

Case Study

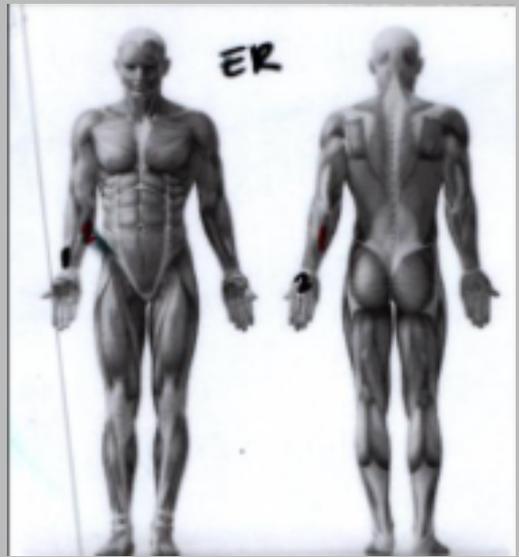
Improvements in quality, accuracy and speed of handwriting in a 7 year old

PERFORMED AT:

Performance PT and Wellness

DIAGNOSIS:

7 year old boy presents with difficulty writing, completing fine motor tasks and gripping. Mother noted symptoms as he was having difficulty keeping up in school and completing timed tasks due to slow and sloppy handwriting.



TREATMENT AND OUTCOME:

To improve the patient's ability to write in a timely and (neat) manner in order to improve his ability to keep up with the curriculum in school. We used the NEUBIE NMES device with a combination of muscle activation techniques and use of NEUBIE glove work to improve wrist extensor strength and coordination. Each session activation points along the wrist extensors were performed followed by handwriting and fine motor tasks while using the NEUBIE gloves followed by a hand bath. Patient required 14 visits to improve grip strength from less than 1# to 14# and decrease writing speed from 14 seconds to 11 seconds for his first and last name.

CLINICAL FINDINGS:

Process: Manual Muscle Testing and ScanFindings

Weaknesses: C6-C8 myotome especially of wrist and finger extensors, pronators and finger and wrist flexors, most notably the extensors. Gross Grip at the evaluation was unable to register/less than 1 pound, pincer grip was 5# on the left, 3# on the right.

Scanning: we did some scanning on the patient but the majority of hot spots were located along the hand and distal wrist, therefore gloves utilized throughout sessions.

Assessment: Findings indicated weakness throughout the C6-C8 myotomes, especially of wrist and finger extensors. With these muscles having significant weakness, the patient was unable to properly hold his pencil in a slightly extended wrist position to correctly form letters and fatigued quickly, requiring additional time to complete tests and timed quizzes. Along with school tasks, he had significant difficulty with fine motor tasks such as using Legos/playing with age appropriate toys, turning knobs and carrying buckets required to help around the family farm. His lack of functional wrist and finger strength also caused him to have poor coordination and he lacked the ability to complete activities such as: repetitively throwing and catching and performance of quick alternating finger movement.

Treatment: Manual activations to the weak areas followed by neubie glove protocol (negative electrodes hooked to gloves, positive electrodes placed at C6 (wrist extensor myotome) during handwriting tasks, tracing pictures, rubber band manipulation and throwing/catching followed by a hand bath.

Patient/mother report after initial evaluation: with gloves donned patient was able to write his letters more smoothly, equally spaced and height.

DISCUSSION:

Patient's response to treatment was very positive-he has been able to maintain his strength and improve handwriting speed. At the time it was difficult to determine intensity of the NEUBIE as the patient was 7 years old but even at low intensities he showed positive results.

PATIENT PERSPECTIVE:

Mother was very pleased with results as he was able to keep up with school work, decrease time required on tests and homework and was able to play with Legos and other age appropriate toys without getting frustrated.