**ABSTRACT**

This case study examines the effectiveness of a parent-driven therapy regimen in treating a mild to moderate speech sound disorder. The method used was tactile biofeedback with parent administered exercise blocks. The subject improved from 20% to 98% accuracy after 8 hours of parent-led intervention which included 1.5 hours of direct counseling response to therapy.

**Methods**

This study sought to replicate a typical articulation therapy regimen, however the clinical emphasis was on the intra-oral tactile biofeedback method by a trained parent. The test article was the Speech Buddy® which precisely locates a target within the oral cavity to teach correct tongue and jaw placement during speech. The article is hand-held, can be held by a clinician, parent, or subject. Precise intra-oral target placement can be achieved with the dental stop and centering ridge. Design enables running speech and high speed airflow without sound distortion.

**Subject**

- 7 year, 4 month old male
- Mild to moderate, consistent misarticulation of /s/ phoneme
- Distortion in all word positions, words-in-sentences, and phonetic contexts
- Less than 10 hours of prior speech therapy

**Methods (cont.)**

Consulting Clinician:
- Total consultation time: 1.5 hours
- Initial training of mother on use of test article: 30 minutes
- Interim observations: Three, 20 minute sessions after blocks 8, 16, and 24
- Consultations: observations of intervention, direct demonstration to improve effectiveness, review of block results from previous weeks, assign lesson plan for upcoming weeks

Assessment Battery: 50 word picture naming test
- 40 items: /s/ in words in initial, medial and final positions, as singletons (i.e. non-cluster) /s/ in words in sentences with various word positions and various phonetic contexts
- Data collected by a single, licensed, ASHA certified evaluator
- Administration: 3 tests at baseline, 2 at midpoint, and 3 after completion

**Results**

The graph and table above summarize the data and show an average of 98% accuracy was achieved after 8 hours of parent-administered therapy. The data above suggest a full remediation response to therapy.

**Conclusions**

- Parents can achieve successful results with the right tools and training
- Following a similar service model can reduce therapy costs for families and schools
- This service model yielded results in less than half of the time of a typical articulation therapy regimen as compared with industry averages as shown in the chart above.

**Discussion**

It has been shown that parent involvement can be a critical factor in determining success in a speech therapy regimen, with a wide range of reported clinical outcomes observed. For certain patient populations, adjunctive, parent-driven therapy may be a primary treatment option. Tactile biofeedback with the Speech Buddy is a particularly favorable methodological advance for an adjunctive, parent-driven regimen given its ease-of-use and the minimal level of training required to teach a parent to elicit correct tongue placement for target sounds.

The study has important implications for the field of speech-language pathology as results provide support for continued, systematic parent involvement as an important corollary to SLP-driven therapy. For SLP’s with high caseloads and limited one-on-one therapy time, Speech Buddies can be practical tools to ensure subjects improve.

From a fiscal standpoint, parent-driven therapy could represent a substantial savings in cost and time for private and public payers of speech therapy services, thereby easing the substantial societal burden of speech sound disorders. It also provides evidence that parent-driven therapy, conducted with the appropriate clinical tool, may provide an important alternative for many school-age children who do not qualify for therapy in schools.

Further studies could evaluate the use of exercise blocks that are administered in an online format and clinical consultation that could be administered via tele-therapy.

**References**

2. Taps n=71 Speech Improvement traditional therapy, varying severity Pre 74
diff of 14
diff of 14
3. Remediation after 8 Hours

<table>
<thead>
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<th>Time point</th>
<th>Baseline</th>
<th>4 Hours</th>
<th>8 Hours</th>
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<tr>
<td>Accuracy</td>
<td>20%</td>
<td>42%</td>
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<td>Items Correct</td>
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**Treatment Time vs. Industry Norms**

Rogers - Parent & Speech Buddy (7 years)

- Treatment Time vs. Industry Norms

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<tr>
<td>Taps</td>
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<td>ASHA NOMS 2001 - 2009 (prekindergarten)</td>
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<td>Jacoby et al. (6 years)</td>
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