

Eye Morphology JAXLA_EYE_002

Purpose

To detect abnormalities in eye morphology.

Experimental Design

- **Minimum number of animals :** 7M + 7F
- **Age at test:** Week 76
- **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 QC

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

Parameters and Metadata

Narrow eye opening JAXLA_EYE_006_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Lacrimation JAXLA_EYE_086_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Mean right eye lens density JAXLA_EYE_059_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

General Anesthetic JAXLA_EYE_045_001 | v1.1

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

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

Right total retinal thickness JAXLA_EYE_062_001 | v1.2

simpleParameter

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

Unit Measured: um

Date Ophthalmoscope equipment last calibrated JAXLA_EYE_047_001 | v1.1

procedureMetadata

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

Right posterior chamber depth JAXLA_EYE_065_001 | v1.2

simpleParameter

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

Unit Measured: um

B-scan of right retina JAXLA_EYE_072_001 | v1.1

seriesMediaParameter

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

Vitreous JAXLA_EYE_083_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Right anterior chamber depth JAXLA_EYE_061_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Left corneal thickness JAXLA_EYE_066_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Retina (combined) JAXLA_EYE_092_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Topical Anesthetic JAXLA_EYE_044_001 | v1.1

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

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

Eye JAXLA_EYE_001_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Slit Lamp Equipment Manufacturer JAXLA_EYE_031_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Date OCT equipment last calibrated JAXLA_EYE_049_001 | v1.1

procedureMetadata

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

Ophthalmoscope Equipment ID JAXLA_EYE_033_001 | v1.2

procedureMetadata

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

Left inner nuclear layer JAXLA_EYE_069_001 | v1.2

simpleParameter

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

Unit Measured: um

Right outer nuclear layer JAXLA_EYE_064_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Scheimpflug description JAXLA_EYE_053_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Iris transillumination JAXLA_EYE_082_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Eye Hemorrhage or Blood Presence JAXLA_EYE_003_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Max right eye lens density JAXLA_EYE_058_001 | v1.1

simpleParameter

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

Unit Measured: %

VIP of right eye JAXLA_EYE_078_001 | v1.1

seriesMediaParameter

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

Slit Lamp Equipment ID JAXLA_EYE_030_001 | v1.2

procedureMetadata

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

Sheimpflug Lens description JAXLA_EYE_052_001 | v1.1

simpleParameter

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

Bulging eye JAXLA_EYE_002_001 | v1.0

simpleParameter

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

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

VIP of left fundus JAXLA_EYE_075_001 | v1.1

seriesMediaParameter

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

Lens JAXLA_EYE_016_001 | v1.0

simpleParameter

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

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

Persistence of hyaloid vascular system JAXLA_EYE_027_001 | v1.0

simpleParameter

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

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

VIP of right fundus JAXLA_EYE_074_001 | v1.1

seriesMediaParameter

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

Min left eye lens density JAXLA_EYE_054_001 | v1.2

simpleParameter

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

Unit Measured: %

Optic Disc JAXLA_EYE_023_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

Pupil Shape JAXLA_EYE_012_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Lens Opacity JAXLA_EYE_017_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

Retinal Blood Vessels JAXLA_EYE_024_001 | v1.0

simpleParameter

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

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

Eyelid morphology JAXLA_EYE_004_001 | v1.0

simpleParameter

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

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

Mean left eye lens density JAXLA_EYE_056_001 | v1.1

simpleParameter

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

Unit Measured: %

Right vitreous humor thickness JAXLA_EYE_087_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Pupil Position JAXLA_EYE_011_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Scheimpflug Equipment Manufacturer JAXLA_EYE_041_001 | v1.4

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Oculus GmbH,

Scheimpflug Equipment ID JAXLA_EYE_040_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Left outer nuclear layer JAXLA_EYE_070_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Ophthalmoscope Equipment Model JAXLA_EYE_035_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Date Slit Lamp equipment last calibrated JAXLA_EYE_046_001 | v1.1

procedureMetadata

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

Dilation Method JAXLA_EYE_043_001 | v1.0

procedureMetadata

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

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

Retinal Blood Vessels Pattern JAXLA_EYE_026_001 | v1.0

simpleParameter

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

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

Left total retinal thickness JAXLA_EYE_068_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Scheimpflug Equipment Model JAXLA_EYE_042_001 | v1.4

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Pentacam,

Corneal mineralization JAXLA_EYE_084_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

B-scan of left retina JAXLA_EYE_073_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Pupil Light Response JAXLA_EYE_014_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Slit Lamp Equipment Model JAXLA_EYE_032_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Optical Coherence Tomography Equipment Manufacturer

JAXLA_EYE_038_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Heidelberg Engineering, Bioptigen,

Cornea JAXLA_EYE_007_001 | v1.0

simpleParameter

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

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

Corneal opacity JAXLA_EYE_008_001 | v1.0

simpleParameter

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

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

Iris/Pupil JAXLA_EYE_010_001 | v1.0

simpleParameter

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

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

Corneal ulcer JAXLA_EYE_085_001 | v1.0

simpleParameter

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

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

Ophthalmoscope Observation JAXLA_EYE_029_001 | v1.1

simpleParameter

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

Retinal Blood Vessels Structure JAXLA_EYE_025_001 | v1.0

simpleParameter

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

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

B-scan of left cornea and lens JAXLA_EYE_077_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Optical Coherence Tomography Equipment Model JAXLA_EY

E_039_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Left posterior chamber depth JAXLA_EYE_071_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Ophthalmoscope Lens Model JAXLA_EYE_089_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Min right eye lens density JAXLA_EYE_057_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

Max left eye lens density JAXLA_EYE_055_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

Pupil Dilation JAXLA_EYE_013_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Right corneal thickness JAXLA_EYE_060_001 | v1.2

simpleParameter

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

Unit Measured: um

VIP of left eye JAXLA_EYE_079_001 | v1.1

seriesMediaParameter

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

Corneal vascularization JAXLA_EYE_009_001 | v1.0

simpleParameter

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

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

Left vitreous humour thickness JAXLA_EYE_088_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Slit Lamp observation JAXLA_EYE_028_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Date Scheimpflug equipment last calibrated JAXLA_EYE_048_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Experimenter ID JAXLA_EYE_036_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Images Slit Lamp JAXLA_EYE_051_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Corneal Sclerization JAXLA_EYE_080_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

B-scan of right cornea and lens JAXLA_EYE_076_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Right eye diameter JAXLA_EYE_090_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: mm

Left anterior chamber depth JAXLA_EYE_067_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Images Ophthalmoscopy JAXLA_EYE_050_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Right inner nuclear layer JAXLA_EYE_063_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Left eye diameter JAXLA_EYE_091_001 | v1.0

simpleParameter

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

Unit Measured: mm

Synechia JAXLA_EYE_019_001 | v1.0

simpleParameter

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

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

Fusion between cornea and lens JAXLA_EYE_018_001 | v1.0

simpleParameter

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

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

Ophthalmoscope Equipment Manufacturer JAXLA_EYE_034_001

| v1.2

procedureMetadata

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

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

Eyelid closure JAXLA_EYE_005_001 | v1.0

simpleParameter

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

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

Corneal deposits JAXLA_EYE_081_001 | v1.1

simpleParameter

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

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

Iris Pigmentation JAXLA_EYE_015_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Optical Coherence Tomography Equipment ID JAXLA_EYE_037_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false
