Hands-on lessons in ergonomics for youth

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Ergonomics risk factors apply to everybody. Numerous adults have experienced disabling injuries related to use of computers and other forms of technology. Now children are using technology even more than adults. Increasingly ergonomics risk factors are being recognized as present in the world of children. Outreach to schools and the surrounding community by employers may help protect the future work force. A growing body of researchers believe that children can benefit from the early introduction of ergonomics awareness and preventative measures.

While individual representatives of the educational system may embrace the concept of introducing ergonomics into the classroom, a number of barriers can prevent implementation of integrated programs. Some of the barriers to introducing ergonomics in schools have been absence of a tie to educational standards, the existing demands on teaching hours, and the absence of easily executable lesson plans. Ergonomics is rarely included in teacher training and professional ergonomics expertise is needed for the development of a class-based program.

As part of Strategic Vision plan for 2025, a National Laboratory identified community outreach and the future workforces as key areas for initiatives. A series of hands-on interactive modules have been developed by professional ergonomics specialists. They are being tested with elementary, middle and high school students. Where possible, the content has been tied to the educational standards in the State of California in the USA.

Currently the modules include grip strength, effective breathing, optimal keyboard and mouse positions, optimizing chairs, posture and movement, backpack safety and safe lifting. Each module takes the students through a related activity or experience. An individual worksheet asks them questions about the experience and guides them to consider implications in their activities of daily living. A module on hearing is under development.

The goal is to have a toolkit that teachers can use in classrooms with minimal training. The kit will come with lesson plans, including background material, key points, questions and answers, possible homework assignments and references. It will include instructions and worksheets for students as well as the materials needed for each module. A pre- and post-test will be administered to test the awareness and understanding of the principles introduced in through the modules.

This interactive session will offer the opportunity to for attendees to participate in some of the modules that have been developed to provide experiential demonstration of ergonomics principles. Attendees will experience ergonomics in action and be able to evaluate the applicability of the process in their own area in the world of ergonomics. The session will consist of 20 minutes introduction, 40 minutes working with the toolkit, finally another 30 minutes for questions or discussion for a total time of 90 minutes.

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