Von Frey Test HRWL_VFR_001

Purpose

To assess mechanical sensitivity using calibrated von Frey filaments.

Experimental Design

Minimum number of mutant animals: 7 males + 7 females

Age at test: 10 weeks

Sexual dimorphism:

Procedure

1. Habituation
   1. Place mice in the testing chambers on the elevated wire grid.
   2. Leave each mouse for an hour to acclimatise.
   3. The left hind paw is tested first using the following method.
      1. The 0.6g von Frey filament should be used as the starting filament.
      2. Apply the filament to the plantar surface of the hind paw. The filament should be applied with enough force to cause the filament to bend, and remain in contact for a total of 1-2 seconds.
      3. The size of the next filament to be applied will depend on the response to the previous filament.
         • If no withdrawal response was observed then the next highest filament is tested.
         • If there was a withdrawal response then the next lowest filament is tested.
      5. Continue applying filaments until the paw has been tested 5 times, with at least 2 minutes between each stimulus presentation.
   5. Repeat the testing process with the right hind paw.

3. Test 1
   1. 24 hours after habituation, re-test the mouse with the von Frey filaments using the same procedure as described for the habituation period.

5. Test 2
   1. 48 hours after habituation, re-test the mouse with the von Frey filaments using the same procedure as described for the habituation period.

Notes

This procedure is a pilot study from the Pain Phenotyping Pilot

Parameters and Metadata
**Habituation: tabulation**  HRWL_VFR_001_001  |  v1.0

seriesParameter

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

Increments: Left, Right,

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**Habituation: final filament (target force)**  HRWL_VFR_002_001  |  v1.0

seriesParameter

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

Unit Measured: g

Increments: Left, Right,

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**Habituation: 50% threshold (grams)**  HRWL_VFR_003_001  |  v1.0

seriesParameter

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

Unit Measured: g

Increments: Left, Right,
Habituation: 50% threshold (log scaled) HRWL_VFR_004_001 | v1.0
seriesParameter


Increments: Left, Right,

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Habituation: average 50% threshold (grams) HRWL_VFR_005_001 | v1.0
simpleParameter


Unit Measured: g

Derivation: meanOfIncrements('HRWL_VFR_003_001',1)

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Habituation: average 50% threshold (log scaled) HRWL_VFR_006_001 | v1.0
simpleParameter


Derivation: meanOfIncrements('HRWL_VFR_004_001',1)

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**Test 1: tabulation**  HRWL_VFR_007_001 | v1.0

seriesParameter

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Increments: Left, Right,

**Test 1: final filament (target force)**  HRWL_VFR_008_001 | v1.0

seriesParameter

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Unit Measured: g

Increments: Left, Right,

**Test 1: 50% threshold (grams)**  HRWL_VFR_009_001 | v1.0

seriesParameter

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Unit Measured: g

Increments: Left, Right,
Test 1: 50% threshold (log scaled)  

**seriesParameter**

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

Increments: Left, Right,

Test 1: average 50% threshold (grams)  

**simpleParameter**

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

Unit Measured: g

Derivation: meanOfIncrements('HRWL_VFR_009_001',1)

Test 1: average 50% threshold (log scaled)  

**simpleParameter**

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

Derivation: meanOfIncrements('HRWL_VFR_010_001',1)
Test 2: tabulation HRWL_VFR_013_001 | v1.0
seriesParameter


Increments: Left, Right,

Test 2: final filament (target force) HRWL_VFR_014_001 | v1.0
seriesParameter


Unit Measured: g

Increments: Left, Right,

Test 2: 50% threshold (grams) HRWL_VFR_015_001 | v1.0
seriesParameter


Unit Measured: g

Increments: Left, Right,

Test 2: 50% threshold (log scaled) HRWL_VFR_016_001 | v1.0
seriesParameter


Increments: Left, Right,

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Test 2: average 50% threshold (grams) HRWL_VFR_017_001 | v1.0

simpleParameter


Unit Measured: g

Derivation: meanOfIncrements('HRWL_VFR_015_001',1)

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Test 2: average 50% threshold (log scaled) HRWL_VFR_018_001 | v1.0

simpleParameter


Derivation: meanOfIncrements('HRWL_VFR_016_001',1)

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Number of runs per test HRWL_VFR_019_001 | v1.0

procedureMetadata
Options: 2 (left paw first, right paw second),

Number of trials per run HRWL_VFR_020_001 | v1.0

Options: 5,

Minimum interval between filament presentation HRWL_VFR_021_001 | v1.0

Unit Measured: min

Options: 2,

Number of repeats with same filament HRWL_VFR_022_001 | v1.0
Options: Once, if response unclear repeat up to 3 times,

Minimum acclimatisation period HRWL_VFR_023_001 | v1.0


Unit Measured: Hours

Options: 1,

Paws tested HRWL_VFR_024_001 | v1.0


Options: Left and right hind paws,

Time between habituation and test 1 HRWL_VFR_025_001 | v1.0


Unit Measured: Hours
Options: 24,

Time between habituation and test 2  
HRWL_VFR_026_001 | v1.0 
procedureMetadata


Unit Measured: Hours

Options: 48,

Tetrad manufacturer  
HRWL_VFR_027_001 | v1.0 
procedureMetadata


Options: Built in-house,

Tetrad dimensions  
HRWL_VFR_028_001 | v1.0 
procedureMetadata


Unit Measured: cm
Options: 10 cm H x 6 cm W x 8 cm L,

Tetrad material HRWL_VFR_029_001 | v1.0


Options: Perspex,

Tetrad colour/opacity HRWL_VFR_030_001 | v1.0


Options: Clear,

Inset material HRWL_VFR_031_001 | v1.0


Options: Plastic,
Inset colour/opacity  HRWL_VFR_032_001 | v1.0

Options: Opaque,

Grid material  HRWL_VFR_033_001 | v1.0

Options: Stainless steel,

Grid hole size  HRWL_VFR_034_001 | v1.0

Unit Measured: mm
Options: 5 mm x 5 mm,

Filament set manufacturer  HRWL_VFR_035_001 | v1.0
Filament set model  HRWL_VFR_036_001  | v1.0

Options: Stoetling,

Filament material  HRWL_VFR_037_001  | v1.0

Options: Touch test sensory probes,

Range of filaments used (target force)  HRWL_VFR_038_001  | v1.0
**Starting filament (target force)**

HRWL_VFR_039_001 | v1.0

**Date filaments last calibrated**

HRWL_VFR_040_001 | v1.0

**Experimenter ID**

HRWL_VFR_041_001 | v1.0

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**Unit Measured:** g

**Options:** 0.04 - 4,
Disinfectant HRWL_VFR_042_001 | v1.0

Options: Distel 2%,

Delta2: difference in log10 threshold (g) HRWL_VFR_043_001 | v1.0

Unit Measured: g

Derivation:
\[ \text{sub} (\text{meanOfIncrements} ('HRWL_VFR_004_001',1), \text{meanOfIncrements} ('HRWL_VFR_016_001',1)) \]