

# Rheumatoid arthritis doesn't hinder computing skills

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A recent study by researchers from the University of Pittsburgh found that workers with rheumatoid arthritis (RA) were comparable to non-impaired individuals in keyboarding speed. Individuals who were trained in touch typing demonstrated faster typing speeds than those using a visually-guided ("hunt and peck") method, regardless of impairment. Researchers also noted slightly impaired mouse skills in workers with RA. Results of this study appear in the February issue of *Arthritis Care & Research*.

According to the U.S. Census Bureau the number of workers using computers increased from 46% in 1993 to 56% in 2003 with figures expected to continue climbing higher. For workers with RA the capacity to use computers may be limited by impairment in hand range of motion (ROM) and strength caused by inflammation of their joints due to the disease. Prior studies have shown that workers with RA have higher rates of work disability, premature work cessation, and reduced hours on the job.

"With more arthritic workers using computers, understanding the associations between hand function impairment and peripheral device (keyboard and mouse) limitations is essential and the focus of our current study," said lead author Nancy Baker, Sc.D., MPH, OTR/L. Researchers recruited 45 participants from the University of Pittsburgh Medical Center (UPMC) Arthritis Network Registry for the study. Those subjects enrolled had an average age of 55, were primarily white females, and had RA for 17 years. Half of all participants worked full or

part-time, with 100% of this group using computers at work.

Hand function was assessed using the Keitel Hand Function Index (KHFI) and the Arthritis Hand Function Test (AHFT). The KHFI included 11 performance test items to measure active ROM of the thumb, fingers, wrists, forearms and elbows. The AHFT consisted of 10 test items to evaluate pure and applied strength and dexterity in a variety of hand tasks. Participants' abilities to use a standard keyboard and mouse were measured using the Assessment of Computer Task Performance (ACTP).

The research team found that 73% of participants were trained in touch typing and used the computer an average of 18 hours per week. Regression models suggested that keyboarding speed was significantly associated with touch typing training and age. Mouse speed was significantly associated with age only, with younger participants demonstrating faster speeds than older subjects. Impairments in hand function were associated with 2 of 7 keyboarding tasks and no mouse tasks. "Our research suggests that if individuals with motor impairments have the capacity to learn touch typing it may increase their overall speed," noted Dr. Baker.

Researchers further compared the current study group results with an impaired and non-impaired subject group from a normative study by Dumont et al to benchmark ACTP. "We found that our RA workers had similar keyboarding speed compared with the non-impaired sample," Dr. Baker stated. "However, we found that mouse speed was much slower in some participants in our RA sample." Task-specific training for mouse use is not available and the reduced productivity with this device has the potential to place computer using workers with RA at risk for work disability. "Further research is needed to identify effective strategies to maintain productivity in computer users with RA," concluded Dr. Baker.

**More information:** "Association Between Computer Use Speed and Age, Impairments in Function, and Touch Typing Training in People With Rheumatoid Arthritis." Nancy A. Baker and Joan C. Rogers. Arthritis Care and Research; Published Online: January 28, 2010 ([DOI: 10.1002/acr.20074](https://doi.org/10.1002/acr.20074)); Print Issue Date: February 2010.

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