

# Light-Dark Test JAXLA\_LDT\_002

## Purpose

To monitor the anxiety-related behaviour of mice in a two-chambered light-dark arena over a defined period of time in order to assess the anxiety phenotype.

## Experimental Design

- **Minimum number of animals** : 7M + 7F
- **Age at test**: Week 70
- **Sex**: We would expect the results of this test to show sexual dimorphism

## Procedure

1. Light levels are set so that the light intensity within the light arena is between 100 – 200 lux and the dark arena is at 4-7 lux. Light metering is performed at the start of each test day.
2. The method of recording is set up with each arena defined. The light arena is approximately one third to half of entire chamber.
3. One mouse is placed in each *light arena* and recording is started.
4. A minimum of 5 minute should be recorded up to a maximum of 20 minutes.
5. At the end of the trial, the mice are removed from the arena and returned to their home cages.
6. The chambers are cleaned with disinfectant between mice to decontaminate and remove scent cues from previously tested mice.
7. Analysis of the recording is done to measure the activity of each mouse in each of the two zones and the number of transitions between zones.

## Notes

Local data processing may be implemented to calculate derived measures from this data.

## Data QC

Local QC data to assure all data fields have recorded data. In the case all data fields have a value of 0 that particular mouse data will be removed.

1. Verify the total time of each run

## Parameters and Metadata

### Light side arena dimensions (L x W x H, in mm) JAXLA\_LDT\_029\_002 | v1.0

procedureMetadata

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

Options: 433 x 215 x 305, 180 x 207 x 140, 431.8 x 212.725 x 203.2, 250 x 190 x 250,

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### Total distance travelled JAXLA\_LDT\_015\_002 | v1.0

seriesParameter

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

Unit Measured: cm

Increments: 10, 15, 20, 5,

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### Entry way dimensions (L x W x H, in mm) JAXLA\_LDT\_031\_002 | v1.0

procedureMetadata

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

Options: 5 x 100 x 40, 90 x 3 x 115, 101.6 x 3.175 x 101.6, 5 x 100 x 50,

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## Vertical activity (rearing) JAXLA\_LDT\_012\_002 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: count

Increments: 5, 20, 15, 10,

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## Light level light chamber JAXLA\_LDT\_016\_002 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: Lux

Options: 275 Lux, 100 - 200,

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## Percent time in light JAXLA\_LDT\_008\_002 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

**Derivation:**

mul(div(sub(sumOfIncrements('JAXLA\_LDT\_002\_002',1), 'JAXLA\_LDT\_006\_002'), add  
(sumOfIncrements('JAXLA\_LDT\_004\_002',1), sub(sumOfIncrements('JAXLA\_LDT\_002\_002',  
1), 'JAXLA\_LDT\_006\_002'))), 100)

**Software version** JAXLA\_LDT\_034\_002 | v1.0

procedureMetadata

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

**Options:** Activity Monitor V6.02, Activity Monitor V7.0.5.10,

**Time mobile dark side** JAXLA\_LDT\_005\_002 | v1.0

seriesParameter

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

**Unit Measured:** s

**Increments:** 10, 20, 5, 15,

**Arena version** JAXLA\_LDT\_021\_002 | v1.0

procedureMetadata

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

**Options:** Custom made, MED-OFAS-RSU,

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## Repetitive beam break ('stereotypy counts') JAXLA\_LDT\_014\_002 | v1.0

seriesParameter

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

**Unit Measured:** count

**Increments:** 20, 5, 10, 15,

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## Side changes JAXLA\_LDT\_001\_002 | v1.0

seriesParameter

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

**Unit Measured:** count

**Increments:** 15, 5, 10, 20,

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## Light-Darkbox set-up JAXLA\_LDT\_028\_002 | v1.0

procedureMetadata

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

**Options:** Cabinet enclosure, Standalone,

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**Disinfectant** JAXLA\_LDT\_025\_002 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** Distel 2%, 50% Ethanol, 70% Isopropanol, 10% Nolvasan Solution, 70% ethanol, Pursept-A, Alcohol, 1% Virkon solution, Clidox, 50% alcohol,

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**Light level dark chamber** JAXLA\_LDT\_017\_002 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Unit Measured:** Lux

**Options:** 4 - 7,

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**Light side time spent** JAXLA\_LDT\_002\_002 | v1.0

seriesParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

Unit Measured: s

Increments: 20, 5, 10, 15,

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## Dark side time spent JAXLA\_LDT\_004\_002 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Unit Measured: s

Increments: 10, 15, 20, 5,

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## Starting position JAXLA\_LDT\_026\_002 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Options: Facing away from entry, Facing towards entry,

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## Test duration JAXLA\_LDT\_033\_002 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: min

**Options:** 5, 20, 10,

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**Equipment ID** JAXLA\_LDT\_022\_002 | v1.0

procedureMetadata

**Req. Analysis:** true

**Req. Upload:** true

**Is Annotated:** false

**Options:** Light-Dark Insert, Dark Box Insert ENV-516, Custom made,

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**Arena ID** JAXLA\_LDT\_020\_002 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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**Horizontal activity** JAXLA\_LDT\_013\_002 | v1.0

seriesParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Unit Measured:** count

**Increments:** 15, 10, 5, 20,

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**Latency to first transition into dark** JAXLA\_LDT\_006\_002 | v1.0

simpleParameter

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

Unit Measured: s

**Time mobile light side** JAXLA\_LDT\_003\_002 | v1.0

seriesParameter

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

Unit Measured: s

Increments: 20, 5, 10, 15,

**Equipment manufacturer** JAXLA\_LDT\_023\_002 | v1.0

procedureMetadata

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

Options: Med Associates, Accuscan, Med Association Inc., Custom made,

**Experimenter ID** JAXLA\_LDT\_018\_002 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Transition JAXLA\_LDT\_009\_002 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No, Yes,

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## Equipment model JAXLA\_LDT\_024\_002 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Options: Versamax, Custom made, Activity Test Chamber ENV-515,

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## Percent time in dark JAXLA\_LDT\_007\_002 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: %

**Derivation:**

mul(div(sumOfIncrements('JAXLA\_LDT\_004\_002',1), add(sumOfIncrements('JAXLA\_LDT\_004\_002',1), sub(sumOfIncrements('JAXLA\_LDT\_002\_002',1), 'JAXLA\_LDT\_006\_002'))), 100)

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**Dark side arena dimensions (L x W x H, in mm)** JAXLA\_LDT\_030\_002 | v1.0

procedureMetadata

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

**Options:** 425 x 210 x 305, 431.8 x 212.725 x 203.2, 150 x 190 x 250, 180 x 207 x 140,

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**Start time** JAXLA\_LDT\_019\_002 | v1.0

procedureMetadata

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

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**Light-Darkbox's walls opaque** JAXLA\_LDT\_027\_002 | v1.0

procedureMetadata

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

**Options:** No, Yes,

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## Dark side distance travelled JAXLA\_LDT\_011\_002 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: cm

Increments: 10, 20, 5, 15,

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## Light side distance travelled JAXLA\_LDT\_010\_002 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: cm

Increments: 15, 10, 5, 20,

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## Time spent in the light side in the first 5 minutes JAXLA\_LDT\_032\_002 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Derivation:**

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ifElse('JAXLA_LDT_006_002'<300, sub(incrementValue('JAXLA_LDT_002_002',  
1),'JAXLA_LDT_006_002'), 300)
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