

# Eye Morphology NINGLA\_EYE\_001

## Purpose

To detect abnormalities in eye morphology.

## Experimental Design

- **Minimum number of animals** : 7M + 7F
- **Age at test**: Week 58
- **Sex**: We do not expect the results of this test to show sexual dimorphism

## Procedure

1. Examine the anterior of both eyes (e.g. with slit lamp) and record any abnormalities
2. Test the iris/pupil light response
3. Image abnormal eyes as a minimum or all eyes if capacity permits
4. Dilate both eyes
5. Examine the anterior and posterior of both dilated eyes (e.g. with slit lamp and ophthalmoscope) and record any abnormalities
6. Image abnormal eyes as a minimum or all eyes if capacity permits

OCT:

1. Turn on the OCT and start the database
2. Anaesthetize mouse
3. Prepare mouse eyes with drops and place contact lens (focal length 10 mm) on the right eye
4. Enter mouse data in the "Create new patient file" area and switch to the "Acquisition" window
5. Move the OCT camera to the right position and activate measurement modus
6. Place mouse collaterally to the OCT camera on the right side of a platform that is fixed in front of the OCT lens
7. Search the contact lens in the live picture of the fundus image field and place the pupil of the mouse eye in the centre of the window
8. Move the OCT camera such that OCT lens and contact lens touch each other
9. Focus the fundus picture by slightly moving up/down or forward/backward
10. Save fundus images
11. Set the "Ref.Arm" ruler such that the section of the retina is placed in the centre of the blue rectangle
12. Set the mode of measurement on "vertical, horizontal line"
13. Move the blue horizontal line in the fundus image field to the optic nerve level
14. Save images of retinal sections
15. Move the OCT camera to the left position

16. Repeat measurement procedure for the left eye

### Scheimpflug Imaging:

1. Turn on the Pentacam and start the patient data management
2. Apply one drop 0.5% Atropine to each mouse eye for pupil dilation
3. Enter mouse data in the "Patient" group box and switch to the Scan menu
4. Activate the "1 Picture" modus in the "Image Options" area
5. Move Pentacam to the right position
6. Hold the mouse on a platform such that the vertical LED 475 nm light slit is orientated in the center of the right eye ball
7. Guarantee optimal focus by using the fine adjustment software tool in the adjustment window
8. Start imaging manually by pressing the "Start Scan" button
9. Scheimpflug images are saved automatically
10. Move Pentacam to the left position
11. Repeat measurement procedure for the left eye

## Notes

- As a minimum, all abnormalities should be imaged.
  - Where capacity permits, all mice can be imaged
- Majority of parameters can be analysed using the standard approach for assessing categorical data. To increase power for analysis purposes, where an abnormality is detected in the left, right or both eyes, the data may be combined to generate one "abnormal" category.
- Data for both eyes is recorded under one parameter to distinguish phenotypes of incomplete penetrance in individuals and if an observation for one or both eyes cannot be made, this is recorded as 'no data'. The IMPC analysis pipeline does not take into account whether an abnormality is fully penetrant or not and the same weight is given for an abnormal observations in one or both eyes. In cases where it is not possible to confirm if an abnormality is present or not, the data is not included in the statistical analysis. The following logic is applied in determining whether to include the data in analysis:
  - If at least one of the eyes shows an abnormality in a particular parameter, the data for that specimen will be included in the statistical analysis even if the other eye is marked as "no data".
  - If the eyes are marked as "no data", or one eye is normal and the other eye is "no data" for a particular parameter the data for that specimen will not be included in the statistical analysis.

### Data QC

Image QC is typically performed during data collection to ensure high quality images are captured whilst eyes are dilated etc.

## Parameters and Metadata

## VIP of left eye NINGLA\_EYE\_079\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Right anterior chamber depth NINGLA\_EYE\_061\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

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## Corneal deposits NINGLA\_EYE\_081\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** absent, no data right eye, present left eye, no data for both eyes, present right eye, no data left eye, present right eye, present left eye, no data left eye, no data right eye, present both eyes,

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## Eye NINGLA\_EYE\_001\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: present, absent right eye, absent both eyes, absent left eye,

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## **B-scan of left retina** NINGLA\_EYE\_073\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## **Left inner nuclear layer** NINGLA\_EYE\_069\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

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## **Slit Lamp observation** NINGLA\_EYE\_028\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Dilation Method NINGLA\_EYE\_043\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Options:** Phenylephrine hydrochloride,  
Cyclopentolate hydrochloride+Phenylephrine hydrochloride, Cyclopentolate hydrochloride,  
Atropine sulphate, Atropine, Tropicamide, Tropicamide+Phenylephrin, None,

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## Right eye diameter NINGLA\_EYE\_090\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: mm

---

## Ophthalmoscope Observation NINGLA\_EYE\_029\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

---

## Pupil Light Response NINGLA\_EYE\_014\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** left eye abnormal, no data right eye, left eye abnormal, normal,  
both eyes abnormal, no data right eye, no data left eye, right eye abnormal,  
no data for both eyes, no data left eye, right eye abnormal,

---

## Retinal Blood Vessels NINGLA\_EYE\_024\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** no data left eye, left eye abnormal, right eye abnormal,  
no data right eye, left eye abnormal, no data for both eyes, no data right eye,  
both eyes abnormal, normal, no data left eye, right eye abnormal,

---

## Right inner nuclear layer NINGLA\_EYE\_063\_001 | v1.2

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Unit Measured:** um

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## Max right eye lens density NINGLA\_EYE\_058\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

Unit Measured: %

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## Corneal ulcer NINGLA\_EYE\_085\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data left eye, present right eye, no data right eye, absent, present right eye, no data left eye, no data for both eyes, no data right eye, present left eye, present left eye, present both eyes,

---

## Date Slit Lamp equipment last calibrated NINGLA\_EYE\_046\_001 |

v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Retinal Blood Vessels Structure NINGLA\_EYE\_025\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** left eye abnormal, both eyes abnormal, no data left eye, right eye abnormal, no data for both eyes, normal, no data right eye, no data right eye, left eye abnormal, right eye abnormal, no data left eye,

---

## Lens Opacity NINGLA\_EYE\_017\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** absent, no data for both eyes, present both eyes, present right eye, present left eye, no data left eye, present right eye, no data left eye, no data right eye, no data right eye, present left eye,

---

## Date Scheimpflug equipment last calibrated NINGLA\_EYE\_048\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Iris/Pupil NINGLA\_EYE\_010\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data left eye, normal, left eye abnormal, no data right eye, no data right eye, left eye abnormal, no data for both eyes, no data left eye, right eye abnormal, right eye abnormal, both eyes abnormal,

---



## Right posterior chamber depth NINGLA\_EYE\_065\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

---

## Persistence of hyaloid vascular system NINGLA\_EYE\_027\_001 | v1

.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** present right eye, no data for both eyes, present both eyes, absent, no data right eye, present left eye, no data left eye, no data left eye, present right eye, present left eye, no data right eye,

---

## Bulging eye NINGLA\_EYE\_002\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data left eye, present right eye, no data left eye, no data right eye, no data for both eyes, present both eyes, no data right eye, present left eye, present right eye, present left eye, absent,

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## Slit Lamp Equipment Model NINGLA\_EYE\_032\_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: SL 990, SL-15, BQ 900 LED/IM-900, Micron III slit lamp extension, SL 139, SL30, 30 SL-M, SL-7E, S350, SL130,

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## Images Slit Lamp NINGLA\_EYE\_051\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Min left eye lens density NINGLA\_EYE\_054\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

---

## Corneal opacity NINGLA\_EYE\_008\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** no data for both eyes, present right eye, no data left eye, no data left eye, present right eye, absent, present left eye, no data right eye, present left eye, present both eyes, no data right eye,

---

## **Corneal vascularization** NINGLA\_EYE\_009\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Options:** no data right eye, present left eye, no data left eye, present right eye, no data right eye, present both eyes, absent, present left eye, no data for both eyes, present right eye, no data left eye,

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## **Ophthalmoscope Lens Model** NINGLA\_EYE\_089\_001 | v1.1

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

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## **General Anesthetic** NINGLA\_EYE\_045\_001 | v1.1

procedureMetadata

**Req. Analysis:** true

**Req. Upload:** true

**Is Annotated:** false

**Options:** Ketamine+Xylazine, Euthatal, Ketamine+Medetomidine, Avertin, No anesthesia, Isoflurane,

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## **Slit Lamp Equipment ID** NINGLA\_EYE\_030\_001 | v1.2

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

---

## **Left corneal thickness** NINGLA\_EYE\_066\_001 | v1.2

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Unit Measured:** um

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## **Left vitreous humour thickness** NINGLA\_EYE\_088\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Unit Measured:** um

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# Optical Coherence Tomography Equipment ID NINGLA\_EYE\_0

37\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Lens NINGLA\_EYE\_016\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** no data right eye, left eye abnormal, no data right eye, no data left eye, no data for both eyes, both eyes abnormal, normal, no data left eye, right eye abnormal, right eye abnormal, left eye abnormal,

---

## Iris transillumination NINGLA\_EYE\_082\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** left eye abnormal, no data left eye, no data right eye, both eyes abnormal, right eye abnormal, no data for both eyes, normal, no data left eye, right eye abnormal, no data right eye, left eye abnormal,

---

## Right outer nuclear layer NINGLA\_EYE\_064\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

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## Scheimpflug Equipment ID NINGLA\_EYE\_040\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Topical Anesthetic NINGLA\_EYE\_044\_001 | v1.1

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

**Options:** Hydrochloride, Phenylephrine hydrochloride, Oxybuprocain, Mydriacyl, Atropine sulphate, Atropine, No anesthesia,

---

## B-scan of left cornea and lens NINGLA\_EYE\_077\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## B-scan of right retina NINGLA\_EYE\_072\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

---

## Lacrimation NINGLA\_EYE\_086\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data for both eyes, absent, present left eye, present both eyes, no data left eye, no data right eye, no data left eye, present right eye, no data right eye, present left eye, present right eye,

---

## Narrow eye opening NINGLA\_EYE\_006\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** normal, left eye abnormal, no data for both eyes, no data left eye, no data left eye, right eye abnormal, both eyes abnormal, no data right eye, right eye abnormal, no data right eye, left eye abnormal,

---

## Scheimpflug Equipment Manufacturer NINGLA\_EYE\_041\_001 | v1.

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procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Oculus GmbH,

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## Right vitreous humor thickness NINGLA\_EYE\_087\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

---

## VIP of right eye NINGLA\_EYE\_078\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

---

## Retinal Structure NINGLA\_EYE\_022\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false



**Options:** no data right eye, left eye abnormal, no data right eye, left eye abnormal,  
no data for both eyes, no data left eye, right eye abnormal, right eye abnormal, normal,  
both eyes abnormal, no data left eye,

---

## **Experimenter ID** NINGLA\_EYE\_036\_001 | v1.1

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

---

## **Right corneal thickness** NINGLA\_EYE\_060\_001 | v1.2

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Unit Measured:** um

---

## **Eyelid morphology** NINGLA\_EYE\_004\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Options:** normal, left eye abnormal, no data for both eyes,  
no data right eye, left eye abnormal, right eye abnormal, no data right eye, no data left eye,  
no data left eye, right eye abnormal, both eyes abnormal,

---

## Retina NINGLA\_EYE\_020\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** no data left eye, right eye abnormal, both eyes abnormal, normal,  
right eye abnormal, left eye abnormal, no data for both eyes,  
no data right eye, left eye abnormal, no data right eye, no data left eye,

---

## Ophthalmoscope Equipment ID NINGLA\_EYE\_033\_001 | v1.2

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

---

## Right total retinal thickness NINGLA\_EYE\_062\_001 | v1.2

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Unit Measured:** um

---

## Sheimpflug Lens description NINGLA\_EYE\_052\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

---

## Pupil Position NINGLA\_EYE\_011\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** right eye abnormal, no data right eye, no data left eye, no data for both eyes, normal, both eyes abnormal, no data right eye, left eye abnormal, left eye abnormal, no data left eye, right eye abnormal,

---

## Ophthalmoscope Equipment Manufacturer NINGLA\_EYE\_034\_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

**Options:** Haag-Streit, Keeler LTD, Kowa, Karl Storz / Nikon, Phoenix, Heine, Heine / Volk, Phoenix Research Labs,

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## Left total retinal thickness NINGLA\_EYE\_068\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

---

## Synechia NINGLA\_EYE\_019\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data right eye, present left eye, present both eyes,  
no data right eye, present left eye, no data left eye, absent, present right eye,  
no data for both eyes, no data left eye, present right eye,

---

## VIP of right fundus NINGLA\_EYE\_074\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

---

## Left eye diameter NINGLA\_EYE\_091\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: mm

---

## Vitreous NINGLA\_EYE\_083\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** both eyes abnormal, normal, no data left eye, right eye abnormal, no data right eye, left eye abnormal, no data left eye, right eye abnormal, left eye abnormal, no data right eye, no data for both eyes,

---

## Corneal Sclerization NINGLA\_EYE\_080\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data left eye, no data for both eyes, no data right eye, present left eye, no data right eye, present left eye, present both eyes, present right eye, absent, no data left eye, present right eye,

---

## Fusion between cornea and lens NINGLA\_EYE\_018\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** present right eye, no data left eye, present right eye, present left eye, no data left eye, absent, no data for both eyes, no data right eye, present left eye, present both eyes, no data right eye,

---

## Left anterior chamber depth NINGLA\_EYE\_067\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

---

## Retinal Blood Vessels Pattern NINGLA\_EYE\_026\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data right eye, left eye abnormal, no data for both eyes, both eyes abnormal, no data right eye, right eye abnormal, left eye abnormal, normal, no data left eye, no data left eye, right eye abnormal,

---

## Optical Coherence Tomography Equipment Manufacturer

NINGLA\_EYE\_038\_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Heidelberg Engineering, Bioptigen,

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## **B-scan of right cornea and lens** NINGLA\_EYE\_076\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## **Slit Lamp Equipment Manufacturer** NINGLA\_EYE\_031\_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Phoenix Research Labs, Kowa, Topcon, Haag-Streit, CSO, Zeiss, MuLe,

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## **Mean right eye lens density** NINGLA\_EYE\_059\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

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## Scheimpflug Equipment Model NINGLA\_EYE\_042\_001 | v1.4

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Pentacam,

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## Mean left eye lens density NINGLA\_EYE\_056\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

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## Max left eye lens density NINGLA\_EYE\_055\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

---

## Pupil Shape NINGLA\_EYE\_012\_001 | v1.0

simpleParameter



Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** right eye abnormal, left eye abnormal, no data right eye, normal,  
no data right eye, left eye abnormal, no data for both eyes, no data left eye,  
no data left eye, right eye abnormal, both eyes abnormal,

---

## Left posterior chamber depth NINGLA\_EYE\_071\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

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## Eye Hemorrhage or Blood Presence NINGLA\_EYE\_003\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data right eye, no data for both eyes, absent, no data right eye, present left eye,  
no data left eye, present right eye, no data left eye, present right eye, present left eye,  
present both eyes,

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## Date OCT equipment last calibrated NINGLA\_EYE\_049\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Ophthalmoscope Equipment Model NINGLA\_EYE\_035\_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

**Options:** OMEGA 180 / Superfield NC, Sigma 150K, Omega 180 / 60D, SL4 4AA, Genesis-DF, Omega 500 Unplugged, Micron III, Genesis-D, Xenon Nova 175W light source + HOPKINS optic 1218AA /Nikon D5100 + 85 mm f/1.8 lens, Genesis,

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## Images Ophthalmoscopy NINGLA\_EYE\_050\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Date Ophthalmoscope equipment last calibrated NINGLA\_EYE\_047\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

---

## Corneal mineralization NINGLA\_EYE\_084\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** no data right eye, present left eye, no data left eye, no data right eye, no data for both eyes, present both eyes, absent, present right eye, present left eye, no data left eye, present right eye,

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## Optical Coherence Tomography Equipment Model NINGLA\_E

YE\_039\_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

**Options:** Spectralis, EnvisuTM R-Series SDOIS, Envisu R2200,

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## Retina (combined) NINGLA\_EYE\_092\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Derivation:**

retinaCombined('NINGLA\_EYE\_020\_001', 'NINGLA\_EYE\_021\_001', 'NINGLA\_EYE\_022\_001')

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## Pupil Dilation NINGLA\_EYE\_013\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** right eye dilated, left eye dilated, no data for both eyes, no data right eye, both eyes dilated, no data right eye, left eye dilated, no data left eye, normal, no data left eye, right eye dilated,

---

## Eyelid closure NINGLA\_EYE\_005\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Options:** both eyes closed, no data for both eyes, normal, no data right eye, no data right eye, left eye closed, no data left eye, right eye closed, right eye closed, left eye closed, no data left eye,

---

## Optic Disc NINGLA\_EYE\_023\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** left eye abnormal, both eyes abnormal, no data right eye, left eye abnormal, right eye abnormal, no data for both eyes, normal, no data left eye, no data right eye, no data left eye, right eye abnormal,

---

## Left outer nuclear layer NINGLA\_EYE\_070\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

---

## Min right eye lens density NINGLA\_EYE\_057\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

---

## Retinal Pigmentation NINGLA\_EYE\_021\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Options:** both eyes abnormal, no data right eye, right eye abnormal, normal,  
no data right eye, left eye abnormal, left eye abnormal, no data left eye, right eye abnormal,  
no data for both eyes, no data left eye,

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## Cornea NINGLA\_EYE\_007\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** no data right eye, left eye abnormal, no data left eye, left eye abnormal, no data for both eyes, no data left eye, right eye abnormal, right eye abnormal, no data right eye, both eyes abnormal, normal,

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## **Iris Pigmentation** NINGLA\_EYE\_015\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Options:** left eye abnormal, no data right eye, left eye abnormal, right eye abnormal, no data left eye, right eye abnormal, no data left eye, no data for both eyes, normal, both eyes abnormal, no data right eye,

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## **Scheimpflug description** NINGLA\_EYE\_053\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

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## **VIP of left fundus** NINGLA\_EYE\_075\_001 | v1.1

seriesMediaParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

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