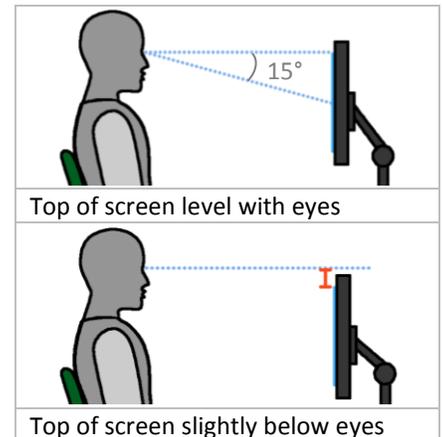


# Monitor Positioning

## SCREEN HEIGHT

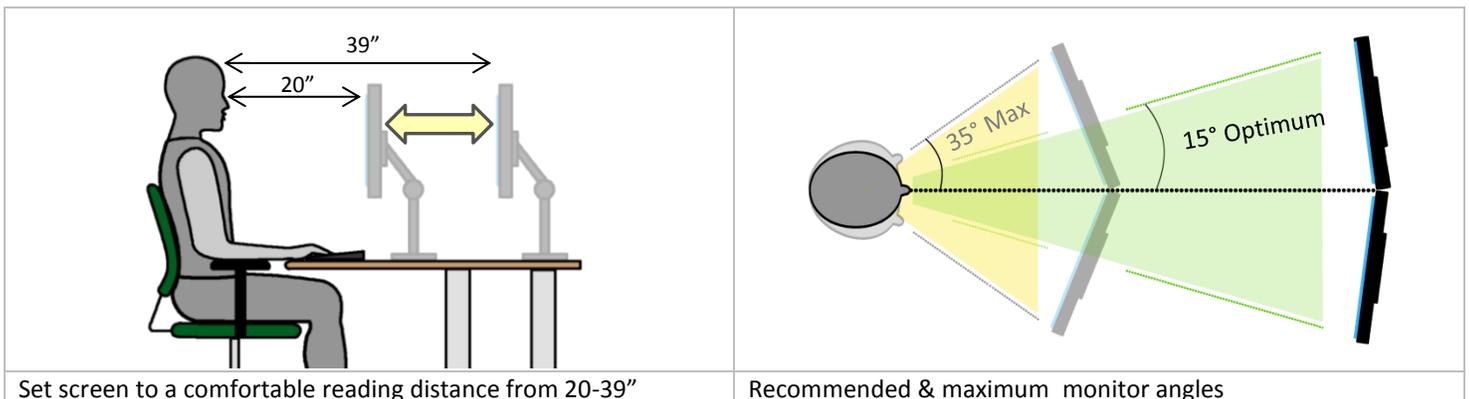
The top of the screen should be at eye level or 1-2" below. Our eyes have a natural downward cast of about 15° so this will put your eyes in the middle of the screen where they spend most of the time. A high monitor will lead to tilting your head back, quickly fatiguing the neck muscles and stressing intervertebral discs in your neck. It will also cause you to open your eyes wider and reduce your blinking rate, contributing to dry eyes and eye fatigue. Everyone is a little different, so pay attention to the position of your neck once you get "into the zone" working.

Wear prescription lenses? See the Eyewear section below to see how they may affect screen positioning.



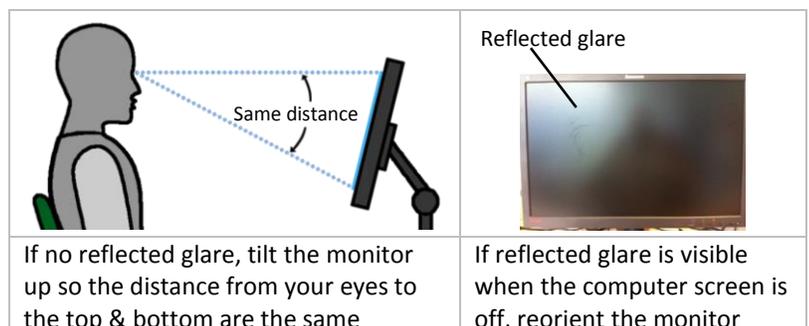
## SCREEN DISTANCE

Monitors are getting bigger and for many dual monitors have become the norm. CSA (2017) recommends a screen distance of 20-39" from the eyes. Adjust the distance so you can comfortably read the screen characters without craning your neck forward (comfortable means a font size that is 2.5 times larger than the smallest you can read). Microsoft Windows and most programs allow you to adjust the display font size. To minimize neck rotation, the outside edges of the screen should be within 15° of centre, with an absolute maximum of 35°. This can be difficult to achieve with large monitors, since two 22" widescreen monitors require a distance of 45" from the eyes to stay within 15°! Nonetheless, push the monitors back considerably. Eyewear may also affect the distance required—see the Eyewear section below.



## MONITOR TILT OR NO TILT?

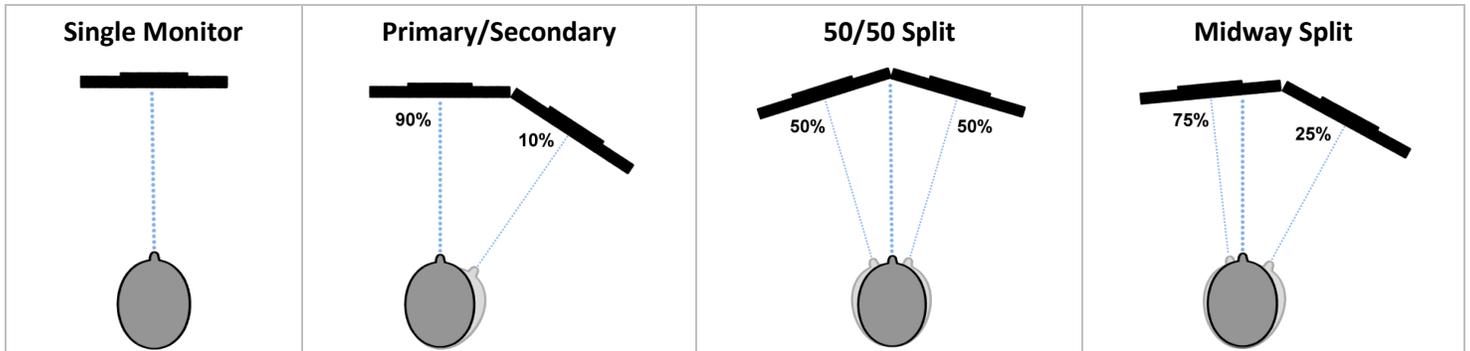
Your screen should be tilted up slightly if this does not create glare, as a screen perpendicular to your gaze maximizes how large characters appear. To check for glare, once the monitor is in position, turn it off: if you see any patches of reflected light on the black screen (as in the image to the right), tilt it back down and/or reposition it until they disappear. If glare is a problem, keep monitors vertical, as the benefits of a tilted screen are relatively minor. Reflected glare washes out screen contrast and can be a source of irritation causing you to unconsciously adopt an awkward posture to reduce it.



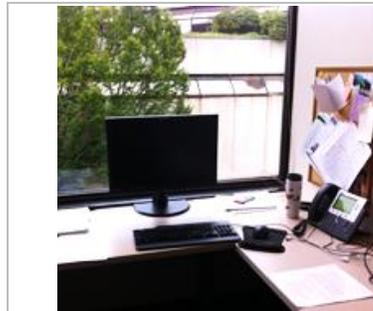
## HORIZONTAL LOCATION

If you have a *single monitor* set up, centre the monitor with your body to minimize neck rotation. Larger screens and *dual monitors* require more neck rotation, and therefore have greater potential for neck stress. For dual monitors, based on the percentage of time spent looking at each of the screens on a typical day, match your monitor set up with the one of the images below. If you use a primary/secondary monitor set up, place the secondary monitor on the side of your

dominant eye. Not sure which eye is dominant? Try this [Dominant Eye Test](#). If in doubt, put the secondary monitor on the right. Also, keep the monitors as close together as possible to minimize neck rotation.



If you have windows in your office, be careful where your monitors are in relation to them. A window directly behind your monitor may cause difficulties for your eyes and contribute to fatigue due to the contrasting light levels. Blinds help, but it is better to position your computer workstation off to one side, as in the image to the right. Also, beware of glare on the screen from windows behind you. Use the reflected glare check above.



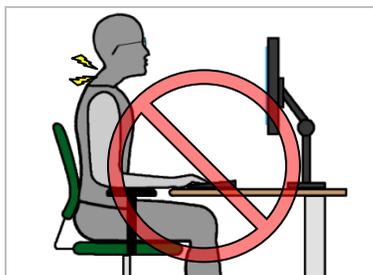
Windows are much brighter than the screen



Moving monitor to side balances brightness much better

## EYEWEAR

Make sure your eyewear is the best fit for the work that you do. If you wear prescription lenses, the prescription will dictate the distance of the screen from your eyes so be sure to let your optometrist know the nature of your work and the preferred distance to your screen. If your work is strictly computer focussed, computer glasses (with a single focal distance for the screen) may work best; if you work with the computer and paper documents together, occupational progressive addition lenses (OPALs) may be a better option, with the top portion set for computer distance and the bottom with a shorter distance more typical for paperwork.



**WARNING!** Bifocals (and often progressive lenses) lead to leaning & craning the neck forward, tilting the head back and peering through the bottom of the lenses. Make sure you get the right eyewear!

### *Bifocals*

Standard bifocals tend to be problematic for computer users. Most bifocals have the top of the lens for distance vision and the bottom of the lens for reading (i.e. close up). When it comes to computer work, this results in leaning away from the backrest and craning the neck forward to get closer to the screen, and tilting the head back to peer through the bottom of the lenses—a recipe for neck pain, back pain and headaches. Although not recommended for regular computer work, in a pinch you can move your monitor closer and lower it to help with adopting a more neutral neck posture.

### *Progressive Lenses*

Some people use progressive lenses, which have 3 general areas blending from one to the next: the top for distance, the bottom for close-up paperwork, and in between for the middle distance typically used to view the screen. Many people find this middle portion of the lens difficult to use as the lens' "sweet spot" for screen distance is very narrow. Consequently, people often tilt the head back and peer through the bottom of

the lens, stressing the neck. Some people can get them to work, but many cannot. If you cannot, 2 pairs of glasses may be best: a pair of OPALs and a pair for distance.

## REFERENCES

Canadian Standards Association, *Office Ergonomics - An Application Standard for Workplace Ergonomics (CSA-Z412-17)*, Toronto, ON: CSA Group, 2017.

J. Anshel, *Visual Ergonomics Handbook*, Boca Raton, FL: Taylor & Francis Group, 2005.