Focus on vision

Optometrist Daniel Hardiman-McCartney suggests ways you can use screens more comfortably, and Richard Lackey puts his advice into practice

Daniel Hardiman-McCartney has over 20 years' experience working in optics. Daniel is an optometrist, spokesperson for and clinical adviser to the College of Optometrists, the UK professional body for optometrists. He practises in London and East Anglia and has a specialist interest in glaucoma.

The blue light from screens won't, as far as we know, harm your eyes – provided you use them wisely. A lot of people are worried that screens will actually damage their vision, so that they get a condition like macular degeneration or cataracts, and the good news is that no, they won't. But tiredness is a different issue, and you can certainly tire and push your eyes to the limit when you are looking at things close up. However, there's a lot you can do to improve matters!

The words on the screen

First, it's important to get your screen monitor at the right height and distance. If it's positioned too close, your eyes have to focus excessively, and if it's too far away, it's difficult to focus. The optimal distance is about 50 to 75 cm away – so that's about arm's length. Height-wise, you want it ideally so the top of the monitor is parallel to the position of your eyes, so you're glancing slightly down. When it's at the correct height your eyes can converge more accurately, so you may also have a faster reading speed. That means if you're working on a laptop it's really worth getting an external monitor to plug it into, because using a laptop screen long-term really isn't good for your eyes.

Then there's the size of the font. There's a real temptation to cram as many words as possible on to the screen, especially since we're now so used to reading on a phone. However, a lot of work goes into ensuring that the size and style of text on a phone is readable. On a screen, I encourage everyone to work at 150 per cent or more, and/or to make a full-page display. That makes it easier, also, for the eye muscles to 'track' around the screen so they get less tired. And it's particularly relevant if you've got one monitor but you're working on two separate documents, flicking from one to the other; you want to make it as easy as possible for your eyes to switch. There's an awful lot of processing involved – if it's smaller, it may take your eyes longer, which tires and strains the muscles and you'll also be less accurate. A bigger size is both clearer and easier to track.

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You also need to look away from the screen regularly. That can be hard to remember (it's a good idea to set a timer or an app), but it's important, not least because when you're looking at a screen you aren't blinking properly. Normally when you blink, your upper and lower lids meet so that your eyes are being washed and cleaned. With a screen, when you blink, the lids aren't meeting completely so your eyes are left with a pool of stale fluid in the middle that isn't washed away. We think that's why computer users often end up with sore eyes.

Through a glass, clearly

Even if you need a very small prescription, have regular sight tests. When you're looking at details all the time, it's important. 'Off the shelf' glasses aren't good enough for this kind of work because the lens is always in the same place, rather than customised for your own vision. If you're using a computer at work, your employer will be required to contribute to your test, and if you're freelance, it's tax-deductible.

If you're under 40, it's fine to have a sight test once every five years or so. And if you are recommended glasses at this age they'll probably be 'single-vision', which you can find very cheaply if you need to. Over 40, it should be every couple of years because everyone's eyes change at this stage in your life, even if you've always had perfect vision before. Also, your risk of eye conditions like glaucoma goes up with age too, and a test will pick these up. At this age, you're often recommended varifocals, and this is quite complicated – there are hundreds of designs – so my advice is to talk to your optometrist and explain your set-up. There are roughly three grades – budget, mid-range and bespoke – and the evidence is that 'mid-range free-form optimised' is usually a good option (there isn't much difference between that and bespoke); you're getting a good-quality lens, with a wide area for computer use. But tell them what you're using, and show them the distance between your screen and eyes too.

And if you're recommended glasses for the computer, do wear them. You'll be more comfortable and more productive as well.

Daniel Hardiman-McCartney

20/20/20

The rule of thumb is 20/20/20: every 20 minutes on a screen, look at something 20 feet away (that's around six metres) for 20 seconds. That just relaxes your eye muscles into their natural state, where they're effectively focusing on infinity. It also enables you to reset the 'white balance', by giving them the opportunity to acclimatise to the light of the room.

12-13 at a glance V5.indd 12 21/06/2018 22:15

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Making changes

I'm fortunate in that I haven't experienced any major eye problems, just a little tiredness after long days. Yet I'm concerned that spending so much time in front of a computer screen could damage my eyes. So what should I be doing? And how can I implement Daniel's expert advice?

Going external

I started by switching to an external monitor. As I've flitted between co-working offices across Europe over recent years, my laptop has been my trusted workhorse, although I usually use a separate keyboard as well, since that is better for my back. Now I'm settled in a single co-working office in London, I can afford to store more office paraphernalia. I opted for a 17-inch screen that connects to my laptop. After playing with the settings, I can close the laptop lid and put it out of the way to work only on the monitor. This means that I am no longer looking so far downwards.

Next up, I decided to try the eyeCare app to give me reminders every 20 minutes (it is fully customisable). I tend to translate in 30-minute bursts but often linger on emails after these bursts, so I know I'm breaking the 20/20/20 rule. This app runs in the background on your computer (PC or Mac) and gives you an on-screen reminder. I found 20-minute bursts were a little short for me, although I enjoyed having more regular breaks. Try it for yourself on xl8.link/t5.

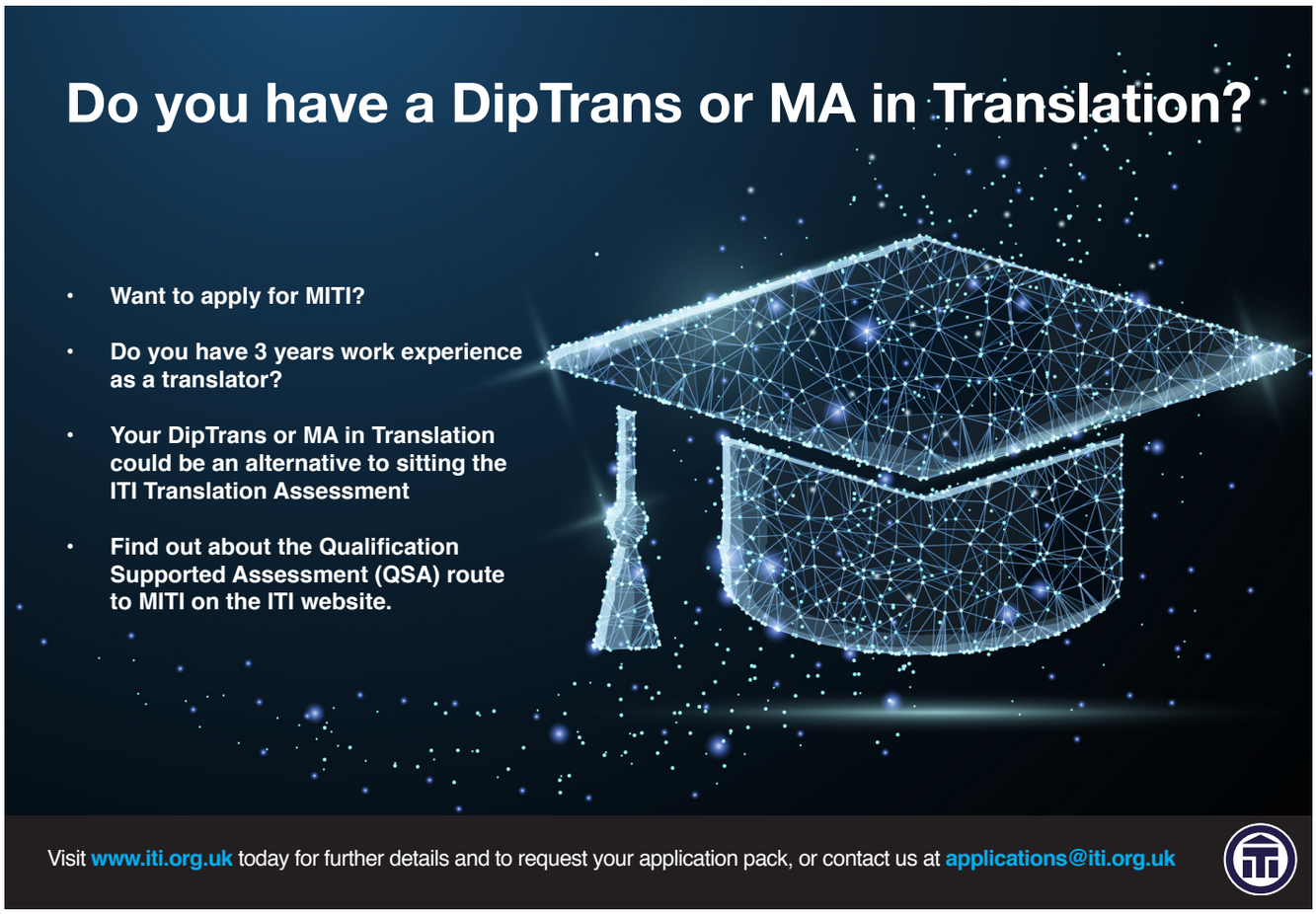
> *If you spend just a few minutes playing with screen features, you can make great improvements to your work environment*

World turned upside down

What else can you do? I've long been a fan of using the inverted colours feature in Windows (see the July-August 2017 *ITI Bulletin*) when working later in the day or in low lighting. This simple tool is called Magnifier and converts your screen into a black background with white text. Newer Androids and iPhones also have inverted colours buttons easily accessible at the top of the screen; or you can activate the 'adaptive brightness' feature. The Twitter app even has a setting to invert colours when it's dark outside! If you spend just a few minutes playing with these features, you can can make great improvements to your work environment.

Finally, I realised that I am due another eye test so I'm booked in for an appointment. At £59, it is a minor business expense for what will hopefully safeguard these valuable assets over the long term.

Richard Lackey



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