Hole-board Exploration UCD_HBD_001

Purpose

To monitor the activity of mice in holeboard apparatus over a defined period of time in order to assess the exploratory and attentional phenotype.

Description:

MP:0001417 - decreased exploration in new environment

MP:0001415 - increased exploration in new environment

Experimental Design

- **Minimum number of animals :** 7M + 7F
- **Age at test:** Week 9
- **Sex:** We would expect the results of this test to show sexual dimorphism

Equipment

AccuScan Hole-board

Procedure

1. Mice are allowed to acclimatise to the phenotyping room for a minimum of 24 hours.
2. Photobeam sensor check will be performed at the start of each test day or in the event of drift in control parameters using the built-in diagnostic function.

The method of recording is set up with:

1. One mouse is placed in the centre of each arena facing to the left of experimenter and released. Males and females must be run in separate tests.
2. A 10 minute period of recording is started after all mice have been placed within an arena.
3. At the end of the 10 minute trial, the mice are removed from the arena and returned to their home cages.
4. The chambers are cleaned with a 1% solution of Virkon S between mice to decontaminate and remove scent cues from previously tested mice.
5. Analysis of the recording is done to measure the activity of each mouse.



Notes

The Versamax Files were converted to data text files using the program Versadat. The program is used to output an ACT File (contains general movement information) and a HPS File (contains nosepoke sequence information). Raw data is stored until outlier detection and other QA/QC procedures are complete.

Local data processing will be implemented to calculate derived measures from this data and a table of the derived measures and raw time per bin per zone will be reported per mouse in our Laboratory Information Management System (LIMS).

Local QC data to assure all data fields have recorded within each 5-minute recording bin. In the case all data fields are 0 for any particular bin that test data would be removed.

1. Verify total time of each run is 10 minutes.
2. DCC should report all > 5 standard deviation outliers.
3. VersaMax provides both duration of sensor fault or connectivity errors in total seconds. Values for unacceptable parameters should be discarded if greater than 60 seconds, if more than 10 continuous seconds of errors occur Accuscan will stop the trial.

Parameters and Metadata

Total holepokes UCD_HBD_001_001 | v1.0

simpleParameter

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

Unit Measured: count

Holepoke sequence UCD_HBD_002_001 | v1.0

seriesParameter

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

Description:
This is the sequence the mice follows through the course of the test. We want to capture the path of seeking the mouse takes. I hope that makes sense but we want to know the 1st hole number poked right through to the last in the order it occurs.

Increments: Minimum 0

Experimenter ID UCD_HBD_003_001 | v1.0

procedureMetadata

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

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Equipment ID UCD_HBD_004_001 | v1.0

procedureMetadata

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

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Equipment manufacturer UCD_HBD_005_001 | v1.0

procedureMetadata

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

Options: Accuscan, Columbus Instruments,

Equipment model UCD_HBD_006_001 | v1.0

procedureMetadata

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

Options: Versamax, Opto-Varimex 4,

Start time UCD_HBD_007_001 | v1.0

procedureMetadata

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

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Arena ID UCD_HBD_008_001 | v1.0

procedureMetadata

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

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Arena version UCD_HBD_009_001 | v1.0

procedureMetadata

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

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Light level UCD_HBD_010_001 | v1.0

procedureMetadata

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

Unit Measured: Lux

Options: 100-200,
