

Office Ergonomics

Shifting Paradigms: To Support or Not To Support?

*Written by Deborah Read, MOTR/L, President of ErgoFit Consulting, Inc.
Seattle, WA*

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So, there's this battle going on among professionals conducting office ergonomic evaluations.....and you may not even be aware of it!

Often, one of the hardest things as a professional is to change the way you do things, to change what you recommend to your clients. But this is exactly what we must do when we learn about research with practical applications! It may make you feel as if you've been wrong and even negligent in the past. You might worry to yourself.... *"Gosh, did I make things worse for that person with what I recommended? Should I go back and fix it? Will I look like an idiot who doesn't know his/her job? Will I make my profession of ergonomics look even more wishy-washy than what the public already thinks about it?....."*

Well, I believe we need to set aside all those fears and forge ahead with professionalism. We need to educate our clients that we are on top of our game and that based on research combined with our clinical experience, we are modifying our technique or our recommendations. I'm going to let you know how I have changed what we recommend when we do office ergonomic evaluations.

To get to these changes, I had to confront my own learning and beliefs. I had learned, as probably many of you had, that a "good" ergonomic workstation included a fully adjustable chair with arm rests, a fully adjustable keyboard tray positioned in negative tilt, the mouse on that tray or attached to that tray, and a 90° elbow and knee position.

In my own office set up, however, I never had a keyboard tray and I was quite comfortable with my arms on my desk even if typing for several hours, so I began to question these "good" requirements. I pulled back to ask myself some broad-perspective questions. Here was my thinking that began several years ago and the conclusion I eventually came to:

1. Why are there arm rests on office chairs? They don't fit most people, but it must be because arm support is important. They must have been invented to help people have arm support while typing on a keyboard on a keyboard tray?
2. →.....But why are there keyboard trays? Well, it must be because we need the adjustability. But, really, I think they were invented to solve a space problem that was created by large CRT monitors! And now that we have flat screens that don't take up the entire depth of a desk.....
3. →....Then why do we need keyboard trays at all? Well, I guess we don't! We can push back the flat screen and the keyboard on the desktop and get great FOREARM SUPPORT in such a way that there is wide distribution of forces and therefore no local contact stress, and in such a way that there is no pressure or contact stress to the wrist or palm pads, and in such a way that there is no over-loading or static contraction of the trapezius and sternocleidomastoid (by having the desktop high enough to take the full weight of the arms and prevent slouching)

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to prevent neck/shoulder discomfort. This is what Gerr et al (2002) and Rempel et al (2006) both concluded anyhow, despite evaluating different configurations and equipment: the bottom line was forearm support significantly reduced neck/shoulder discomfort. As long as people aren't dropping their wrists to the desk surface, their wrists are well within allowable 0-15° of wrist extension while typing with the muscular portion of their forearm supported on the desk. For those who have the deeply ingrained habit of dropping their wrists to the desk surface, and since research has shown negative impacts of "wrist rests", placing their elbows on the wrist rest instead will change the relative height of the keyboard on the desk top and therefore ensure 0-15° of wrist extension while typing (much like Rempel's forearm board support).

4. →.....But...then I'm back to the first question: why would we need arm rests on office chairs? Well, I guess we don't need them after all! This would allow people to sit closer to their desks and all the equipment/accessories atop their desks such as phones, 10-keys, writing areas, etc.!! No more keyboard trays to push or pull or reach and bend over or have bump into our thighs. All I have to do is adjust the relative heights of the person and the desktop, which is really easy with bracketed modular furniture or pin-height or otherwise height adjustable desks. And for those desks that are too high, we can cut down the legs or raise the chair and provide elevated foot support. And furthermore, arm rests don't come close enough to the sides of many bodies (especially females) to support the forearm, so people end up "winging" their elbows out to reach the arm rests, which can cause neck/shoulder discomfort in and of itself. So, there's yet another bonus to this whole new configuration recommendation. How perfect!

That said, there are occasions when the type of desk requires a keyboard tray or when a person with a neck injury really does need arm rests on their chair or, or, or....there are many individual circumstances that require out-of-the-box configurations. The big change for me was what became my primary intervention vs. secondary and tertiary.

Most people still believe they need keyboard trays and arm rests and most people responsible for ergonomic interventions are recommending these as standard protocol when they may be unnecessary and in fact may cause other risk factors such as over-reaching to access the desk top for making a brief notation or answering the phone. But they keep recommending them because that is what they are used to doing. It's too hard to stay open-minded to changing the way you do things and much easier to just keep on doing what you know. In addition, it is a waste of money, cutting into profits, AND a waste of materials, adding to our pollution problems.

I will keep my eye out for new research and will change what I recommend accordingly. I hope you do too!