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RIT Study: Sign Language Interpreters at High Ergonomic Risk

RIT University News - April 16, 2008

Sign language interpreting is one of the highest-risk professions for ergonomic injury, according to a new study conducted by Rochester Institute of Technology. The research indicates that interpreting causes more physical stress to the extremities than high-risk tasks conducted in industrial settings, including assembly line work. It also found a direct link between an increase in the mental and cognitive stress of the interpreter and an increase in the risk of musculoskeletal injuries such as carpal tunnel syndrome and tendonitis.

The research, conducted through RIT's Department of Industrial and Systems Engineering, is one of the first to catalog the effect of signing on interpreters and show a correlation between mental and cognitive stress and increased ergonomic risk. The results of the study are available in the March 2008 edition of the peer-reviewed journal *Ergonomics* and were also presented at the 2007 biennial conference of the Registry of Interpreters for the Deaf.

"The impact of repetitive stress in industrial and office settings has been well documented, but there is less data on the risk of ergonomic injury to sign language interpreters," says Matthew Marshall, associate professor of industrial and systems engineering at RIT and a leader of the research group. "Our findings indicate that interpreters may actually be at a higher risk of injury than other professions."

Marshall notes that the impact of injury on interpreters and its effect on retention is a major issue in the deaf community because any reduction in the interpreter population would have an adverse effect on the full societal participation of deaf and hard-of-hearing individuals.

"Gaining a better understanding of the factors contributing to interpreter injury can show us ways to intervene and reduce the risks," adds Steve Nelson, director of access services for the National Technical Institute for the Deaf. "Informed intervention can help drastically reduce injuries and keep much-needed skilled interpreters at work."

In developing its findings, the RIT team studied a group of interpreters and measured the physical impact of signing over a fixed time period, utilizing metrics developed for

industrial settings. The team found that wrist velocity and acceleration during interpreting, factors used to measure physical impact, were more acute than the high risk limits for industrial workers. In addition, an increase in mental and cognitive stress led to a 15-19 percent increase in wrist velocity and acceleration during interpreting.

Marshall will next look to enhance this data through additional studies placing interpreters in a wide variety of settings. The information will assist in furthering understanding of the impact of sign language interpreting on repetitive stress, while also assisting organizations in developing better training programs to reduce ergonomic risk.

"The ultimate goal is to enhance knowledge of the impacts of interpreting and help make the profession more conducive for workers," notes Marshall.

Rochester Institute of Technology
National Technical Institute for the Deaf
52 Lomb Memorial Drive | Rochester, NY 14623 | Office of Admissions: 585-475-6700 (voice/TTY)