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

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

Slit Lamp observation NINGLA_EYE_028_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

---

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,

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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,

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Right inner nuclear layer NINGLA_EYE_063_001 | v1.2

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: um

Max right eye lens density NINGLA_EYE_058_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

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,

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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,

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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,

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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,

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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,

Ophthalmoscope Lens Model NINGLA_EYE_089_001 | v1.1

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

---

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

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Left corneal thickness NINGLA_EYE_066_001 | v1.2

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: um

Left vitreous humour thickness NINGLA_EYE_088_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: um

Optical Coherence Tomography Equipment ID NINGLA_EYE_037_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,

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Iris transilumination 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,

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Right outer nuclear layer NINGLA_EYE_064_001 | v1.2

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: um

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,

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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,

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Scheimpflug Equipment Manufacturer NINGLA_EYE_041_001 | v1.4

procedureMetadata

Req. Analysis: true **Req. Upload:** false **Is Annotated:** false

Options: Oculus GmbH,

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

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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,

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Ophthalmoscope Equipment ID NINGLA_EYE_033_001 | v1.2

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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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,

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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

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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,

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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,

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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,

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: %

Scheimpflug Equipment Model NINGLA_EYE_042_001 | v1.4

procedureMetadata

Req. Analysis: true **Req. Upload:** false **Is Annotated:** false

Options: Pentacam,

Mean left eye lens density NINGLA_EYE_056_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

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,

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Left posterior chamber depth NINGLA_EYE_071_001 | v1.2

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: um

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

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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_EYE_039_001 | v1.2

procedureMetadata

Req. Analysis: true **Req. Upload:** false **Is Annotated:** false

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

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')

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,

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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,

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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,

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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,

---

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