

# Combined SHIRPA and Dysmorphology JA

## XLA\_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 69
- **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<sup>2</sup> 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

### Forepaw - size JAXLA\_CSD\_040\_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

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**Skin texture - back paws** JAXLA\_CSD\_066\_001 | v1.0

simpleParameter

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

**Options:** Not as expected, As expected,

---

**Skin color - snout** JAXLA\_CSD\_057\_001 | v1.0

simpleParameter

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

**Options:** As expected, Not as expected,

---

**Hindlimbs - position** JAXLA\_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,

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## Images JAXLA\_CSD\_085\_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

---

## Coat - hair texture / appearance - back JAXLA\_CSD\_014\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

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## Locomotor activity JAXLA\_CSD\_032\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Unit Measured: Squares crossed

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## Hindlimb nail - length JAXLA\_CSD\_053\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Head size JAXLA\_CSD\_025\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Decreased, Increased, As expected,

---

## Aggression JAXLA\_CSD\_079\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** As expected, Excessive aggression,

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## Activity (body position) JAXLA\_CSD\_029\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Increased activity, As expected, Inactive,

---

**Hindlimb digit - number** JAXLA\_CSD\_045\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

**Mouth morphology** JAXLA\_CSD\_074\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** As expected, Not as expected,

---

**Forelimbs - position** JAXLA\_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,

---

## Coat - hair texture / appearance - head JAXLA\_CSD\_015\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Genitalia - morphology JAXLA\_CSD\_073\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Coat - hair texture / appearance - abdomen JAXLA\_CSD\_016\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Forelimbs - size JAXLA\_CSD\_019\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Hindlimb digit - size JAXLA\_CSD\_047\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Coat - hair distribution - head JAXLA\_CSD\_012\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** As expected, Not as expected,

---

## Tail - thickness JAXLA\_CSD\_003\_001 | v1.1



simpleParameter

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

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

---

**Skin texture - whole body** JAXLA\_CSD\_062\_001 | v1.0

simpleParameter

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

Options: As expected, Not as expected,

---

**Experimenter ID** JAXLA\_CSD\_081\_001 | v1.0

procedureMetadata

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

---

**Tail - length** JAXLA\_CSD\_002\_001 | v1.1

simpleParameter

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

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

---

## Forelimb nail - shape JAXLA\_CSD\_054\_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Upper lip morphology JAXLA\_CSD\_075\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** Not as expected, As expected,

---

## Coat - color - head JAXLA\_CSD\_006\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

**Coat - color - back** JAXLA\_CSD\_005\_001 | v1.0

simpleParameter

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

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

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**Comments (in English)** JAXLA\_CSD\_087\_001 | v1.2

simpleParameter

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

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**Hindlimb digit - shape** JAXLA\_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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**Snout size** JAXLA\_CSD\_028\_001 | v1.0

simpleParameter

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

Options: Decreased, Increased, As expected,

---

## Limb grasp JAXLA\_CSD\_039\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Absent, Present, No data,

---

## Forepaw - shape JAXLA\_CSD\_042\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Upper teeth appearance JAXLA\_CSD\_069\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Forelimb nail - length JAXLA\_CSD\_052\_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Skin texture - front paws JAXLA\_CSD\_065\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** As expected, Not as expected,

---

## Hindlimbs - size JAXLA\_CSD\_022\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Coat - color pattern - head JAXLA\_CSD\_009\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

**Coat - hair distribution - abdomen** JAXLA\_CSD\_013\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Not as expected, As expected,

---

**Teeth presence** JAXLA\_CSD\_068\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** As expected, Not as expected,

---

**Forelimbs - shape** JAXLA\_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,

---

## Coat - color pattern - back JAXLA\_CSD\_008\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Genitalia - presence JAXLA\_CSD\_071\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Absent,

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## Contact righting JAXLA\_CSD\_077\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Present, Absent, No data,

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## **Tremor** JAXLA\_CSD\_030\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Present, Absent,

---

## **Vibrissae - presence** JAXLA\_CSD\_023\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Not as expected, As expected,

---

## **Head bobbing** JAXLA\_CSD\_080\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Present, Absent,

---

## **Lower teeth appearance** JAXLA\_CSD\_070\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true



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

---

**Size of squares in arena** JAXLA\_CSD\_086\_001 | v1.0

procedureMetadata

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

**Unit Measured:** cm^2

---

**Lower lip morphology** JAXLA\_CSD\_076\_001 | v1.0

simpleParameter

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

**Options:** As expected, Not as expected,

---

**Skin color - whole body** JAXLA\_CSD\_056\_001 | v1.0

simpleParameter

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

**Options:** As expected, Not as expected,

---

## Hindlimbs - shape JAXLA\_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,

---

## Transfer arousal JAXLA\_CSD\_031\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Options:** Immediate movement, Extended freeze, As expected,

---

## Vocalization JAXLA\_CSD\_078\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** As expected, Not as expected,

---

## Head morphology JAXLA\_CSD\_026\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** As expected, Not as expected,

---

## Tail - presence JAXLA\_CSD\_001\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Absent, Present,

---

## Skin color - back paws JAXLA\_CSD\_060\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** As expected, Not as expected,

---

## Forelimb digit - number JAXLA\_CSD\_044\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Genitalia - size JAXLA\_CSD\_072\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Gait JAXLA\_CSD\_033\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Fluid movement, Lack of fluidity in movement,

---

## Coat - hair distribution - back JAXLA\_CSD\_011\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Not as expected, As expected,

---

## Vibrissae - appearance JAXLA\_CSD\_024\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Ears JAXLA\_CSD\_027\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected,

---

## Skin texture - ear JAXLA\_CSD\_064\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: As expected, Not as expected,

---

## Unexpected behaviors JAXLA\_CSD\_037\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Forelimb digit - size JAXLA\_CSD\_046\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Number of days since cage changed JAXLA\_CSD\_084\_001 | v1.1

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

---

## Coat - color - abdomen JAXLA\_CSD\_007\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

**Skin texture - tail** JAXLA\_CSD\_067\_001 | v1.0

simpleParameter

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

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

---

**Trunk curl** JAXLA\_CSD\_038\_001 | v1.0

simpleParameter

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

**Options:** No data, Absent, Present,

---

**Skin texture - snout** JAXLA\_CSD\_063\_001 | v1.0

simpleParameter

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

**Options:** Not as expected, As expected,

---

## Forelimb digit - shape JAXLA\_CSD\_048\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Hindlimb nail - number JAXLA\_CSD\_051\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

## Hindpaw - size JAXLA\_CSD\_041\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---



## Hindpaw - shape JAXLA\_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,

---

## Forelimb nail - number JAXLA\_CSD\_050\_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Skin color - tail JAXLA\_CSD\_061\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

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

---

## Location of test JAXLA\_CSD\_082\_001 | v1.1

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** LAF cabinet, Open bench,

---

**Number of animals in cage** JAXLA\_CSD\_083\_001 | v1.2

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Tail - morphology** JAXLA\_CSD\_004\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

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

---

**Skin color - ear** JAXLA\_CSD\_058\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Options:** Not as expected, As expected,

---

## Skin color - front paws JAXLA\_CSD\_059\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: Not as expected, As expected,

---

## Hindlimb nail - shape JAXLA\_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,

---

## Tail elevation JAXLA\_CSD\_034\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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

---

## Coat - color pattern - abdomen JAXLA\_CSD\_010\_001 | v1.0

simpleParameter

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

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

---

**Startle response** JAXLA\_CSD\_036\_001 | v1.1

simpleParameter

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

Options: No data, None, Present,

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