

Faculty of Science – UNSW Optometry Clinic
Protocol for fundus photography

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1. Purpose/background – context for development of the protocol

This protocol will provide instructions for digital fundus photography in the UNSW Optometry Clinic. Fundus photographs provide a visual record of the appearance of patients' retinas at particular time points. Images can be used to help establish a diagnosis and to accurately monitor changes in appearance. Photographs are used to educate patients and improve communication between health care professionals. Lastly, digital imaging has further use in teaching, research and publications.

2. Scope – to which positions/groups does the protocol apply.

This protocol applies to all students, academic, professional staff in the UNSW School of Optometry and Vision Science for patients of the UNSW Optometry Clinic.

3. Protocol statement

a. Indications

Fundus photography is ideally performed after pupillary dilation however; it can be performed on an undilated pupil. Indications for fundus photography include (but are not limited to):

- All new patients to establish a baseline for future comparison
- Initial or subsequent documentation of known fundus lesions
- All patients presenting for a laser screening. In this case fundus photography must be performed after dilation.
- All patients with diabetes.
- Suspect or known glaucoma
 - Signs or symptoms that may be associated with glaucoma
 - History with increased risk of glaucoma. E.g., history of retinal vein occlusion
 - Visual field changes suggestive of glaucoma
- Optic disc conditions (congenital anomalies, optic disc drusen)
- Macular pathology (e.g. age-related macular degeneration)
- Monitor ocular conditions for progression or associated ocular complications (eg. choroidal naevus)
- Patients with systemic conditions or has taken medications known to have ocular side effects
- Presence of retinal changes caused by medication or environmental exposure
- History of recent ocular trauma.
- Unexpected loss of visual acuity
- Transient visual loss
- Unexplained ocular pain
- Unexplained headaches

b. Contraindications

There is no reported evidence that ocular photography poses any risk to patients. Patients should be warned of the flash and the prolonged after-image associated with some retinal cameras. They should be advised that these are not harmful to ocular health.

c. Location of equipment

Kowa 2D/3D Non-mydratric Retinal Camera	Normal - Field angle : 45° Small Pupil - Field angle : 45° Simultaneous Stereo - Field angle : 34° (20°x27°)	Special Services Room (1.0.46)
Kowa Non-mydratric 7 Retinal Camera	Normal - Field angle : 45° & 20° Small Pupil - Field angle: 45° & 20°	Consult Room 19 (1.018)

d. Procedure for Kowa Non-mydratric Retinal Camera

1. Open photography software by double clicking on the V2k icon on computer desktop
2. Turn camera on. The power switch is located on the base of the camera on the right hand side
3. Check if patient has an existing file.
 - On the toolbar on the right of screen click OPEN LIST or ID# SEARCH.
 - Enter patient details and click SEARCH.
4. Otherwise, enter new patient data
 - On right tool bar click INPUT DATA
 - Input LAST NAME, FIRST NAME, PATIENT ID (use SUNIX Id), DOB and M/F
 - Select item from DIAGNOSIS 1 menu when appropriate
5. Set up patient comfortably
 - Sit patient relative close to camera
 - Adjust height of table using the up/down buttons on the operator side of table.
 - Adjust chin rest using the up/down buttons on the camera (left of joystick). The patient outer canthus should approximately line up with the mark on the head rest
6. For a standard 45° photograph the options should be set at CENTRAL and NORMAL. These settings can be adjusted using buttons on the camera (right of joystick).
 - The flash can be set from +2 to -2 setting. Use the dial to the left of the joystick to adjust as necessary
7. Take central photographs in the right and left eye
8. Take other photographs as needed (buttons to right of joystick).
 - Can move fixation target to obtain CENTRAL, MACULA or DISC photograph
 - Small pupil (SP) mode and STEREO mode available
9. Ensure quality of all photographs taken
 - Minimal shadows (should not occur if patient is dilated)
 - Minimal flare at edge
 - Minimal artifacts – eg lid/lashes
 - Adequate brightness (not over or under exposed)
 - Correctly centred
10. Recheck that the photographs are labelled correctly: Name, SUNIX id, date the image was taken.
11. Document on the patient record that photographs were taken and in which room
12. Photographs can be emailed to patients on request at no cost. Notify the Supervising Optometrist or Key Clinician to arrange to email the photographs through the UNSW Optometry Clinic email account (optomclinic@unsw.edu.au).
13. For printed photographs a printing fee of \$20 applies (to be settled at reception).

NB: for patients attending for LASER SCREENING

- Retinal photography must occur after pupil dilation
- Take right and left central 45 degree photographs
- **Photographs must be taken by Supervising Optometrist or sighted by the Supervising Optometrist (before the photograph is printed and before the patient leaves)**
- Photographs are to be printed and included in the report at no additional cost

e. Use of images for teaching and research

It is imperative that patient confidentiality is maintained to assure an ethical and legal patient care system. Access to patient records is governed by the Federal Privacy Act 1988 and the National Privacy Principles (NPPs). See <http://www.oaic.gov.au> and NSW state privacy legislation. The OAA has developed Clinical Guideline on Accessing Health Records which can be found at: <http://www.optometrists.asn.au/LinkClick.aspx?fileticket=6rf6rxji0IM%3d&tabid=123&language=en-US>

All fundus photographs taken in the UNSW Optometry Clinic are the property of the Clinic.

A request can be made to the Clinic Director (kathleen.watt@unsw.edu.au) for photographs to be used in publications and teaching material. The UNSW Optometry Clinic should be acknowledged in any publication or presentation for providing this material. **Fundus photographs must be de-identified for use in publications, posters, lectures and presentations**

Student may require copies of photographs for case reports and assignments. Students may email to themselves relevant retinal and/or anterior eye photos directly from the camera's computer. **Fundus photographs must be de-identified for use in reports, assignments and presentations.** Once the student has incorporated a fundus photograph in an assignment, report or presentation, the fundus photograph should be deleted from any electronic storage where it has been kept.

f. Use of images for referral

Fundus photographs may be used in external and internal referrals to improve communication between practitioners.

For external referrals, photographs should be attached to the referral in the same format the referral is provided in. That is, if the referral is sent as a hardcopy, the photographs may be printed and sent with the referral. However if the referral is sent electronically, the photograph should be attached to an email referral in its electronic form.

For internal referrals, photographs should not be printed. It should be noted on the record card (and when applicable the internal referral document) on which camera the photograph was taken and stored.

4. Roles and responsibilities

a. Student Clinician

It is the responsibility of the student to follow the procedure as outlined above including identifying additional indications for fundus photography not listed.

It is expected that students are familiar with the use of the fundus camera and camera software. They are expected to be able to set up and perform the procedure independently if required and be able to give clear instructions to their patients.

The student is to consult with their supervising optometrist if assistance is required obtaining central or other non-routine photographs. The student must ensure **all photographs are checked for quality** by their Supervising Optometrist and retake photographs where necessary.

b. Supervising Optometrists

It is the Supervising Optometrists' responsibility to ensure all photographs taken are of an acceptable quality and are to advise on the retaking of photographs where necessary. This should obviously occur before the patient is discharged when the consultation has ended.

For laser screenings it is recommended that the Supervising Optometrist take the fundus photographs. However, due to time constraints this may not be possible. In this case, the Supervising Optometrist **must sight and approve the photographs before the patient leaves.**

The Supervising Optometrist should ensure the student identifies indications for photography in accordance with this protocol and using their clinic judgement. The Supervising Optometrist will guide students as to the interpretation of the photographs in conjunction with the patient history and other clinical findings.

c. Staff Optometrists

Staff Optometrists will follow the outlined protocol for fundus photography during consultations with private patients. Staff Optometrists will ensure that cameras including the associated software and databases are adequately serviced and functioning.

d. Clinic Director

It is the role of the Clinic Director to ensure the Clinic protocols are implemented in their entirety and review protocols as required.

5. References

Saine PJ. Tyler ME. Tyler Ophthalmic Photography: Retinal Photography, Angiography, and Electronic Imaging, 2nd Edition, Butterworth-Heinemann

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http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp113_glaucoma_nov_2010.pdf

NHMRC Guidelines for the Management of Diabetic Retinopathy. 2008. URL:
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