

Eye Morphology UCDLA_EYE_002

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 mode
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

Max right eye lens density UCDLA_EYE_058_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

Right total retinal thickness UCDLA_EYE_062_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Ophthalmoscope Equipment Model UCDLA_EYE_035_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Omega 180 / 60D,

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

Mean right eye lens density UCDLA_EYE_059_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

Optical Coherence Tomography Equipment ID UCDLA_EYE_03

7_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Images Slit Lamp UCDLA_EYE_051_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Pupil Position UCDLA_EYE_011_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Iris transillumination UCDLA_EYE_082_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Scheimpflug Equipment Manufacturer UCDLA_EYE_041_001 | v1.4
procedureMetadata

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

Options: Oculus GmbH,

Right vitreous humor thickness UCDLA_EYE_087_001 | v1.0
simpleParameter

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

Unit Measured: um

Min right eye lens density UCDLA_EYE_057_001 | v1.1
simpleParameter

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

Unit Measured: %

Images Ophthalmoscopy UCDLA_EYE_050_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Vitreous UCDLA_EYE_083_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Slit Lamp Equipment Manufacturer UCDLA_EYE_031_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Scheimpflug Equipment Model UCDLA_EYE_042_001 | v1.4

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Pentacam,

Right eye diameter UCDLA_EYE_090_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: mm

Bulging eye UCDLA_EYE_002_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Corneal mineralization UCDLA_EYE_084_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Optic Disc UCDLA_EYE_023_001 | v1.0

simpleParameter

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

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

VIP of left fundus UCDLA_EYE_075_001 | v1.1

seriesMediaParameter

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

Iris Pigmentation UCDLA_EYE_015_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, no data right eye, both eyes abnormal, no data left eye, no data left eye, right eye abnormal, right eye abnormal, normal, left eye abnormal,

Slit Lamp observation UCDLA_EYE_028_001 | v1.1

simpleParameter

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

VIP of left eye UCDLA_EYE_079_001 | v1.1

seriesMediaParameter

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

Eyelid morphology UCDLA_EYE_004_001 | v1.0

simpleParameter

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

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

Ophthalmoscope Lens Model UCDLA_EYE_089_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Persistence of hyaloid vascular system UCDLA_EYE_027_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, present right eye, absent, present both eyes, no data for both eyes, no data right eye, present left eye, no data left eye,

Pupil Dilation UCDLA_EYE_013_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Lens UCDLA_EYE_016_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

Left inner nuclear layer UCDLA_EYE_069_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Topical Anesthetic UCDLA_EYE_044_001 | v1.1

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

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

Eye UCDLA_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,

Experimenter ID UCDLA_EYE_036_001 | v1.1

procedureMetadata

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

B-scan of left cornea and lens UCDLA_EYE_077_001 | v1.1

seriesMediaParameter

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

B-scan of right retina UCDLA_EYE_072_001 | v1.1

seriesMediaParameter

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

Corneal vascularization UCDLA_EYE_009_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Left corneal thickness UCDLA_EYE_066_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Date OCT equipment last calibrated UCDLA_EYE_049_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Corneal Sclerization UCDLA_EYE_080_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Scheimpflug Equipment ID UCCLA_EYE_040_001 | v1.1

procedureMetadata

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

VIP of right fundus UCCLA_EYE_074_001 | v1.1

seriesMediaParameter

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

Eye Hemorrhage or Blood Presence UCCLA_EYE_003_001 | v1.0

simpleParameter

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

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

Cornea UCDLA_EYE_007_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

Left vitreous humour thickness UCDLA_EYE_088_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Corneal ulcer UCDLA_EYE_085_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 for both eyes, no data left eye, present both eyes, present right eye, absent,
no data right eye, present left eye,

Lacrimation UCDLA_EYE_086_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Slit Lamp Equipment ID UCDLA_EYE_030_001 | v1.2

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Fusion between cornea and lens UCDLA_EYE_018_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Right corneal thickness UCDLA_EYE_060_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Corneal opacity UCDLA_EYE_008_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

Pupil Shape UCDLA_EYE_012_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

VIP of right eye UCDLA_EYE_078_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Corneal deposits UCDLA_EYE_081_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Slit Lamp Equipment Model UCDLA_EYE_032_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Iris/Pupil UCDLA_EYE_010_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Scheimpflug description UCDLA_EYE_053_001 | v1.0

simpleParameter

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

Mean left eye lens density UCDLA_EYE_056_001 | v1.1

simpleParameter

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

Unit Measured: %

Synechia UCDLA_EYE_019_001 | v1.0

simpleParameter

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

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

Right inner nuclear layer UCDLA_EYE_063_001 | v1.2

simpleParameter

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

Unit Measured: um

Right anterior chamber depth UCDLA_EYE_061_001 | v1.2

simpleParameter

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

Unit Measured: um

Min left eye lens density UCDLA_EYE_054_001 | v1.2

simpleParameter

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

Unit Measured: %

Left anterior chamber depth UCDLA_EYE_067_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Right posterior chamber depth UCDLA_EYE_065_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Optical Coherence Tomography Equipment Model UCDLA_E

YE_039_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Date Scheimpflug equipment last calibrated UCDLA_EYE_048_0

01 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

B-scan of left retina UCDLA_EYE_073_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Retinal Blood Vessels UCDLA_EYE_024_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

Dilation Method UCDLA_EYE_043_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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

Date Slit Lamp equipment last calibrated UCDLA_EYE_046_001 | v1.1

procedureMetadata

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

Left total retinal thickness UCDLA_EYE_068_001 | v1.2

simpleParameter

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

Unit Measured: um

Retinal Blood Vessels Pattern UCDLA_EYE_026_001 | v1.0

simpleParameter

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

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

Left posterior chamber depth UCDLA_EYE_071_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Ophthalmoscope Observation UCDLA_EYE_029_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Sheimpflug Lens description UCDLA_EYE_052_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Ophthalmoscope Equipment ID UCDLA_EYE_033_001 | v1.2

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Eyelid closure UCDLA_EYE_005_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Left eye diameter UCDLA_EYE_091_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: mm

Max left eye lens density UCDLA_EYE_055_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

Lens Opacity UCDLA_EYE_017_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

Retinal Blood Vessels Structure UCCLA_EYE_025_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

General Anesthetic UCCLA_EYE_045_001 | v1.1

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

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

Optical Coherence Tomography Equipment Manufacturer

UCCLA_EYE_038_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Bioptigen, Heidelberg Engineering,

Pupil Light Response UCDLA_EYE_014_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

Right outer nuclear layer UCDLA_EYE_064_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Ophthalmoscope Equipment Manufacturer UCDLA_EYE_034_001 | v1.2

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

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

Date Ophthalmoscope equipment last calibrated

UCDLA_EYE_047_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

B-scan of right cornea and lens

UCDLA_EYE_076_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Left outer nuclear layer

UCDLA_EYE_070_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: um

Retina (combined) UCCLA_EYE_092_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Narrow eye opening UCCLA_EYE_006_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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