Case
Melanie is a nine-year-old girl attending elementary school in the third grade. She was referred to occupational therapy because of poor functional legibility, immature pencil grasp, and teacher and parent’s expressed concerns. The teacher asked the occupational therapist to suggest possible adaptations, strategies or equipment that could be implemented in the classroom in order to improve Melanie’s handwriting legibility. The occupational therapist is curious about what evidence is out there to use this intervention before making a formal suggestion.

Do handwriting adaptations and strategies work in improving handwriting legibility?

Handwriting legibility is a primary area of concern for school-based occupational therapists. It is important to understand the best interventions for these students.

Ask: Research Question
For school-aged children, does the use of strategies and adaptations used in standard occupational therapy (OT) increase handwriting legibility compared with no intervention?

Acquire: Search Terms
Patient/Client group: Students OR Elementary school OR Children Intervention: Assistive Technology OR Self-help Devices OR Occupational Therapy OR Adaptations Comparison: Outcome(s): Improved Handwriting Legibility OR Improved Handwriting OR Improved Pencil Grasp OR Improved Fine Motor Skills

Acquire: Selected Articles
Denton et al. (2006): A randomized control trial (RCT) that focused on the effects of a sensorimotor intervention on children with handwriting difficulties.

Case-Smith (2002): A matched cohort study focused on the effects of occupational therapy intervention on children in the 2nd, 3rd, and 4th grade with poor handwriting.


Marr & Dimeo (2006): A single-group pretest, posttest design that focused on the effects of a summer handwriting course on children in need of support.

Appraise: Study Quality
Denton et al. (2006): Suggestive: Raters were blinded to the study, as well as the subjects, but there was a limited sample size and the amount of time spent on handwriting at school was not measured.


Peterson & Nelson (2003): Strong randomized experimental design with high internal validity, but administrators were not blind to experimental condition.

Marr & Dimeo (2006): Suggestive: Study was strong in its pretest, posttest design and its relevance to real practice, however it failed to account for researcher bias.

Appraise: Study Results
Overall the studies suggest that handwriting practices can be improved with the use of occupational therapy, adaptations, and assistive devices. The strength of the results differed, however all of the studies demonstrated some handwriting improvement with the given interventions. Those children who were given skilled occupational therapy, as well as interventions including pencil grippers or other assistive technology, showed marked improvement in their handwriting skills. Nevertheless, there was a limited sample size in each study, as well as no follow-up in a classroom setting which should be addressed in future research and could show greater statistical differences.

References

Reviewers: Sanjukta Asgekar, Leilani Leilani Fonacier, Michelle Ichinoe, Richard Lai, Hillary Rodich, Lauren Schaubert

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Unclear: Further research is needed to determine if assistive technology and adaptations is effective for increased handwriting legibility in school-aged children.