

# LOCKDOWN

## Greater distance acuity

**Bill Harvey** discovers how it is possible to take an accurate acuity across a video sharing platform. Here is a step-by-step guide for anyone who has a licensed electronic chart system on their computer

Communicating with patients, either by phone or video sharing platforms such as Microsoft Teams and Zoom, has become second nature to most of us since the first lockdown hit almost one year ago. Whether for reassurance, assessing the nature of any complaint to triage, or assessing whether a patient merits an eye examination before reissuing a prescription, it is important to have a clear idea of vision and corrected acuity.

After initial attempts at explaining self-assessment using magazines or newspapers a patient might have lying around, most of us have moved to sending out some form of acuity chart, such as the 3m chart on the College of Optometrists website.<sup>1</sup> This can be printed and posted (figure 1), or emailed as a PDF for the patient to print themselves. Some of the problems of resizing, as might occur for example during printing, have been addressed by simple instructions such as those offered by the Home Acuity Test (HAT).<sup>2</sup> Indeed, good old Michael Crossland and colleagues have assessed the HAT and found a good correlation with in-practice acuity testing.<sup>3</sup>

That said, the process is a little cumbersome, open to misuse by the patient, and lacks the control available in-practice allowing letter randomisation, highlighting, single to line target change and alternative (to letters) target options.

For many years now, I have used the Thomson Software Solutions Test Chart (originally 2000, now 2020). So, I 'Zoomed'

Professor David Thomson recently to see if there was any of using such a chart system over video conferencing (figure 2). This would, therefore, allow practitioner control over the targets and also open up some of the opportunities for target change already mentioned. The Prof confirmed this was possible, so here is a step-by-step guide to setting it up. This should work for any system you have a licence for. The only requirement is to have it running on the same computer you use for videoconferencing.

### STEP-BY-STEP SET UP

#### Step 1

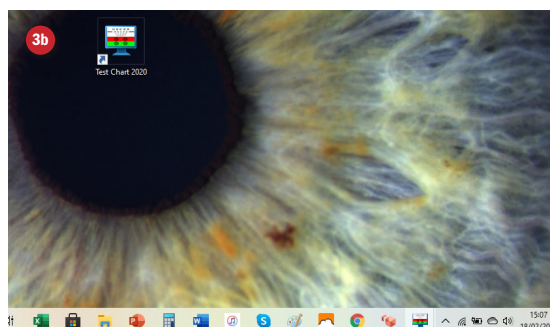
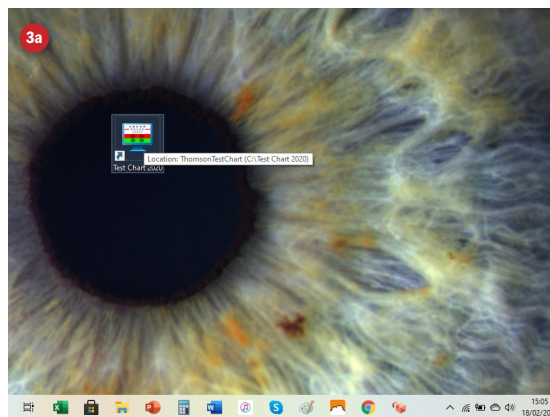
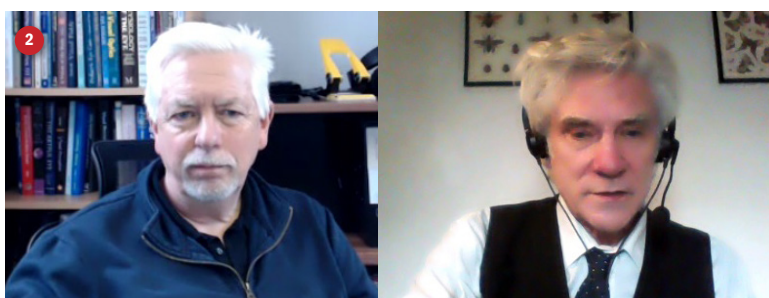
Arrange a videoconference call with the patient at a time that suits. Ask them to have ready a ruler and a measuring tape, ideally one that extends to 3m if possible.

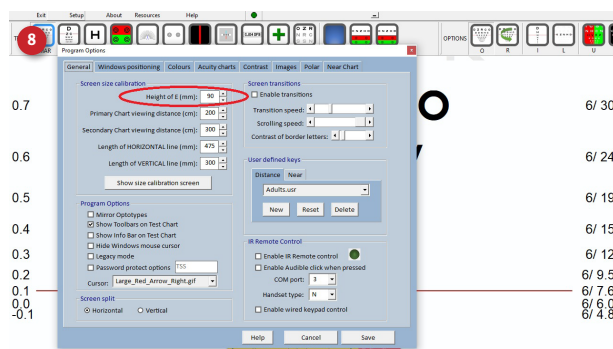
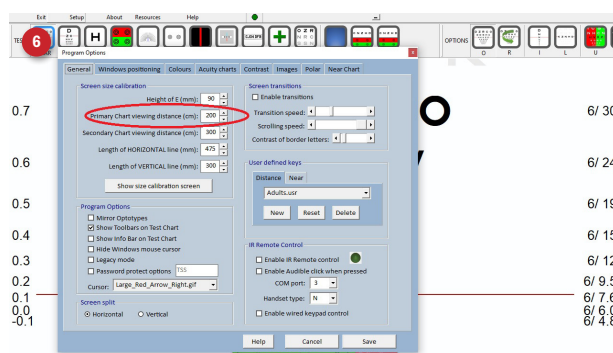
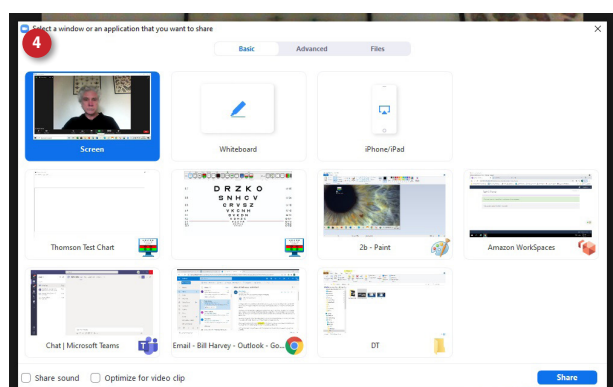
#### Step 2

Open up the electronic acuity program (figure 3a) and then minimise (figure 3b).

#### Step 3

Start the video conference with the patient; I used Zoom but any platform allowing screenshare would work. After establishing the video link, I then clicked on the share screen option which revealed all active folders (figure 4). I selected the tab for the acuity system and clicked to share.



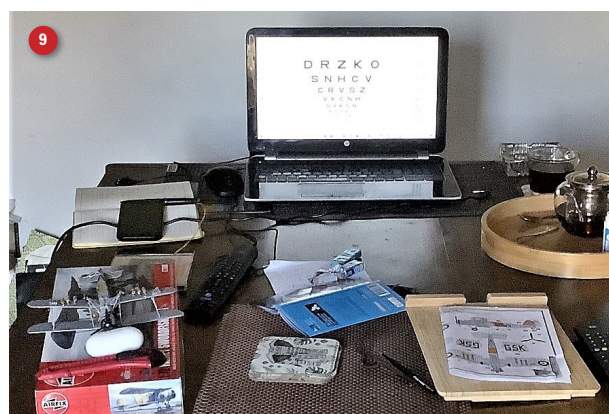
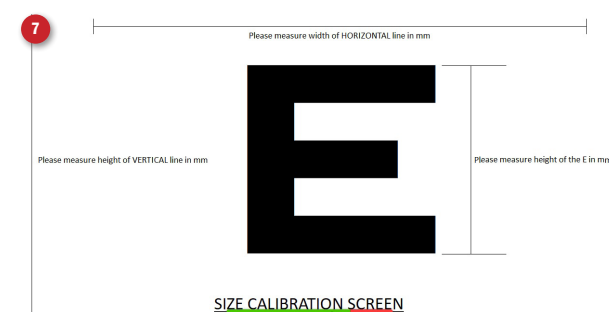
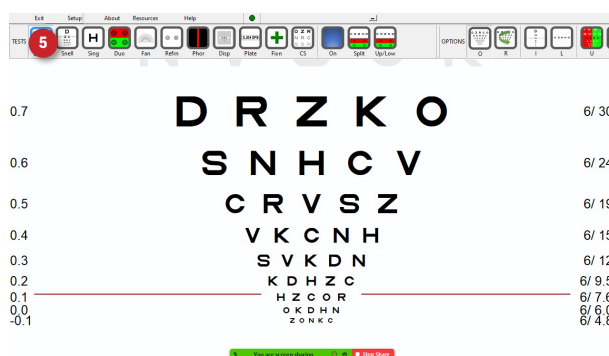


#### Step 4

At this point, the patient can see the acuity chart (figure 5), but it needs to be calibrated to have any chance of accurate measurement. For the Thomson charts, I selected 'setup' and a calibration window opened (figure 6). At this point, I needed to ask the patient how far from their computer they might reasonably be able to stand. I asked them to measure 3m from the screen and to put some keys on the floor to mark this point. The first time I tried this out, the furthest the patient could be was just 2m, so this had to do. I then put this distance into the calibration field (red circle, figure 6).

#### Step 5

I then pressed the button to share the calibration size screen with the patient. This then revealed a large 'E' (figure 7). With their ruler, the patient was asked to measure the height of the letter on screen to the nearest mm. According to the Prof, just measuring the height is enough for good accuracy and keeps things as simple as possible for the patient. I then put this height value into the appropriate field (figure 8). At this point, the full acuity chart is calibrated and showing on the patient's screen. The patient has had to complete just two simple steps; setting a working distance and measuring an on-screen letter.



#### Step 6

Assess the patient's acuity, monocular and binocular. The best results will be if any screen reflections have been avoided, if there are no bright light sources in the same field as the screen, including windows, and that the screen is tilted (if a laptop) to give maximum contrast (figure 9). These steps are easily talked through and the benefit of being able to control the acuity testing absolutely outweighs any hassle these final steps might present. ●

- Further information on Thomson electronic acuity tests available at [www.thomson-software-solutions.com](http://www.thomson-software-solutions.com).

#### REFERENCES

1. Gissland MD, Dekker TM, Hancox J, Lisi M, Wemyss TA, Thomas PBM. Evaluation of a Home-Printable Vision Screening Test for Telemedicine. *JAMA Ophthalmol*. 2021 Jan 7:e205972
2. <https://homeacuitytest.org>
3. Download from; <https://www.college-optometrists.org/uploads/assets/e4899558-1945-49e3-9b3735345fb5a65e/2ba200e5-bed0-4979-90998b72eff71c7d/visual-acuity-chart-for-remote-consultations-14-April-2020.pdf>