

Combined SHIRPA and Dysmorphology TC

PIP_CSD_003

Purpose

SHIRPA and dysmorphology were originally always separate assessments. However they have recently been combined as assessments, so that they take place at the same time.

The purpose of the assessments is to examine mice for obvious physical characteristics, behaviors and morphological abnormalities.

Descriptions include abnormal locomotion/appearance/behavior/reflex reactions.

Experimental Design

- **Minimum number of animals** : 7M + 7F
- **Age at test**: Week 26
- **Sex**: We would expect the results of this test to show sexual dimorphism

Equipment

- Viewing Jar
- SHIRPA arena
- Grid above arena
- Click Box
- Geotaxis grid
- Tube for contact righting
- Photo and/or video camera

Procedure

1. Allow the mice to acclimatise to the phenotyping room for a period of 30 minutes prior to testing.
2. Throughout the test note any vocalisation, aggression, salivation or unexpected behaviours.
3. During this test, note any unexpected dysmorphological characteristics (morphological irregularities are recorded by video sequences or photos).
4. Place the mouse in a clear cylinder over a wire grid and observe for activity and tremors.
5. Transfer the mouse out of the cylinder by removing the metal plate/grid whilst positioning 30cm over an arena and record the transfer arousal.

6. Record the number of 10cm² squares the mouse moves into in the first 30 seconds in the arena (locomotor activity).
7. Allow the mouse to move freely around the arena whilst being observed for gait and tail elevation.
8. Hold the click box approximately 30cm above the arena and press the button, record the response of the mouse.
9. Pick up the mouse by the tail and observe for limp grasping and trunk curl. Trunk curl must only be recorded if the mouse curls forward without twisting its body, bending to one side is not scored as a trunk curl.
10. Place the mouse in a small transparent tube. Turn the tube quickly so the mouse is fully upside down and record if the mouse rights itself.
11. Record any vocalisation and/or aggression which were observed throughout the entire test

Notes

1. If wiping down with ethanol prior to the use of equipment, make sure no ethanol residue remains as the ethanol may affect the behaviour of the animals.
2. The validity of results obtained from behavioural phenotyping is largely dependent on methods of animal husbandry. It is important that individuals following this procedure are experienced and aware of the animal's welfare, and is familiar with the animal being tested, in order to reduce the anxiety levels of the animal prior to testing.
3. The majority of mouse behavioural studies are age/sex/strain dependent. It is important to keep these parameters comparable throughout a single experiment.
4. Environmental factors may contribute to the levels of anxiety within the mouse. The temperature, humidity, ventilation, noise intensity and light intensity must be maintained at levels appropriate for mice. It is essential that the mice be kept in a uniform environment before and after testing to avoid anomalous results being obtained.
5. It is recommended that all phenotyping experimentation is conducted at approximately the same time of day because physiological and biochemical parameters change throughout the day.
6. When a number of mice are tested continuously, residual odours from the equipment used in the preceding test may affect the test results. The floor and walls of the arena, ruler, and metal net should be wiped clean before introducing the next mouse. To prevent infection, the equipment should be washed with water at the completion of the day's tests. Some specific pathogen-free facilities use ultraviolet irradiation when tests are not being performed. Care needs to be taken, however, to ensure that ultraviolet irradiation does not crack any acrylate equipment covered with residual alcohol.

Parameters and Metadata

Coat - color - head TCPIP_CSD_006_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No data, As expected, Not as expected,

Coat - hair texture / appearance - head TCPIP_CSD_015_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected, No data,

Unexpected behaviors TCPIP_CSD_037_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: None, Jumping, Retropulsion, Other, Circling,

Gait TCPIP_CSD_033_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Lack of fluidity in movement, Fluid movement,

Skin texture - snout TCPIP_CSD_063_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Locomotor activity TCPIP_CSD_032_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Unit Measured: Squares crossed

Hindlimbs - size TCPIP_CSD_022_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Both hindlimbs - decreased, One hindlimb only - decreased,
Both hindlimbs - increased, One hindlimb only - increased,

Coat - color pattern - abdomen TCPIP_CSD_010_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, No data, Not as expected,

Forelimb digit - number TCPIP_CSD_044_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One forelimb - increased number, One forelimb - decreased number,
Both forelimbs - decreased number, As expected, Both forelimbs - increased number,

Size of squares in arena TCPIP_CSD_086_001 | v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

Unit Measured: cm^2

Forelimb digit - shape TCPIP_CSD_048_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One forelimb - not as expected, Both forelimbs - not as expected, As expected,

Activity (body position) TCPIP_CSD_029_001 | v1.0

simpleParameter

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

Options: Increased activity, Inactive, As expected,

Head morphology TCPIP_CSD_026_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Transfer arousal TCPIP_CSD_031_001 | v1.2

simpleParameter

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

Options: As expected, Immediate movement, Extended freeze,

Coat - color - back TCPIP_CSD_005_001 | v1.0

simpleParameter

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

Options: As expected, No data, Not as expected,

Coat - hair distribution - abdomen TCPIP_CSD_013_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Genitalia - morphology TCPIP_CSD_073_001 | v1.1

simpleParameter

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

Options: Not as expected, No data, As expected,

Vibrissae - appearance TCPIP_CSD_024_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, No data, As expected,

Hindlimb nail - shape TCPIP_CSD_055_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No data, Both hindlimbs - not as expected, As expected,
One hindlimb - not as expected,

Forelimb nail - length TCPIP_CSD_052_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No data, One forelimb - decreased length, Both forelimbs - increased length,
One forelimb - increased length, Both forelimbs - decreased length, As expected,

Head bobbing TCPIP_CSD_080_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Present, Absent,

Skin texture - ear TCPIP_CSD_064_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Coat - hair distribution - back TCPIP_CSD_011_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Coat - color pattern - back TCPIP_CSD_008_001 | v1.0

simpleParameter

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

Options: As expected, No data, Not as expected,

Hindlimb digit - size TCPIP_CSD_047_001 | v1.2

simpleParameter

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

Options: One hindlimb - increased size, As expected, Both hindlimbs - increased size, Both hindlimbs - decreased size, One hindlimb - fused, Both hindlimbs - fused, One hindlimb - decreased size,

Head size TCPIP_CSD_025_001 | v1.0

simpleParameter

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

Options: Increased, Decreased, As expected,

Skin color - whole body TCPIP_CSD_056_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Skin texture - front paws TCPIP_CSD_065_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Trunk curl TCPIP_CSD_038_001 | v1.0

simpleParameter

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

Options: No data, Present, Absent,

Tail - morphology TCPIP_CSD_004_001 | v1.1

simpleParameter

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

Options: As expected, No data, Not as expected,

Snout size TCPIP_CSD_028_001 | v1.0

simpleParameter

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

Options: Decreased, As expected, Increased,

Forelimb nail - shape TCPIP_CSD_054_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No data, Both forelimbs - not as expected, One forelimb - not as expected, As expected,

Startle response TCPIP_CSD_036_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: None, Present, No data,

Forepaw - shape TCPIP_CSD_042_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One forepaw - not as expected, As expected, Both forepaws - not as expected,

Tail elevation TCPIP_CSD_034_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Options: As expected, No data, Straub / elevated tail, Dragging,

Coat - hair distribution - head TCPIP_CSD_012_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Hindlimb nail - number TCPIP_CSD_051_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Both hindlimbs - decreased number, As expected,
Both hindlimbs - increased number, One hindlimb - decreased number, No data,
One hindlimb - increased number,

Upper lip morphology TCPIP_CSD_075_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Coat - hair texture / appearance - abdomen TCPIP_CSD_016_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected, No data,

Hindlimbs - shape TCPIP_CSD_021_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Both hindlimbs - not as expected,
One hindlimb only - not as expected,

Forelimbs - shape TCPIP_CSD_018_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One forelimb only - not as expected, Both forelimbs - not as expected, As expected,

Skin color - front paws TCPIP_CSD_059_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Experimenter ID TCPIP_CSD_081_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Forelimbs - position TCPIP_CSD_017_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, One forelimb only - not as expected, Both forelimbs - not as expected,

Genitalia - presence TCPIP_CSD_071_001 | v1.1

simpleParameter

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

Options: As expected, Absent,

Vibrissae - presence TCPIP_CSD_023_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Location of test TCPIP_CSD_082_001 | v1.1

procedureMetadata

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

Options: LAF cabinet, Open bench,

Vocalization TCPIP_CSD_078_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected,

Number of days since cage changed TCPIP_CSD_084_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Mouth morphology TCPIP_CSD_074_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected,

Upper teeth appearance TCPIP_CSD_069_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, No data, Not as expected,

Comments (in English) TCPIP_CSD_087_001 | v1.2

simpleParameter

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

Skin color - snout TCPIP_CSD_057_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Tail - thickness TCPIP_CSD_003_001 | v1.1

simpleParameter

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

Options: No data, Decreased, Increased, As expected,

Hindlimb nail - length TCPIP_CSD_053_002 | v2.0

simpleParameter

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

Options: As expected, No data, One hindlimb - increased length,
One hindlimb - decreased length, Both hindlimbs - increased length,
Both hindlimbs - decreased length,

Tail - length TCPIP_CSD_002_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Short, As expected, No data, Long,

Forelimb digit - size TCPIP_CSD_046_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One forelimb - decreased size, Both forelimbs - fused,
One forelimb - increased size, One forelimb - fused, Both forelimbs - increased size,
As expected, Both forelimbs - decreased size,

Contact righting TCPIP_CSD_077_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Present, Absent, No data,

Ears TCPIP_CSD_027_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Skin color - ear TCPIP_CSD_058_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Lower lip morphology TCPIP_CSD_076_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Coat - hair texture / appearance - back TCPIP_CSD_014_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No data, As expected, Not as expected,

Genitalia - size TCPIP_CSD_072_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, No data, Not as expected,

Hindpaw - size TCPIP_CSD_041_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Both hindpaws - decreased, Both hindpaws - increased, One hindpaw - increased, As expected, One hindpaw - decreased,

Coat - color - abdomen TCPIP_CSD_007_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No data, Not as expected, As expected,

Hindlimb digit - shape TCPIP_CSD_049_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One hindlimb - not as expected, As expected, Both hindlimbs - not as expected,

Images TCPIP_CSD_085_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Hindlimbs - position TCPIP_CSD_020_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One hindlimb only - not as expected, Both hindlimbs - not as expected,
As expected,

Skin texture - whole body TCPIP_CSD_062_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected,

Forepaw - size TCPIP_CSD_040_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, One forepaw - decreased, One forepaw - increased,
Both forepaws - decreased, Both forepaws - increased,

Hindpaw - shape TCPIP_CSD_043_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One hindpaw - not as expected, Both hindpaws - not as expected, As expected,

Lower teeth appearance TCPIP_CSD_070_001 | v1.0

simpleParameter

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

Options: As expected, No data, Not as expected,

Coat - color pattern - head TCPIP_CSD_009_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected, No data,

Number of animals in cage TCPIP_CSD_083_001 | v1.2

procedureMetadata

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

Skin texture - tail TCPIP_CSD_067_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected, No data,

Limb grasp TCPIP_CSD_039_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: No data, Present, Absent,

Skin color - back paws TCPIP_CSD_060_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected,

Aggression TCPIP_CSD_079_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Excessive aggression, As expected,

Teeth presence TCPIP_CSD_068_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

Forelimbs - size TCPIP_CSD_019_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Both forelimbs - increased, As expected, One forelimb only - increased,
One forelimb only - decreased, Both forelimbs - decreased,

Tail - presence TCPIP_CSD_001_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Absent, Present,

Forelimb nail - number TCPIP_CSD_050_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Both forelimbs - decreased number, No data,
One forelimb - increased number, Both forelimbs - increased number,
One forelimb - decreased number,

Hindlimb digit - number TCPIP_CSD_045_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: One hindlimb - increased number, Both hindlimbs - increased number,
As expected, One hindlimb - decreased number, Both hindlimbs - decreased number,

Skin color - tail TCPIP_CSD_061_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected, No data,

Skin texture - back paws TCPIP_CSD_066_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected,

Tremor TCPIP_CSD_030_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Present, Absent,
