Taking good retinal images for DR screening: considerations and practical tips

Taking good retinal images is a vital step in screening for diabetic retinopathy. All measures should be taken to ensure that the images captured are relevant and of sufficiently good quality to ensure that no-one is misdiagnosed.

If the person has difficulty focusing on a fixed point (for example, if they have poor vision or loss of vision in one eye, it may be useful to use an eye patch or eye occluder to cover the affected eye.

3. Position the patient correctly
When using a static camera, the person’s position at the camera can affect the quality of the image. Ensure that they are seated in a comfortable position. The use of a height-adjustable chair or table will help you to position the person’s chin and forehead correctly. Tell them to blink and then keep the eyes wide open until the image is taken. It may be necessary to hold up the eyelid; for example, in people with droopy eyelids. When using a hand-held camera, ensure that both the person and the photographer are in a comfortable position.

4. Keep the lens clean
Keep the camera lens free from anything that may obscure the image, such as eyelashes, dust, saliva droplets from speaking over the lens, or fingerprints – these cause some of the more common artefacts seen in retinal images, making them difficult to grade. Carefully clean the lens according to the manufacturer’s instructions, taking care not to scratch it.

5. Avoid bright light
A room which is brightly lit may cause the image to appear over-exposed at the centre, and darker or opaque at the outer edges. It is therefore better to take the photographs in a darkened room.

Challenges
There are situations where, despite doing your best and taking all precautions, the images are still not good enough to confidently grade the level of diabetic retinopathy. One example is when patients have cataract or corneal opacities that obscure the view of the retina. These patients should be referred to the eye clinic and the images classified as ungradable. Ensure that these patients are followed up and/or are referred back for DR screening after surgery.