

# Von Frey Test UCD\_VFR\_001

## Purpose

To detect mechanical/tactile sensitivity in the mouse paw

## Experimental Design

Minimum number of mutant animals: 7 males + 7 females

Age at test: 16 weeks

Sexual dimorphism:

## Procedure

### 1. Baseline measurement

1. Move the mice to the testing chambers and leave to acclimate for the specified length of time.
2. Mice should be tested using the simplified up-down method (SUDO) of Bonin et al. (2014).
3. When the mouse is still, apply the filament to the centre of the right hindpaw. Press the filament against the paw until it bends, then release.
4. Mark the response '0' if the mouse does not react, or 'X' if it does react to the filament.
5. Leave the mouse for a minimum of 2 minutes before presentation of the next filament.
6. The next filament to be tested will depend on the response to the previous filament.
  - If the mice did respond to the previous filament, they should be tested with the filament of the next smallest size. Once tested, record the response.
  - If the mice did not respond to the previous filament, they should be tested with the filament of the next largest size. Once tested, record the response.
8. Continue testing the mice until 5 trials have been completed.

### 3. Challenge

1. The challenge is administered after the baseline measurement has been completed.

### 5. Test 1

1. 24 hours after the challenge injection, re-test the mouse with the von Frey filaments using the same procedure as described for the baseline measurement.

### 7. Test 2

1. 144 hours after the challenge injection, re-test the mouse with the von Frey filaments using the same procedure as described for the baseline measurement.

## Notes

**This procedure is a pilot study from the Pain Phenotyping Pilot**

A simplified up-down method (SUDO) for measuring mechanical nociception in rodents using von Frey filaments. Bonin RP, Bories C, De Koninck Y. Mol Pain. 2014 Apr 16;10:26. doi: 10.1186/1744-8069-10-26.PMID:24739328

## Parameters and Metadata

### **Tetrad material** UCD\_VFR\_030\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** Plexiglass,

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### **Test 1: final score** UCD\_VFR\_007\_001 | v1.0

seriesParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Increments:** Minimum 1

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### **Filament set manufacturer** UCD\_VFR\_036\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** Aesthesio, Stoetling,

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## Grid material UCD\_VFR\_034\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Black painted metal,

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## Test 2: average PWT force UCD\_VFR\_015\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: g

Derivation: meanOfIncrements('UCD\_VFR\_014\_001',1)

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## Inset colour/opacity UCD\_VFR\_033\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Clear, White,

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## **Tetrad manufacturer** UCD\_VFR\_028\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** IITC,

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## **General anaesthetic for challenge injection** UCD\_VFR\_018\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** Isoflurane,

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## **Challenge** UCD\_VFR\_016\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** CFA,

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## **Time between baseline measurement and challenge** UCD\_VFR\_025\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Unit Measured:** Hours

**Options:** 2, 1,

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## Test 1: tabulation UCD\_VFR\_006\_001 | v1.0

seriesParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Increments:** Minimum 1

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## Test 2: average final score UCD\_VFR\_013\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Derivation:** meanOfIncrements('UCD\_VFR\_012\_001',1)

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## Time between challenge and test 1 UCD\_VFR\_026\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Unit Measured:** Hours

**Options:** 24, 22,

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**Site of challenge injection** UCD\_VFR\_017\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** Plantar surface of right hindpaw,

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**Baseline: average PWT force** UCD\_VFR\_005\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Unit Measured:** g

**Derivation:** meanOfIncrements('UCD\_VFR\_004\_001',1)

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**Time between challenge and test 2** UCD\_VFR\_027\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

Unit Measured: Hours

Options: 144, 142,

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**Experimenter ID** UCD\_VFR\_043\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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**Test 1: average final score** UCD\_VFR\_008\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Derivation: meanOfIncrements('UCD\_VFR\_007\_001',1)

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**Range of filaments used (target force)** UCD\_VFR\_039\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: g

Options: 0.02 - 1.4,

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## Paws tested UCD\_VFR\_024\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Right hindpaw,

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## Disinfectant UCD\_VFR\_044\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Options: Clidox/Ethanol, Quaternary Ammonia (Coverage Plus),

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## Baseline: average final score UCD\_VFR\_003\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Derivation: meanOfIncrements('UCD\_VFR\_002\_001',1)

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## Inset material UCD\_VFR\_032\_001 | v1.0

procedureMetadata



Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Plexiglass,

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**Number of trials per run** UCD\_VFR\_020\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: 5,

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**Testing methodology** UCD\_VFR\_047\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: SUDO,

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**Minimum interval between filament presentation** UCD\_VFR\_021\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Unit Measured:** min

**Options:** 2,

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**Tetrad dimensions** UCD\_VFR\_029\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Unit Measured:** cm

**Options:** 12.5 cm H x 10 cm W x 10 cm L,

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**Tetrad colour/opacity** UCD\_VFR\_031\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Options:** Clear,

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**Date filaments last calibrated** UCD\_VFR\_042\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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**Starting filament (target force)** UCD\_VFR\_040\_001 | v1.0

procedureMetadata

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

Unit Measured: g

Options: 0.16,

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**Test 2: PWT force** UCD\_VFR\_014\_001 | v1.0

seriesParameter

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

Unit Measured: g

Increments: Minimum 1

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**Filament material** UCD\_VFR\_038\_001 | v1.0

procedureMetadata

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

Options: Nylon,

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**Baseline: final score** UCD\_VFR\_002\_001 | v1.0

seriesParameter

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

Increments: Minimum 1

**Scaling parameter B** UCD\_VFR\_046\_001 | v1.0

procedureMetadata

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

**Filament set model** UCD\_VFR\_037\_001 | v1.0

procedureMetadata

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

Options: Aesthesio Precise Tactile Sensory Evaluator 20 piece kit,

**Test 1: average PWT force** UCD\_VFR\_010\_001 | v1.0

simpleParameter

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

**Unit Measured:** g

**Derivation:** meanOfIncrements('UCD\_VFR\_009\_001',1)

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**Number of repeats with same filament** UCD\_VFR\_022\_001 | v1.0  
procedureMetadata

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

**Options:** Once, 2-3, if response not obvious in first 2 then 3rd performed,

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**Test 1: PWT force** UCD\_VFR\_009\_001 | v1.0  
seriesParameter

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

**Unit Measured:** g

**Increments:** Minimum 1

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**Baseline: tabulation** UCD\_VFR\_001\_001 | v1.0  
seriesParameter

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

**Increments:** Minimum 1

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## Baseline: PWT force UCD\_VFR\_004\_001 | v1.0

seriesParameter

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

Unit Measured: g

Increments: Minimum 1

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## Grid hole size UCD\_VFR\_035\_001 | v1.0

procedureMetadata

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

Unit Measured: mm

Options: Hexagonal 8 mm corner to corner,

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## Scaling parameter X UCD\_VFR\_045\_001 | v1.0

procedureMetadata

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

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**Minimum acclimatisation period** UCD\_VFR\_023\_001 | v1.0

procedureMetadata

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

Unit Measured: Hours

Options: 1,

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**Test 2: final score** UCD\_VFR\_012\_001 | v1.0

seriesParameter

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

Increments: Minimum 1

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**Number of runs per test** UCD\_VFR\_019\_001 | v1.0

procedureMetadata

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

Options: 2, 1,

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**Starting filament (filament number)** UCD\_VFR\_041\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: 5,

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## Test 2: tabulation UCD\_VFR\_011\_001 | v1.0

seriesParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Increments: Minimum 1

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## Delta1: difference in log10 threshold(g) UCD\_VFR\_048\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Derivation:  $\text{sub}(\log_{10}(\text{'UCD\_VFR\_004\_001'}), \log_{10}(\text{'UCD\_VFR\_009\_001'}))$

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## Delta2: difference in log10 threshold (g) UCD\_VFR\_049\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Derivation:  $\text{sub}(\log_{10}(\text{'UCD\_VFR\_004\_001'}), \log_{10}(\text{'UCD\_VFR\_014\_001'}))$



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