Stand up for comfort:

A case for sit-stand workstations

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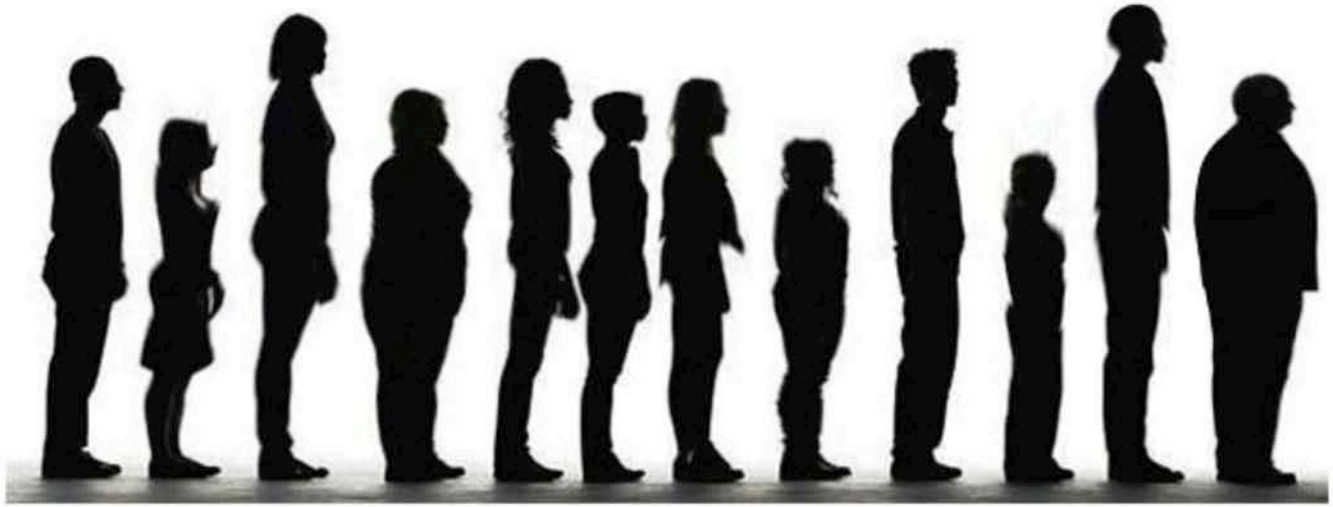


Ergonomics is the science of
fitting the task to the worker
to maximize productivity while
reducing discomfort, fatigue and injury.

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:

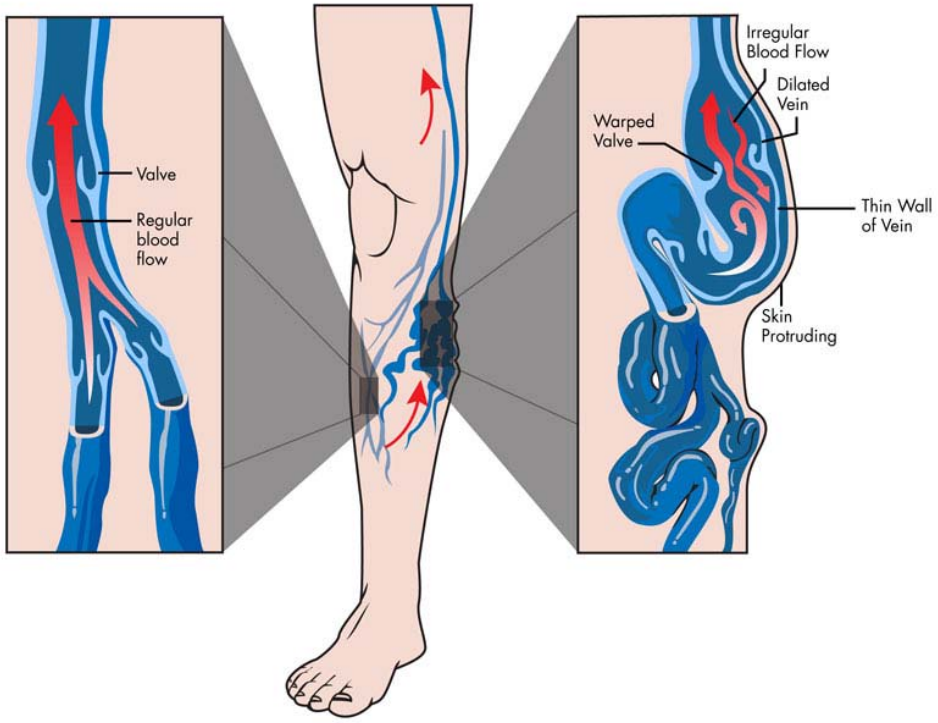
- 90% inhibition of LPL enzymes after 60 minutes of sitting that are responsible for burning fat
- Weight retention, lowered metabolism, and lower levels of “good” cholesterol (HDL)
- Leads to a reduction in N.E.A.T.

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



Linak US Inc. *Made to Move*. Louisville, KY.

Health and Productivity Benefits of Movement

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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

Levine, James, and Selene Yeager. 2010. *Move a little, lose a lot.* Waterville, Me: Thorndike Press.

Fixed Work Surfaces:
a fundamental design challenge

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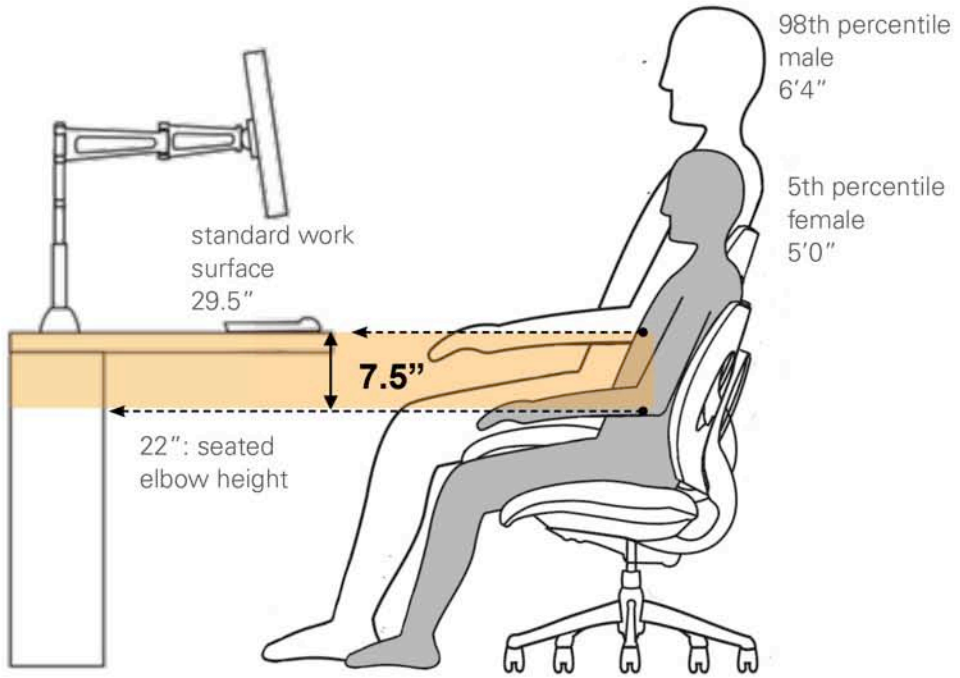
The standard 29.5" work surface correlates to the seated elbow height of a 6'4" male, less than 2% of our working population.



Improvement Strategies

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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