The humble footrest

In office environments, we are often asked for recommendations for footrests. Does everyone need one? What height? Should they pivot? Massage the feet?



In our opinion, the **ultimate footrest is the floor**. If the workstation can be adjusted so that the worker has firm support for the feet on the floor, then this will almost always be the most comfortable arrangement. By "firm" support, we mean that s/he can move the chair forward without pulling on the desk…most people like their seat a little too high, which creates pressure on the back of the thigh, which in turn leads to

slouching or perching on the edge of the chair. With the feet on the floor, the worker has foot support at the computer, desk, and all places in between. Even getting in and out of the chair is easy!

If the work station is too high and can't be adjusted, then footrests may be needed. Footrests, plural? Usually, yes. If a worker has a computer AND a separate writing surface at his/her desk, s/he likely moves the chair to work for a spell at the computer, and then for a while at the desk. If the feet need support at one station, they need support at the other as



well. We would never endorse a plan that involves moving the footrest between these stations, or raising and lowering the chair every time the worker switches from computer to desk work. These types of recommendations get ignored, and you may as well not provide a footrest at all. The worker will end up perching (as shown at left), slouching (as shown at right), or resting his/her feet on the casters, while working without the footrest. S/he likely will never sit back into the chair properly when s/he moves back to the station where the footrest is available.



So, if you need a footrest, which one should you choose? It needs to be wide enough to support the feet in a relaxed position. For most people, a width (side to side) of 41 cm (16 inches) is sufficient, but recognize that some people have wider hips, and therefore need a

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Inspiring, building, and supporting partnership between your organisation and our innovative team to advance eronomics excellence.

Our team:

Carrie Taylor Van Velzer M.Sc., CCPE, CPE Principal Ergonomist

Karen Hoodless M.Eng., CCPE, CPE Operations Manager/Ergonomist

Annie Barnwell MSc., CCPE Ergonomist, London, ON

Andrea Miklavcic B.Sc.(Hon.Kin.) Ergonomist, Mississauga, ON

Samantha Molenaar B.Sc. (Hon.Kin.) AE Candidate Ergonomist, Ayr, ON

Colin McKinnon MSc., AE Candidate Ergonomist, Ayr, ON

All of our ergonomists are members of:



Association of Canadian Ergonomists Association Canadienne d'Ergonomie

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wider footrest to support the feet in a relaxed position. (Try keeping your feet held together for 5 minutes and see how it feels!)

The front to back dimension needs to be sufficient to support the full foot (typically 30 cm). The surface should be non-slip. Height is the trickiest parameter. The footrest needs to adjust to exactly the height that will allow the worker to sit with NO pressure on the back of the thigh, but without striking the knees on the bottom of the keyboard tray or work surface. If work surfaces don't adjust, we adjust the seat pan to accommodate the position of the arms first. Raise or lower the seat to ensure that the arms are relaxed at the side of the body (elbows against the seam of the shirt, bent at 90 degrees) and the wrists are straight while working at the keyboard. For desk work, we typically want the work surface a bit higher, so the forearms are supported while writing. Measure the height of the chair while it is raised to a comfortable height, lower the seat until you have firm foot support on the floor, measure again, and calculate the difference in heights. This is your ideal footrest height dimension.) In the interim, with the seat height raised, you can support the feet on stacks of 11x17" paper until you find just the right height to allow firm support.

Choosing a footrest in the ideal dimension is not as easy as it sounds. Many catalogues describe footrests as "adjustable". They often mean "angle-adjustable", not height-adjustable. Even an inch too high or too low will make a big difference to the worker. If the catalogue does not specify, ensure that you will be able to return the footrest if it does not meet the

worker's needs. Footrests with removable block "legs" are often the best design, especially when you need a very low footrest (2-5 cm), because they can be used with no



legs at all. (The one shown at right is available from www.isegroup.com.) Remember, a footrest that is too high will be awkward, because some people will strike their knees on the bottom of the keyboard or desk.

Should it pivot? We promote movement at work, and so a pivoting footrest might help to keep people moving in their seats. However, the footrest can't do its job if it doesn't support the weight of the feet and legs, so if the user needs to continuously work to hold the feet on the footrest, fatigue and frustration will soon set in. If the footrest pivots, or angles, the user should be able to lock it into a comfortable position if desired. The footrest should be constructed of sturdy enough material to allow the worker to rest the weight of the legs on it.

Does it make a difference whether workers wear high heels or flat shoes? Yes it does! Angled footrests can neutralize the awkward ankle posture that results when heels are worn, as shown at right. An adjustable footrest can be used



when a worker wears flat shoes, and removed when heels are worn. We always ask that workers wear the lowest heel that they would wear to work, during an office ergo assessment, so we can ensure that the feet will always be supported. A heel will raise the back of the foot slightly, but the foot will still be supported. (We think having the knee a bit too high is preferable to having the feet not supported.)

In an industrial or manufacturing setting, sit/stand stations should be provided with footrests so that the workers' feet can be supported while they are seated at a raised work table. Industrial footrests are typically higher than an office footrest. The same design parameters apply in an



industrial setting. However, as with any shared work station, ease of adjustability becomes critical. If workers will need to adjust the footrest between shifts, or at every job rotation, then it needs to adjust within seconds, with minimal effort. (Awkward postures for footrest adjustment are fairly certain, given that footrests are *under* the worksurface!) The footrest shown above right is also available from www.ise-group.com.



TEI people news

Annie will be returning from her maternity leave in mid-September. Justin left in August to attend medical school. Colin got married in August, and Samantha's big day is planned for September.

Our "new" team is shown above (front: Carrie, second row: Annie and Karen, back row: Samantha, Colin, and Andrea).

\sim Clarification on Certification



Feedback received after our last newsletter indicates that we may have offended some kinesiologists who practice ergonomics without being "certified" through the Canadian College for

the Certification of Professional Ergonomists (CCCPE). We did not intend to imply that these folks should not call themselves "ergonomists". While it's true that we wish more practicing ergonomists would pursue certification, we don't believe that certification is required in order to practice. The title "ergonomist" is not currently regulated, and anyone can therefore use that term. We hope that if you use the title "ergonomist", that you do indeed have the academic background, and the experience, to practice, or that you limit your practice to your own areas of expertise. (In fact, our own ergonomists, while they are waiting for their certification applications to be reviewed, are called "ergonomists".) However, the term "certified ergonomist" (CCPE in Canada,

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and CPE in the US) should be limited only to those who have legitimately pursued certification. Companies who are comparing various ergonomists' quotes for work to be done, should consider the ergo certification requirements, and evaluate whether a candidate who is not certified can meet their needs. At our company, for example, when a not-yet-certified ergonomist is completing the work, a CCPE always oversees the project. A "certified kinesiologist" may or may not have the academic background to practice ergonomics; to our knowledge, *none* of the universities *require* ergonomics coursework to obtain a kin degree.



Wrapping up heat stress season

Before you file away your heat readings, take a closer look. A review of the following will help you prepare for next

year:

- What areas of your facility required heat relief first? Consider re-directing any available cool air, relocating the work station, or reducing job demands in these areas by reducing walking or implementing job rotation with lighter jobs.
- What areas of your facility consistently reported the same levels of heat? Consider combining the areas next year so you can take fewer hourly readings.
- Did anyone report any signs of heat-related illness?
 Where were the majority of the complaints? Review the circumstances carefully to see if you can modify the jobs, or the heat load, before next year.

Pulling me down After Before 11.6 kg 7.1 kg pull force pull force Concern: Solution: The associate pulled a lever with The lever was lengthened to one hand, using an average increase the mechanical force of 11.6 kg, about once advantage, reducing the pull every 2 minutes, to move a part force to 7.1 kg. The pull force is now within ergonomic from the robot rails into the rework fixture. This pull force guidelines. The associates exceeded ergo (strength) confirmed that the engineering guidelines for the shoulder and change made the lever feel

easier to pull.

Success story at DynaMig in Stratford:

 Did you implement any new fans or cooling units this year? Review your records to see if they were effective in reducing the heat levels in these areas.

elbow.

Tally up the downtime that you incurred for heat relief this year. (Remember that this was a particularly hot summer, with a cool spring.) Use the data to explore the effects of reducing job demands via layout changes, tag relief, job rotation, or other improvements. (If the jobs were "light" instead of "moderate", how much downtime would you have incurred?) Similarly, explore the effect of reducing the temperature by a half-degree with strategically placed cooling units. Would these changes be cost-justified?

Remember, it's much easier to plan for heat stress over the winter months, before temperatures (and tempers) rise. Call us for assistance in reducing job demands, or developing or evaluating your heat stress prevention program.



Check your mailing label....win a sweatshirt!

We held a draw to give a sweatshirt to one of the many people who sent us address updates. Congratulations to **Jennifer Lennon**, of Loblaw Companies Limited, who earned a sweatshirt this month. If your mailing label is incorrect, please fax (519 632 7469) or email us (info@taylordergo.com) with a correction.



Ergonomics & Performance: Health, safety and beyond Ergonomie et performance : In santé, la sécurité et mirre au-delé

Association of Canadian Ergonomists' Annual Conference London, Ontario, October 17 to 20, 2011

This year's conference includes workshops on Monday, a student design competition, three concurrent presentation streams running from Tuesday to Thursday (including four presentations from Taylor'd Ergo!) and two post-conference tours on Thursday afternoon. Visit <u>www.ace-ergocanada.ca</u> to register for the conference, or to obtain additional conference details. On behalf of the organizing committee, we hope to see you there!

Karen Hoodless, 2011 Conference Chair

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Ergo Design

Wednesday, Sept 21 Ayr, Ontario

Participants, including engineers, safety coordinators, and ergo team members, will learn to incorporate effective ergonomic design features, using our detailed design guidelines.

You will learn to:

- Use key tools included in the tool box, such as discomfort surveys, feedback surveys, workplace inspection checklists, computer work station checklists, and more.
- □ Use design guidelines to identify the **specifications** of a solution. In particular, you will learn to apply the guidelines for working **height**, **reach**, and **clearance**, through a variety of case studies. The course includes **detailed ergo design guidelines** for the following:

Hand work
Hand tool design
Lighting
Mechanical assists
Personal protective equipment
Seating
Work design
Work flow/conveyors

Lifting tips Train-the-trainer

Thursday, October 27 Ayr (Cambridge), Ontario

Participants will get hands-on practice lifting using 15 proper lifting techniques. They will also learn to effectively coach others to use the tips.

You will learn to:

- Describe the types of injuries associated with manual handling
- □ Identify workplace and individual factors that may **discourage** proper lifting technique
- □ Lift using 15 safe techniques/tips
- □ Identify other management control measures, including **policies** and **engineering** controls
- □ Customise our **coaching plans** to take back to your facility
- □ Customise "takeaways" to reinforce each lifting tip (posters, handouts, puzzles, etc.)

To register, complete and fax this page to 519 632 7469, with your purchase order number, or mail it with a cheque to Taylor'd Ergonomics, Box 1107, Ayr, ON N0B 1E0. Your registration will be **confirmed by fax or email**, **1-2 weeks before the course.** Register early, as space is limited. We do not accept credit card payment. Cancellations within one week of the workshop are subject to a \$100 charge; substitutions are always welcome.

Office Ergo Tuesday, November 15

London, Ontario

This one-day session will allow you to identify ergo issues at office work stations and develop cost-effective recommendations to address them.

You will learn to:

- Adjust a chair to optimise employee comfort and productivity
- □ Optimise keyboard, mouse, desk, shelf, document and monitor heights
- □ Identify where **sit/stand work stations** are appropriate, and how to use them
- □ Conduct a "desktop inventory" and organise a work space
- □ Optimise **work practices**, using work pacing, ambi-dextrous habits, stretch breaks, and "dump the junk" habits
- □ Minimise visual concerns, by optimising viewing distance, lighting, glare, screen parameters, and eye care
- □ Identify when "ergo appliances", such as wrist rests, wrist supports, head sets, ergo mice, and laptop accessories are appropriate
- Design new offices and work stations with consideration of efficiency, noise, temperature and traffic flow
- □ Use the "Office Ergo Quick Reference" (checklist)

Return-to-Work Workshop

Thursday, November 22 Ayr (Cambridge), Ontario

This one-day session will allow you to effectively bring injured workers back to work (or, better yet, help them to stay-at-work)

You will learn to:

- □ Understand the importance of early and safe return-to-work (RTW)
- Identify when and where physical demands descriptions should be used, and how to interpret and extract the relevant information, including discriminating between "essential" and non-essential duties
- □ Interpret the WSIB's **"Functional Abilities Form"** and other returnto-work documents, including specific terminology
- □ **Communicate** with Health Care Providers when necessary, in order to clarify ambiguous work restrictions
- □ **Evaluate** the match between the restricted worker and several jobs using case study examples
- Develop accommodations in order to modify a job to meet a worker's capabilities
- □ Write a concise restriction review report
- Identify when and how to get help from an ergonomist or other professional

Name(s):		Company:		
Phone:	Fax:	e-mail:	P.O.# (if no PO, please s	end cheque with registration)
Please register me for the	 Ergo Design on Sept 21, \$425+hst Office Ergo on Nov 15, \$375+hst 	 Lifting tips train-the-tra Return-to-work on Nor 	ainer on Oct 27, \$370+h v 22, \$350+hst	nst HST#89765 6377
				web page: www.taylordergo.com 55.7469 632-7469 7469

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