

by Marlene Orton

### What it is

**E**rgonomics is an engineering science involving the physical and psychological relationship between people and the machines they use. Chairs and work-stations with keyboard trays are two of the most important elements for proper working posture and habits in an office to reduce discomfort and potential injury from prolonged computer use.

Some of the common problems that users of computers often experience in the workplace are:

- Muscle fatigue;
- Trying to maintain good wrist position to prevent strain;
- Inadequate writing/working space while using the computer;
- Needed supplies/tools/reference materials are not within easy reach; and
- Equipment that does not adjust sufficiently to accommodate the needs of various individuals.

### How it works

**M**obility and user adjustability are the major factors in creating good workplace solutions. When working at a computer terminal, the ideal posture allows for elbows, hips and knees to be set at 90-degree angles. Wrists should generally be straight, so arms and wrists work in a neutral position. If wrists are bent or resting on the edge of a desk, extra pressure is exerted on the tendons and nerves in the carpal tunnel. Keyboard height should be at the elbow or slightly lower. The mouse should be positioned at the same level as the keyboard.

### The chair

**A** good chair should be easily adjusted in at least in six areas: seat depth, seat height, back height, back support and height and width of arms. "Seating is still I think the single biggest problem that most organizations don't address," says Tom Morrison, sales manager for Ottawa-based Capital Office Interiors, an interior design consultant and dealer for the leading makers of ergonomic office furniture. "I see a lot of really lousy chairs. My recommendation has always been if you are going to try and save some dollars, save it on the work station for now and spend it on the chair."

The cost of a proper chair starts at about USD\$450. The Leap chair is considered the top of the line model, developed by world leader Steelcase Inc., based in the United States. Leap incorporates technology supporting spine and pelvis motion and was subject to rigorous testing in a 1999 Michigan State University study involving a team of seven ergonomic specialists and multi-disciplinary researchers. Cost is around USD\$950.



### The keyboard surface

**H**eight adjustability on the keyboard work surface is becoming a major factor, particularly in government, says Morrison. Keyboard surfaces can be altered by crank and increasingly by electrically powered mechanisms, which can add up to 50 percent to the cost of a work-station. The ability to tilt the angle of the surface is important and it should be adjusted throughout the day so the user is not bound to a single position for any length of time.

Alternatively, keyboard platforms hooked below the work-station are available. These can swing left or right in the same plane or adjust for angle and left-handed as well as right-handed mouse use. The easy rider™ Arm and swing™ Combo is considered the top model made by Canadian-based, The International Source for Ergonomics (ISE). Retail price is about CAD\$400. ISE describes it as the "universal solutions board" because the platform fits any person on any platform, installed at any angle, including from a diagonal corner.

### Vendors

**T**he leading ergonomic work-station furniture manufacturers all have dealers in Canada. Most have manufacturing plants in Canada as well. These are:

Steelcase Inc.: [www.steelcase.com](http://www.steelcase.com)

Herman Miller: [www.hermanmiller.com](http://www.hermanmiller.com)

Teknion: [www.teknion.com](http://www.teknion.com)

Knoll: [www.knoll.com](http://www.knoll.com)

International Source for Ergonomics: [www.ise-ergonomics.com](http://www.ise-ergonomics.com)

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