

Nidek RSD 330 Troubleshooting

TIPS FOR CHALLENGING PATIENTS



The Nidek RSD OCT is an imaging technique using infrared light.

Just like with traditional fundus photography, it will be harder to get a good image for some patients than others.

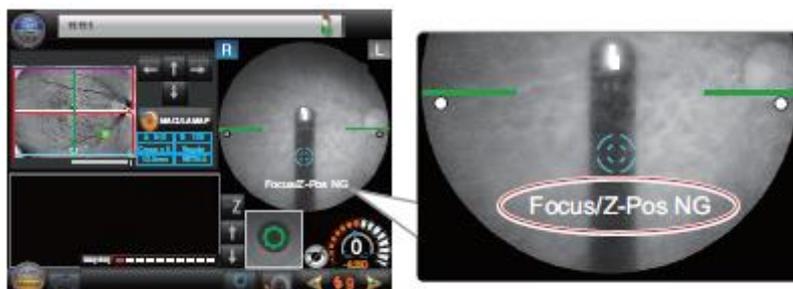
This guide aims to share some hints and tips for getting the best scan possible in more challenging patient groups.

Patient group 1: Dry eye

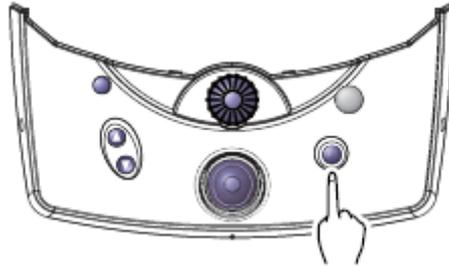


The Nidek RSD OCT relies on a reflex from the patient's tear film to capture automatically. If the patient has dry eyes or a poor tear film, it may be difficult to capture a scan automatically.

In dry eye patients, an error message may appear on the touch screen.



If the error message persists and the scan will not automatically capture, the OPT button on the base unit should be pressed. This will refresh or 'optimise' the image.



The patient should be advised to take a few big blinks while optimising is taking place.

If the tear film can be sufficiently refreshed, 'capturing' should display on the touch screen and the image will automatically capture.



If the image still will not capture, and the patient is known to have dry eye, ask them if they have ocular lubricants. If they do, ask them to put the drops in and try the scan again. If they do not have their own, ask a clinician to instill some dry eye drops and try the scan again.

If the scan still will not capture, or ocular lubricants are not available, it is possible to take the scan manually.

See Nidek RSD Manual capture guide

Patient Group 2: Contact lenses



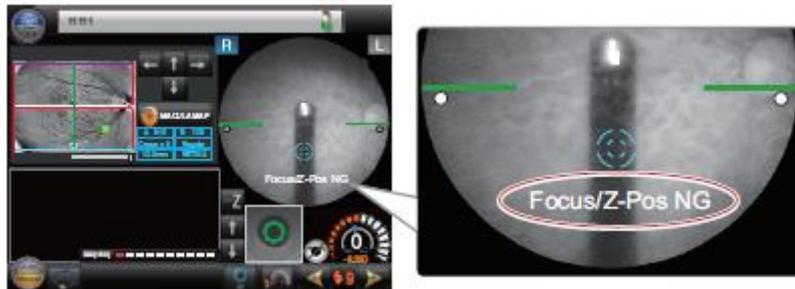
As with dry eye patients, if the patient is wearing contact lenses it will be more challenging to get a good scan. This is because the contact lens blocks the reflection from the tear film that allows the OCT to automatically capture an image.

Ideally, the patient should be instructed to remove their contact lenses prior to OCT scan capture.

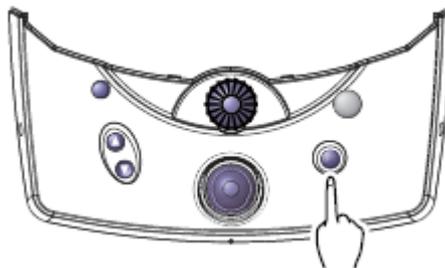
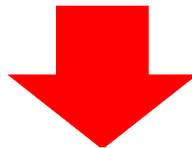
However, if it is not possible for the patient to remove their lenses, an OCT scan can be attempted with the Nidek RSD 330.

If an error message occurs, the same troubleshooting steps should be applied as with Patient Group 1.

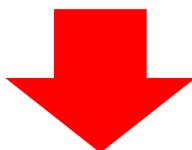
These were:



ERROR MESSAGE



OPTIMISE AND PATIENT BLINK



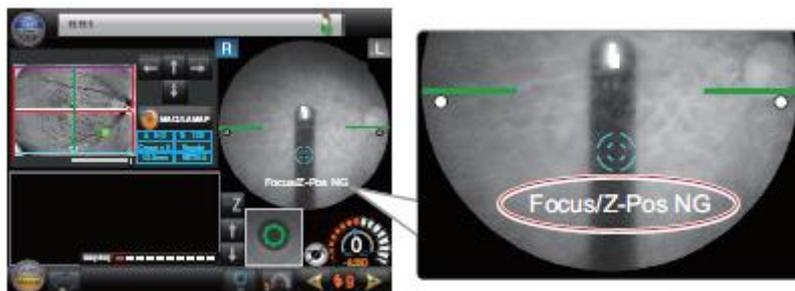
MANUAL CAPTURE IF NECERSSARY



Patient Group 3: Cataracts

Like any imaging technique, cataracts can prevent the OCT light source from reaching the retina, making it harder to get a good quality OCT scan.

If the scan is unable to capture automatically due to cataract, an error message will occur.



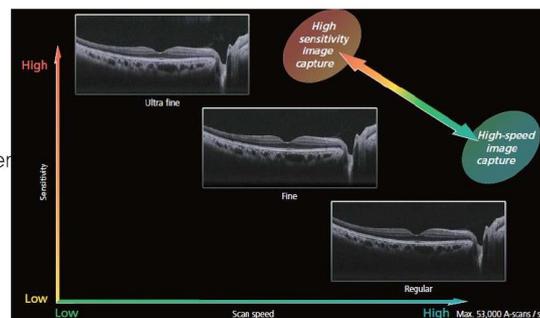
As with Patient Groups 1 and 2, both optimise with patient blink and manual capture techniques can be used.

Alternatively, the scan can be captured at a higher sensitivity level.

<OCT Sensitivity – 3 modes>

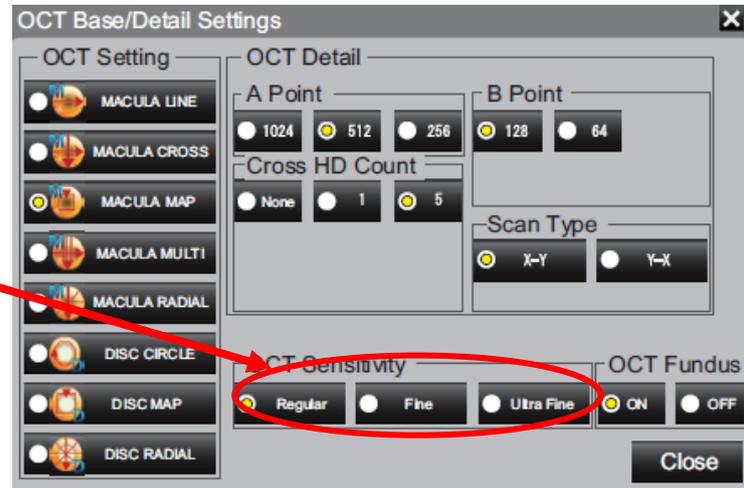
Regular / Fine / Ultra Fine

Selecting the OCT sensitivity based on pathology allows image capture with higher definition or at high speed.



The Nidek RSD 330 has 3 sensitivity levels for scan capture. It will be default to 'Regular' which will be sufficient for the majority of patients. However, in patients with cataracts, 'Fine' or 'Ultra Fine' sensitivities may provide better OCT image quality.

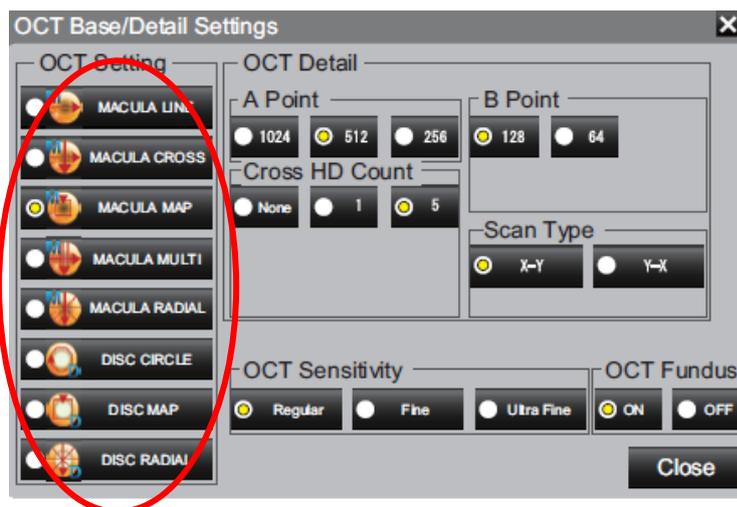
The sensitivity of the scan can be changed using the scan setting menu. This menu can be accessed by selecting the scan name on the Nidek RSD 330 touch screen.



It may also be necessary to select a different scan pattern.

The Macular Map and Disc Map scans provide the widest scan area and most comprehensive information for the optometrists. These are commonly included in the 'Combo' scan performed during patient pre-test.

However, in patients with cataracts, it may not be possible to scan such a large area, and a different scan pattern may need to be selected from the scan settings menu.



The optometrist will select the new scan pattern, with the Line, Cross and Radial scans working well for patients with cataracts.

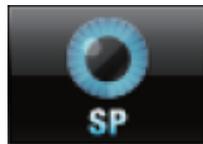
Patient Group 4: Small pupils



It will be more challenging to capture a good quality OCT scan and fundus photograph in patients with small pupils.

The Nidek RSD 330 can capture an OCT scan down to a minimum pupil size of 2mm. Traditional fundus photography requires a 4mm pupil size to capture a good quality image. This means it may be possible to capture a better OCT scan than fundus photograph on patients with small pupils.

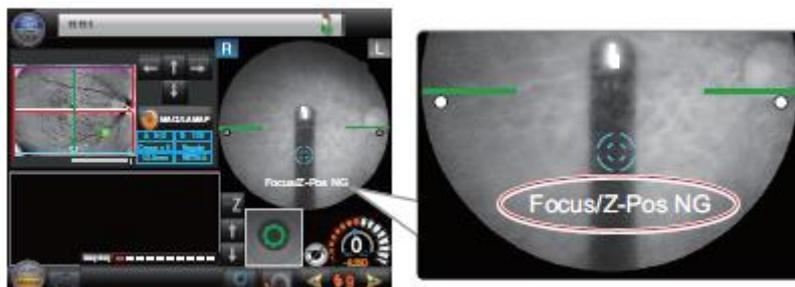
Using the 'Small pupil mode' on the Nidek RSD 330, a fundus photograph can be captured with a minimum pupil size of 3mm.



Small Pupil Mode can be accessed at the bottom of touchscreen. It can only be activated on FC or OCT/FC mode as it applies to fundus photography capture only.

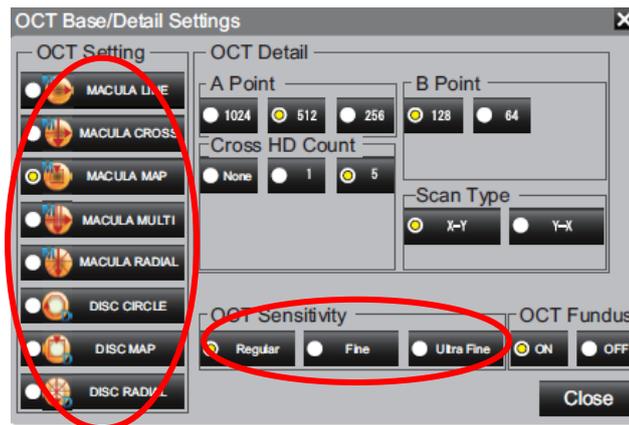


During OCT scan capture, if the pupil size is too small, an error message may display.



As with the other patient groups, optimise with patient blink and manual capture techniques may help capture a good image.

Alternatively, similarly to Patient Group 3 (Cataracts), increasing scan resolution and/or changing the scan pattern may help capture a good quality OCT scan in patients with small pupils. The scan resolution and/or scan pattern can be changed using the Scan Settings menu.



Patient Group 5: Strabismus and blind eyes



In order to capture an OCT scan using the Nidek RSD 330, the patient must be looking at the fixation target.

This can be more challenging for patients with 'squints' or very poor vision, who may be unable to align their eye and/or see the fixation target.



The location of the green fixation target will always be visible on the user's touch screen.

If the patient is unable to see the target, the flexible, **external fixation light** should be used to guide the patient's fixation.



The live, camera preview on the user's touch screen can then be used to view patient alignment.

Once fixation is correct, and the patient's eye is in the right position, the RSD will automatically capture.

If it is not possible to guide the patient in this way, manual capture technique should be used.

See Nidek RSD Manual capture guide

When using manual capture, the preview screen should be used to ensure the correct optical structure is centred during the scan.



The optic nerve should be **central** in Disc scans and to the **side** in Macular scans.

Patient Group 6: Eye movements

To capture a good quality OCT scan using the Nidek RSD 330, it is important patient fixation remains steady on the green fixation target,

Clear patient instructions are important to ensure that whenever possible, the patient attempts to keep their eyes still during the scan.

However, for patient's with involuntary eye movements eg. Nystagmus, it may be impossible to ensure steady fixation.

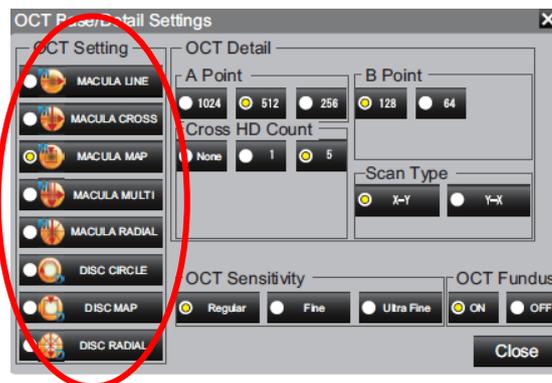
The Nidek RSD 330 has auto tracking functions, and will automatically adjust to small levels of movement. In larger levels of movement, the auto tracking feature will unlikely be sufficient to ensure a good scan.

In cases of involuntary eye movements, patients will often be aware of a head position where their eye movements are less. They should be encouraged to use that head position, during scan capture, if possible.

In extreme eye movement, it may be necessary to capture the scan manually.

See Nidek RSD Manual capture guide

Alternatively, a 'quicker' scan pattern may be selected. Scan patterns that scan a smaller area will be quicker than those covering a larger area, ie. Line and Cross scans will be quicker than the Maps. Different scan patterns will be chosen by the optometrist and can be selected from the Scan Settings menu.



Patient Group 7: Patient Blink

As with eye movements, it is difficult to get a good quality OCT scan in patients with persistent blinking.

For the scan to capture, the patient must keep their eyes open whilst 'Capturing' is displayed on the user's screens.

Clear patient instructions are essential for this.



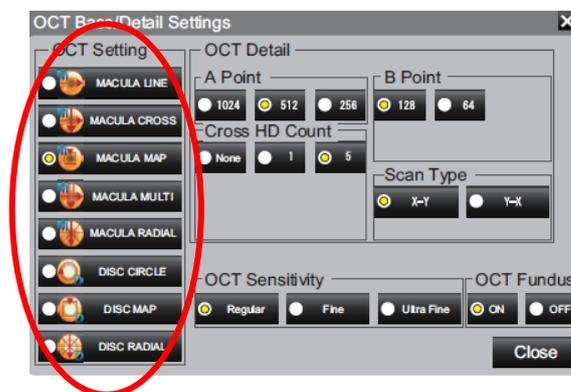
Patients can blink while the display reads 'OPTIMISING' and must hold their blink while **'CAPTURING'** is displayed.

A single beep will be heard at the start of image capture and a double beep will sound to mark the end of image capture.

For patient's who are struggling to hold their blink, ensure they are comfortably positioned at device and have dry eye drops instilled if clinically necessary.

If after repeated patient instruction, blinking persists, a different scan pattern, with a quicker scan time, may need to be selected.

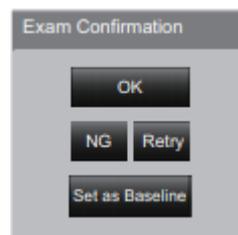
Different scan patterns can be selected using the Scan Settings menu.



Remember:

In some patients, you may never get the 'perfect' scan.

The 'NG' button should be used to repeat and attempt to improve captured scans. By selecting 'NG', all captured scans will be kept for review. At the end of capture, the user can then select the 'best' scan to be saved.



The 'Retry' button will instantly delete the scan that has been taken. This should only be used in very poor scans.

Any given scan should be repeated a maximum of 3x.

The 'best' of the attempted scans should then be saved to the patient file.