Stand up for comfort:
A case for sit-stand workstations

**Ergonomics** is the science of fitting the task to the worker to maximize productivity while **reducing discomfort**, fatigue and injury.
Sit/Stand Usage

- There is increasing evidence to support the notion that varying your posture throughout the workday has significant health benefits.
- The same adjustment guidelines for the keyboard and monitor apply.
- Studies suggest that for sit-to-stand application to succeed, it must require minimal time and effort to adjust.
Health Implications of Prolonged Sitting

Sitting for an extended period of time results in:

• 90% inhibition of LPL enzymes after 60 minutes of sitting that are responsible for burning fat
• Weight retention, lowered metabolism, and lower levels of “good” cholesterol (HDL)
• Leads to a reduction in N.E.A.T.

Impact on Non-Exercise Activity Thermogenesis (NEAT)

• The energy expended for everything we do, such as folding laundry and making photocopies
• Prolonged sitting limits our ability to burn the minimum number of calories required to maintain weight
Health Implications of Prolonged Standing

- Linked to foot pain, varicose veins, and static muscle fatigue
- Causes joints in the spine, hips, knees, and feet to become temporarily immobilized, which can cause damage to tendons and ligaments
Health and Productivity Benefits of Movement

A 2009 Mayo Clinic study found:

• It was possible to burn an additional 340 calories per day by spending two hours standing instead of sitting

• Those who sat for prolonged periods suffered three times the rate of heart disease and more than twice the rate of death after a heart attack than those who were active during work

In a university research study:

• Participants who did not alter their postures took an average of 47% more work breaks, with the average duration of their work breaks being 56% longer

Dainoff, M. “The Effect of Ergonomic Worktools on Productivity In Today’s Automated Workstation Design”; Center for Ergonomic Research, Miami University: Oxford, Ohio

Fixed Work Surfaces: a fundamental design challenge

The standard 29.5” work surface correlates to the seated elbow height of a 6’4” male, less than 2% of our working population.
Improvement Strategies

Articulating keyboard supports
• Validated work tool for improving hand, wrist and seated posture
• Appropriate for both seated or standing applications

Sit to stand workstations
• Allows for greatest amount of postural variation
• Shown to significantly reduce discomfort and health risks
Summary

Sit-Stand Workstations:

• Increase worker comfort and work performance
• Provide enhanced workstation adjustability
• Accommodate for wide range of user heights