Inclusion criteria
• Published after 1995
• Peer-reviewed
• School aged children between 1st and 5th grade
• Interventions addressing improvement of fine motor skills
  • Handwriting factors:
    • grip strength
    • grasp pattern

Exclusion criteria
• Articles addressing sensory or visual/motor components of handwriting
• Study participants with developmental or physical disabilities

Search Terms
• Handwriting
• Occupational therapy
• School-aged
• Children
• Grasp
• Grip
• Strength
• Kinematics
• Fine motor

Inclusion criteria
• Hand-eye coordination, FM skills
As measured by BOT, DTVP-2

Level of Evidence

Grasp Patterns
Grip Strength
Length of Task
Other Factors
Legibility
Speed
Handwriting Performance
Rosenblum, at al (2006) 2

Level 1 Evidence: Randomized Control Trial
Level 2 Evidence: Cohort Trials (non-randomized) with two comparison groups
Level 3 Evidence: Nonrandomized pre-test/post-test with one group

Dynamic Tripod  Lateral Tripod
Dynamic Quadrapod  Lateral Quadrapod

Occupational therapists can play a key role in teacher consultation on handwriting instruction and intervention. OTs provide strategies and recommendations to assist students in reaching their full educational potential.

It is crucial for occupational therapists to identify underlying factors and contributing performance components to a student’s poor handwriting performance, not solely grasp pattern.

More rigorous research, including randomized control trials, are needed on the relationship between pencil grasps on handwriting speed and legibility.

Evaluating the Effects of Grasp Patterns and Grip Strength on Handwriting Skills
Jennifer Bebey, OTS; Kelsey Engelstad, OTS; Audrey Zapletal, MS, OTR/L
Thomas Jefferson University, School of Health Professions, Department of Occupational Therapy, Philadelphia, Pennsylvania

BACKGROUND INFORMATION
• Handwriting is a critical and complex skill that school aged children acquire over time.
• When a child demonstrates handwriting difficulties, he or she may have challenges with:
  • Completing written school assignments in a timely fashion,
  • Taking notes,
  • Finishing homework,
  • Completing exams, especially short answer.
• 80% to 85% of occupational therapy referrals in schools are due to atypical grasp pattern, fine motor and handwriting concerns that affect a child’s educational performance.

LITERATURE REVIEW PROCESS
1. Form Clinical Question
2. Search in Journal databases
3. Skim abstracts & select relevant articles
4. Appraise articles & identify themes
5. Interpret findings & their clinical implications
6. Disseminate work to audience

PICO: What is the evidence for the effect of grasp patterns and grip strength on handwriting skills in school-aged children?

STUDY EVALUATION AND ANALYSIS

STUDY EVALUATION AND ANALYSIS

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MATURE GRASP PATTERNS

ATYPICAL GRASP PATTERN

THEMES DERIVED FROM EVIDENCE

FUTURE RESEARCH & IMPLICATIONS FOR PRACTICE
• Occupational therapists can play a key role in teacher consultation on handwriting instruction and intervention. OTs provide strategies and recommendations to assist students in reaching their full educational potential.
• It is crucial for occupational therapists to identify underlying factors and contributing performance components to a student’s poor handwriting performance, not solely grasp pattern.
• More rigorous research, including randomized control trials, are needed on the relationship between pencil grasps on handwriting speed and legibility.