

## “Adjustable Workstations: The Great Debate”

-Dave Brandenburg, CPE

Very often when the discussion of adjustable workstations comes up, the characteristics of sitting vs. standing while working are debated. To be sure, most of us sit much more than is healthy for our bodies. When a person sits, there is more pressure on the lower back and the heart rate stays low. It is encouraging that there is a progression toward people having the option to stand and work, as our bodies are designed to move. However, static standing is just as bad for your back as static sitting—it is more fatiguing and there are some tasks that are more easily done while sitting.

A Cornell study shows that people with sit/stand workstations use them at a standing height about 15 minutes a day. Even this short amount of time helps by increasing movement and reducing static sitting postures. Subjective data from the study shows that people are overall very happy with their sit/stand workstations.

Most organizations aren't prepared for the significant upfront cost of sit/stand desks, but that doesn't mean you can't have any adjustability for the worksurface at a reasonable cost; there is a great deal of value to be gained from a workstation that is at least adjustable in users' seated range, which for 90% of us is 22"-32" from the floor.

A typical office workstation is set at a fixed height of 28.5"-30", and to accommodate shorter users, adjustable keyboard trays can be installed. However, a typical keyboard tray can only be lowered about 5" below that fixed desk height, bringing the keyboard down to around 24". For a shorter worker, that still might not be low enough. Even if the most adjustable keyboard tray is installed, that person may strain to reach up at their desk while seated, and the monitor will most likely be too high, putting strain on their neck and eyes.

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User-Adjustable Workstation, Telescoping Legs with a Crank

### A Comparison of User-Adjustable Workstations

Type	Height	Price	Usability	Configurations	Pros	Cons
<b>Telescoping Legs with a crank</b>	22"-32"	25% more than a fixed height desk	Slow to adjust, cranks hard to reach	Numerous	Low Cost, Various Configurations	Difficult to adjust
<b>Spring-Loaded Telescoping Legs</b>	26"-43"	50% more than a fixed height desk	Lift centered awkwardly in middle of desk	Limited. Too tall for short users to sit; too short for tall users to stand	Easier to adjust	Limited Configurations; only beneficial as a small desk
<b>Telescoping Legs with an electric motor</b>	22"-50"	50%-100% more than a fixed height desk	Easiest to use	Numerous	Ease of Use, Widest Range of Adjustability	Expensive

## “Adjustable Workstations” cont. from pg. 2

Another common issue is that shorter people are forced to choose between getting solid foot support or proper back support; this is due to movement away from the lumbar support of their chair to get their feet flat on the ground. People tend to support their feet rather than their back because it allows them to move around the workstation and get in and out of the chair more easily. Even so, an unsupported back has a great deal of pressure on it once the postural muscles get fatigued. This can cause a person to lean on their hands and arms to get support for their upper body, which increases strain on the arms and shoulders and makes it more difficult to use their hands.

What about just giving these shorter folks footrests? Those can occasionally and/or temporarily help, but in the long-term most people want their feet on the ground to feel stable when seated.

The better solution would be to have a worksurface that can be raised and lowered, to accommodate the varied sizes and preferences of our workforce. Let's look closer at some of the types of adjustable tables. There are two classes of adjustable tables: installer-adjustable, meaning the table can be assembled at different specified heights but needs to be taken apart each time its adjusted; or user-adjustable, meaning that the table can be freely adjusted after installation and during its use.

Installer-adjustable desks include: desks with telescoping legs using a pin inserted into pre-drilled holes at heights of 26"-32", and modular desks where the worksurface can be positioned at a 3"-4" range on the legs. The advantages of installer adjustable desks are that they look and feel like traditional desks and, in the case of systems furniture, can be specified at all the same sizes. Also, the cost is the same or minimally more expensive than a comparable fixed-height model. The major disadvantage of these models is that someone needs to take the desk apart each time it needs to be adjusted. In terms of labor, this can cost a few hundred dollars for a standard L-shaped desk.



User-adjustable options are shown on the previous page in a table addressing the pros and cons of the three main choices.

In the long-term, the savings from increased comfort, reduced injury risk (and, in effect, insurance premiums) and increased productivity will allow a user-adjustable desk to pay for itself. However, the person must be trained and encouraged to take advantage of its benefits. If there is one thing we as humans have learned from wearing clothing, it's that one size does not fit all. This needs to be remembered when considering workstation design.

### References;

Hedge, A. and Ray, E.J. (2004) Effects of an electronic height-adjustable worksurface on self-assessed musculoskeletal discomfort and productivity among computer workers, Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting, New Orleans, Sept. 20-24, HFES, Santa Monica, 1091-1095.