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Prevention through occupation: Notebook Computer Use by Middle School Age Students

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In the United States, computers have become a student's everyday tool, both for educational and personal pursuits. While research has focused on the effects of prolonged computer usage in adults, less research has been conducted on the effects of computer usage on middle school students' well being. The Maine Learning Technology Initiative (MLTI) is a program established in the state of Maine, USA where all students in grades 7and 8 are provided a notebook computer to use at school and at home throughout the academic year. Some towns have elected to provide students with notebook computers through twelfth grade. This study aims to investigate how middle school students use notebook computers. A longitudinal study was initiated in 2009, where 34 7th grade students will participate yearly for six years through 12th grade.

A repeated measures study design was used. This is a longitudinal study where students participate each year from 7th through 12th grade.

Twice yearly during the academic year, all participants complete an online quiz about ergonomics, online typing test, and the online version of the Young People's Activity Questionnaire (YAQ). The on-line surveys are completed on the study's website at: www.ergonomicsfortherapists.com

Yearly anthropometric measurements are taken and participants receive a visual function screening from a vision specialist.

All participants received participatory ergonomics training, a notebook riser, mouse pad with tips for arranging a notebook computer workstation, and a digital camera.

Participants were randomly assigned to one of two conditions. Participants in experimental condition #1 received a wireless keyboard and wireless mouse for use at home while participants in experimental condition # 2 received a wireless split keyboard and wireless mouse.

Knowledge of ergonomics, vision, anthropometric measurements, typing ability, musculoskeletal discomfort, activity participation, use of notebook accessories and the impact of participatory ergonomics training reinforced through web based education will be investigated. Preliminary findings will be presented at the 2010 WFOT Congress. Results from this study will add to the evidence base of occupational therapy's important role in working with children and will expand our role into the area of prevention.