Suggestions for the process, with ergonomic buddies

1. Ask the person to work as usual

Look to see what's really obvious -- e.g., a cricked neck, sitting half-way on the chair, arms and/or shoulders stretched out. Then ask the person to try to relax/get more comfortable.

Observed and felt movements offer clues about needed adjustments. For example, if someone drops their head, the monitor likely is too high; if someone brings their arms closer to their body, they are reaching too far for the keyboard, mouse/pointer/trackball or other objects.

A word of caution about doing this. "Relaxing" or "getting comfortable" requires the person to have a good idea about where they physically are in space (proprioception) and what is happening to their body [the kinesthetic sense, or the ability to feel what muscles and other musculoskeletal system parts are (not) doing]. Difficulties with both senses are common. For example, people may not realise that they are sitting in a twisted or perching position, or that their neck is cricked.

Some people seem to be in an awkward or static position after being invited to "relax" or "get comfortable". If so, it may be helpful to demonstrate what they are doing (with a little exaggeration) and a more comfortable position.

Follow that with an invitation to try to follow the example. If the person is not sitting all the way back in the chair, invite them to move to get feedback and support from the chair back; if they feel awkward doing that, suggest they do it once to get an idea of how it might feel. (They can work towards this over time, helped out by visualisation of where they want to end up sitting and/or verbal feedback from an "ergonomic buddy".)

2. To make adjustments ..

2.1 Try to adjust the height of the <u>chair</u> back so that the lumbar support fits into the small of the person's back. (It is impossible if the back cannot be moved high enough.) This may also require

moving the pan of the seat (what we sit on), to provide adequate space for a comfortable fit. It may also be a good idea to play with the tilt of the seat pan, and of the seat itself.



Check the fit between the rest of the chair back and the person (see photo). Can they sit with their shoulders evenly against the chair back, or are they off-kilter in some way? The chair back may be shaped (e.g., indented or not broad enough) so that the person's back does not fit right against, and into, the top part.

2.2 Once the person can sit comfortably in a chair (forgetting about its height for the moment), start with the <u>fixed surface</u> that determines the position of the monitor and keyboard tray.

Try to bring the chair closer to the keyboard and monitor, rather than having the person reach, twist, etc. (e.g., move their chair closer to the keyboard, rather than reaching out with arms and shoulders). Once this is done, adjust the screen/monitor height and angle, and the keyboard tray angle and then the chair height.

2.3 <u>Screens or monitors</u> should be on a surface, platform or arm that can be moved up and down or at an angle. Some ergonomic desks actually have separate surfaces that can be moved these ways. Otherwise, making a combination of adjustments to the chair height and monitor height may be needed.

The screen or monitor should be about an arm's length away, as the person is seated comfortably and slightly reclined. The goal is to see the upper part of the screen/monitor clearly by bending the neck slightly downwards. One ergonomics specialist suggests this method to get the results:

- ✓ sit back in your chair after it's adjusted for the keyboard height,
- ✓ lean back a bit so there's an angle of about 100-110 degrees at the hips,
- ✓ hold your right arm out straight so your middle finger almost touches the centre of the screen, and
- ✓ from that position, make minor changes to screen height and angle to suit your needs.

For those wearing bi-focal or progressive lenses, they suggest reclining at the same angle and tilting the monitor backwards. Otherwise, these individuals might want "computer glasses" with focal lengths that allow them to have a comfortable neck angle at each computer screen/monitor they use. (These kinds of glasses let people read, and see the monitor and people nearby clearly.)



The numbers refer to the 12 points about computer work stations at Cornell University's Ergonomics Web materials, from http://ergo.human.cornell.edu/DEA6510/dea6 512k/ergo12tips.html.

2.4 Use the SOBANE materials for observation of ergonomic hazards as a way to have conversations, take notes and remember points to check. The format includes space for recommendations,

where one can record short-term changes that are made and long-term ones that should be made.¹

The hand-out (*Ergonomic hazards - some myths & realities. Computer work stations: convention versus current wisdom*) also provides guide and a useful reminder sheet for later use.

2.5 Note a recent change to those recommendations -- about where the <u>mouse</u> or <u>trackball</u> should be. Several independent authorities now say it



should go just above the keyboard in line with the person's dominant hand (the one they use most often). See the illustration at the left.

2.6 Work through the materials, checking for the angle of the wrists and forearms and what support the feet need, if any. By the time you're done, you should have covered all the points in the diagram to the left.

3. Fixing things

Fixing the hazards may require major purchases or changes in how things are done. In the meantime, short-term work-arounds and creative approaches can help. For example:

- ✓ before buying a foot rest, find binders or telephone books that can be used temporarily to give an idea of the height(s) and width required for a permanent foot rest;
- ✓ for wrist support, get rid of hard surfaces and use a tea towel or something with some give to it that is no higher than the edge of the keyboard; and
- ✓ tuck the keyboard "feet" so it can lie flat and don't force wrists to bend (except for "hunt and peck" typists).

Dorothy Wigmore: January, 2015

Adapted SOBANE materials are in *Seeing the* workplace New Eyes guide (http://safemanitoba.com/sites/default/files/uploads/ seeing the workplace with new eyes guide_08.pdf) and the latest CSA ergonomics standard.