



Kowa Information Sheets

Tips for good fundus imaging

Taking good photographs is vital if you are to detect possible pathology and is especially important for the auto analysis of stereo images.

Explain to the patient what is about to happen - that there will be a bright flash and it will leave an after image for a little while. Check that the pupils are adequately dilated. Position the patient comfortably within their chin on the chinrest and forehead against the rest. The correct height is when the patient has to lower their head slightly to place their chin on the rest. This helps keep the forehead against the rest.

Ensure that no stray hairs are in front of the eyes - the patient should be able to open their eyes wide enough to reveal the whole of the pupil - check this. If they cannot, you may need to lift the upper eyelid for them. Sometimes you can ask the patient to assist and do this for you.

Know your camera - read the operating manual.

Keep the camera lens clean - if the front objective lens is not cleaned regularly the contrast of the images will be reduced due to the build up of a film on the lens.

Use internal and external fixation targets as required - some patients find it easier to see the internal target when it is central (macular image) than when it is off to the side (nasal image) and this tends to be worse after they have received the first flash. So if you are taking two images it can be useful to take the peripheral image first and the central image second. Pay attention to the position of the fundus on the monitor. Consider using an external fixation target for the other eye - this is often necessary if you are photographing an eye with poor central vision.

A patch over the 'Good Eye' may help an amblyopic eye (Lazy Eye) to fixate accurately.

Pupil size is important - an adequate pupil size is required for good images. Large Pupils give the best chance of a good photo. You may need a slightly less bright flash to prevent an over-exposed image if the pupils are very large.

If using a non-mydriatic camera, remember to give the pupils sufficient time to recover before taking a photograph of the 2nd eye. Covering the eye that is not being photographed with your hand (or ask the patient to do so) can help the pupil dilate a little more.

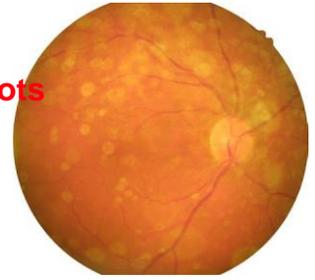
Small pupils can give rise to dark or grainy photos. Try increasing the flash level or leaving the pupils to dilate a little longer. Change to the small pupil setting on the camera if necessary. Consider instilling using mydriatic drops. These will normally take 20-30 minutes to achieve adequate dilation. If the pupils do not enlarge further, then try 'Off Axis' photography to move any dark zones away from the macular and optic disc, or use the small pupil setting if your camera has one.

Try 'Off Axis' photography for lens or corneal opacities - if you take the photo slightly to the side of the opacity, then sometimes you can keep the resulting hazy zone away from the disc and macular.

Asteroid Hyalosis

Vitreous Opacities like Asteroid Hyalosis and floaters cause hazy spots

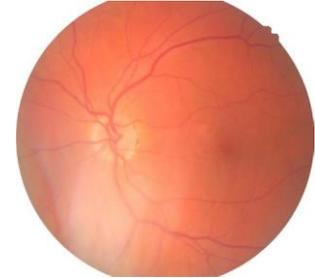
- it will not always be possible to improve image quality. Ask the patient to look to the left then right to move opacities around. Asteroid hyalosis consists of calcium soaps which collect in the vitreous. By adjusting the focus you can blur the retina and bring some of the golden specks into sharper focus.



Eyelashes

Hairs and eyelashes cause streaks across the photo -

so keep long fringes away from the eyes, and try holding the lids wider apart for long eye lashes.



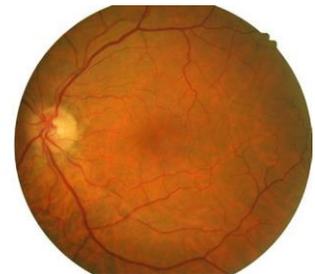
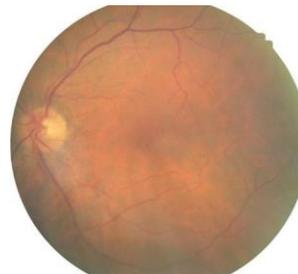
Flash level is important - Adjust it up or down to see how it affects image quality and re-adjust where necessary. You will get better with experience.

Dense cataract and other ocular disorders affecting clarity of the optical media may mean that a good photo cannot be taken.

Dry eyes can reduce the contrast and clarity of images. If the working distance spots start to haze up in the viewfinder, then suspect dry eyes. Either ask the patient to blink just before taking a photograph or instil some artificial tears.

Before blink

After blink



Anterior photos can be taken if required and is a good way of documenting cataract and other anterior pathology.

There are 2 methods:

1. Use the auxiliary plus lens and the camera in the initial external eye view position. Focus by eye on the monitor and take the picture.
2. Wind the focus to its extreme position, switch the camera to fundus view and then move the patient back. Either place your hand over the top of the brow rest and push the patient's forehead back, or ask the patient to make a fist and place it between their forehead and the brow rest. You should now find the external eye close to being in focus. You may now see the split focus bars against the iris or upper lid. Align these using fore and aft movement and the image should be in good focus. You will need to increase the flash intensity and/or increase the camera sensitivity (ISO value) due to the increased range.

