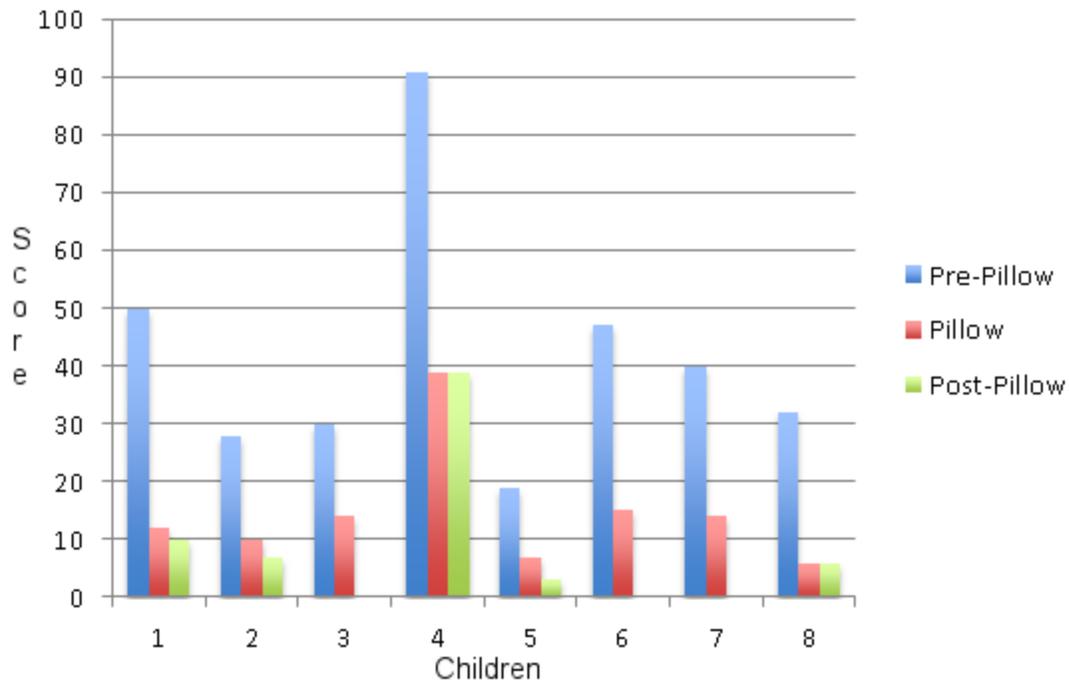
## **Child's Sleep Habits Questionnaire**



### Child's Sleep Habits Questionnaire

Similarly all eight children had improved scores on the Pediatric Quality of Life Inventory (PedsQL – see graph below) that persisted beyond the time they were actively using the iLs Pillow. Performance on this scale is measured in four domains: physical functioning, emotional functioning, social functioning and school functioning. Changes were most notable in emotional, social and school functioning. Improvements were reported by all but one parent in all four areas of function.

### Pediatric Quality of Life Inventory



Here are some examples of behaviors that improved:

- Worrying
- Low energy level
- Keeping up with school work
- Getting along with other children

All of the parents reported a positive reaction to using the iLs Pillow 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.

An IRB approved protocol is slated to begin immediately to test the efficacy of the iLs Pillow on sleep patterns among children with ADHD as well as ASD.

iLs would like to thank the team at the [Hallowell Center New York](#) and the parents involved in this pilot program. Without their sincere interest in improving the lives of those with ADHD, this study would not have been possible.