Combined SHIRPA and Dysmorphology IMP C_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 9
- **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 10cm^2 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

Genitalia - size IMPC_CSD_072_001 | v1.1

simpleParameter

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

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

Genitalia - presence IMPC_CSD_071_001 | v1.1

simpleParameter

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

Options: Absent, As expected,

Vibrissae - appearance IMPC_CSD_024_001 | v1.0

simpleParameter

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

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

Ears IMPC_CSD_027_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Skin texture - snout IMPC_CSD_063_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Coat - color pattern - head IMPC_CSD_009_001 | v1.0

simpleParameter

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

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

Forelimb nail - number IMPC_CSD_050_002 | v2.0

simpleParameter

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

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

Lower teeth appearance IMPC_CSD_070_001 | v1.0

simpleParameter

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

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

Coat - hair distribution - abdomen IMPC_CSD_013_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Forelimb digit - number IMPC_CSD_044_002 | v2.0

simpleParameter

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

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

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Experimenter ID IMPC_CSD_081_001 | v1.0

procedureMetadata

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

Hindlimb digit - size IMPC_CSD_047_001 | v1.2

simpleParameter

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

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

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Skin texture - back paws IMPC_CSD_066_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Mouth morphology IMPC_CSD_074_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Coat - color pattern - abdomen IMPC_CSD_010_001 | v1.0

simpleParameter

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

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

Forelimbs - size IMPC_CSD_019_001 | v1.0

simpleParameter

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

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

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Contact righting IMPC_CSD_077_001 | v1.0

simpleParameter

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

Options: Absent, Present, No data,

Coat - color - abdomen IMPC_CSD_007_001 | v1.0

simpleParameter

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

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

Aggression IMPC_CSD_079_001 | v1.0

simpleParameter

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

Options: As expected, Excessive aggression,

Forepaw - size IMPC_CSD_040_002 | v2.0

simpleParameter

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

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

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Hindlimb digit - number IMPC_CSD_045_002 | v2.0

simpleParameter

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

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

Both hindlimbs - decreased number, Both hindlimbs - increased number,

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Location of test IMPC_CSD_082_001 | v1.1

procedureMetadata

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

Options: Open bench, LAF cabinet,

Locomotor activity IMPC_CSD_032_001 | v1.2

simpleParameter

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

Unit Measured: Squares crossed

Vibrissae - presence IMPC_CSD_023_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Forelimb nail - length IMPC_CSD_052_002 | v2.0

simpleParameter

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

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

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Head morphology IMPC_CSD_026_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Hindlimb nail - length IMPC_CSD_053_002 | v2.0

simpleParameter

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

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

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Skin color - front paws IMPC_CSD_059_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Hindpaw - size IMPC_CSD_041_002 | v2.0

simpleParameter

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

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

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Tremor IMPC_CSD_030_001 | v1.0

simpleParameter

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

Options: Present, Absent,

Hindpaw - shape IMPC_CSD_043_002 | v2.0

simpleParameter

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

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

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Skin color - whole body IMPC_CSD_056_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Skin color - ear IMPC_CSD_058_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Activity (body position) IMPC_CSD_029_001 | v1.0

simpleParameter

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

Options: As expected, Increased activity, Inactive,

Hindlimb nail - shape IMPC_CSD_055_002 | v2.0

simpleParameter

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

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

Forepaw - shape IMPC_CSD_042_002 | v2.0

simpleParameter

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

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

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Hindlimb nail - number IMPC_CSD_051_002 | v2.0

simpleParameter

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

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

Tail - morphology IMPC_CSD_004_001 | v1.1

simpleParameter

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

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

Head size IMPC_CSD_025_001 | v1.0

simpleParameter

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

Options: Decreased, Increased, As expected,

Hindlimbs - shape IMPC_CSD_021_001 | v1.1

simpleParameter

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

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

Head bobbing IMPC_CSD_080_001 | v1.0

simpleParameter

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

Options: Present, Absent,

Lower lip morphology IMPC_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 - abdomen IMPC_CSD_016_001 | v1.0

simpleParameter

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

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

Tail - presence IMPC_CSD_001_001 | v1.1

simpleParameter

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

Options: Absent, Present,

Skin texture - front paws IMPC_CSD_065_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Forelimb digit - shape IMPC_CSD_048_002 | v2.0

simpleParameter

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

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

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Coat - hair distribution - back IMPC_CSD_011_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Coat - color - back IMPC_CSD_005_001 | v1.0

simpleParameter

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

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

Coat - hair distribution - head IMPC_CSD_012_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Hindlimb digit - shape IMPC_CSD_049_002 | v2.0

simpleParameter

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

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

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Unexpected behaviors IMPC_CSD_037_001 | v1.0

simpleParameter

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

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

Skin texture - tail IMPC_CSD_067_001 | v1.0

simpleParameter

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

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

Images IMPC_CSD_085_001 | v1.1

seriesMediaParameter

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

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Vocalization IMPC_CSD_078_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Size of squares in arena IMPC_CSD_086_001 | v1.0

procedureMetadata

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

Unit Measured: cm^2

Hindlimbs - position IMPC_CSD_020_001 | v1.1

simpleParameter

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

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

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Comments (in English) IMPC_CSD_087_001 | v1.2

simpleParameter

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

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Forelimbs - shape IMPC_CSD_018_001 | v1.0

simpleParameter

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

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

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Skin texture - whole body IMPC_CSD_062_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Trunk curl IMPC_CSD_038_001 | v1.0

simpleParameter

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

Options: Present, No data, Absent,

Tail - length IMPC_CSD_002_001 | v1.1

simpleParameter

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

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

Limb grasp IMPC_CSD_039_001 | v1.0

simpleParameter

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

Options: Absent, No data, Present,

Hindlimbs - size IMPC_CSD_022_001 | v1.1

simpleParameter

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

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

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Number of animals in cage IMPC_CSD_083_001 | v1.2

procedureMetadata

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

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Genitalia - morphology IMPC_CSD_073_001 | v1.1

simpleParameter

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

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

Skin color - snout IMPC_CSD_057_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Forelimbs - position IMPC_CSD_017_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,

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Gait IMPC_CSD_033_001 | v1.0

simpleParameter

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

Options: Fluid movement, Lack of fluidity in movement,

Coat - color pattern - back IMPC_CSD_008_001 | v1.0

simpleParameter

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

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

Tail - thickness IMPC_CSD_003_001 | v1.1

simpleParameter

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

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

Snout size IMPC_CSD_028_001 | v1.0

simpleParameter

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

Options: As expected, Decreased, Increased,

Transfer arousal IMPC_CSD_031_001 | v1.2

simpleParameter

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

Options: Immediate movement, As expected, Extended freeze,

Skin color - back paws IMPC_CSD_060_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Coat - hair texture / appearance - head IMPC_CSD_015_001 | v1.0

simpleParameter

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

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

Tail elevation IMPC_CSD_034_001 | v1.2

simpleParameter

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

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

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Upper lip morphology IMPC_CSD_075_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,

Skin color - tail IMPC_CSD_061_001 | v1.0

simpleParameter

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

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

Coat - hair texture / appearance - back IMPC_CSD_014_001 | v1.0

simpleParameter

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

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

Coat - color - head IMPC_CSD_006_001 | v1.0

simpleParameter

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

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

Number of days since cage changed IMPC_CSD_084_001 | v1.1

procedureMetadata

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

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Upper teeth appearance IMPC_CSD_069_001 | v1.0

simpleParameter

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

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

Skin texture - ear IMPC_CSD_064_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

Forelimb digit - size IMPC_CSD_046_001 | v1.1

simpleParameter

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

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

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Forelimb nail - shape IMPC_CSD_054_002 | v2.0

simpleParameter

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

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

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Startle response IMPC_CSD_036_001 | v1.1

simpleParameter

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

Options: None, Present, No data,

Teeth presence IMPC_CSD_068_001 | v1.0

simpleParameter

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

Options: Not as expected, As expected,
