



MotoRater gait analysis

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Pilot project introduction



- *Project partners:*



- *Basic project idea:*

Quality benchmarking for mouse behavioral testing

- *Complementary equipment used for the project:*

MotoRater (TSE, Germany)

- *Project goal:*

- **the improvement of the methodology and reproducibility of pre-clinical data**

- *Potential end-users: pharma companies, academic users*



Project implementation

<https://www.jax.org/strain/000664>



- *Methodology:*

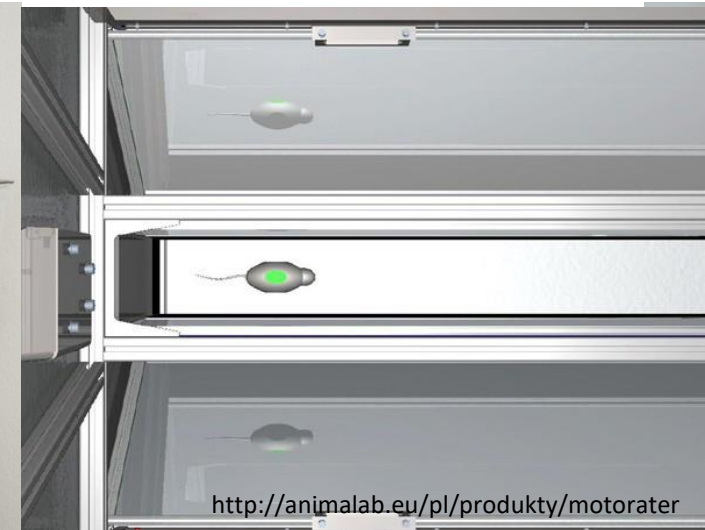
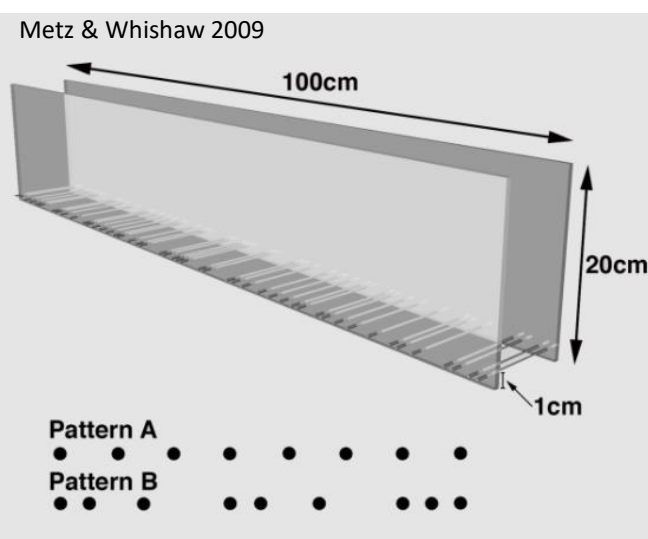
Mice model: transgenic strain (N171-82Q mice) - human Huntingtin disease + wt (C57B16 / J), n=12

Procedure 1: a ladder test

→ to record the motor function of the animal when stepping over a rung of a ladder (according to Metz & Whishaw 2009)

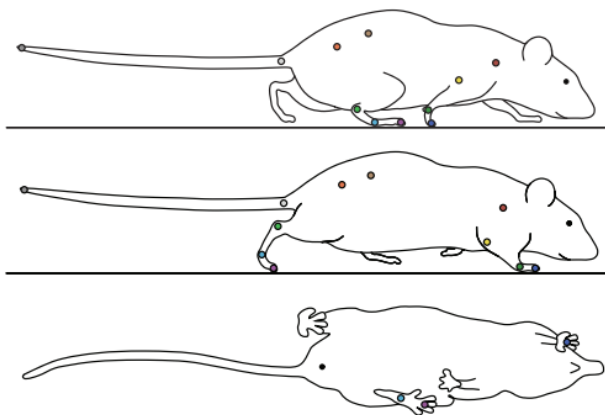
Procedure 2: a runway walking test

→ to record the motor function during running over a Plexiglas runway



Project implementation

Tracking points



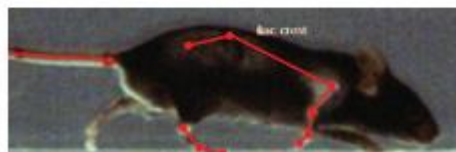
continuous:

- iliac crest
- hip
- ankle
- mtp
- hind toe
- shoulder
- elbow
- wrist
- front toe
- tail base
- tail tip

at initial paw contact

- anus
- mtp
- hind middle toe
- front middle toe

Motion tracking



<https://www.jax.org/strain/000664>

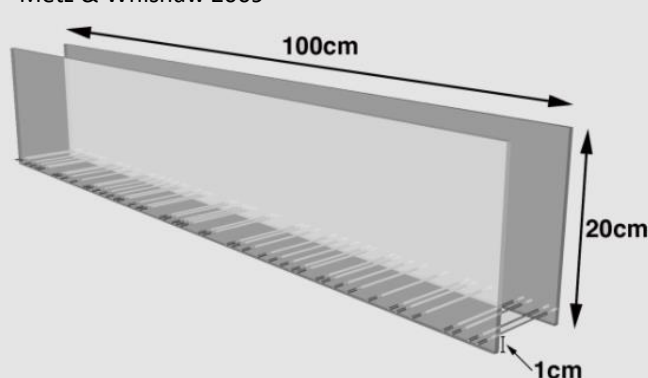
→ SIMI Motion - motion-tracking analysis
+ acquire two-dimensional coordinates of
three consecutive steps

(Preisig et al 2016)

Procedure 2: a runway walking test

→ to record the motor function during running over a Plexiglas runway

Metz & Whishaw 2009



<http://animalab.eu/pl/produkty/motorater>

Project implementation

- *The way, how we worked on it jointly :*
- Design of the procedures (one out of 3 pilot projects)
- Staff exchange - VBCF (11th March -16th March 2018 and 26th Aug-19th Sep 2018)
- Workshop in ICRC – AC/OL ‘*Best practice in the use of TSE MotoRater system*’ (15th -18th May 2018)

Practical workshops on the TSE systems: IntelliCage, PhenoMaster & MotoRater

Tuesday May 15 - Friday May 18

Dear Colleagues, it is our pleasure to invite you to AC Workshop 2018. This Workshop gives us an opportunity to learn from each other's experiences, share knowledge and start or revive collaborations. We are looking forward to seeing you in Olomouc!

15th May 2018
→ 9:30 – 18:00 CEST
Emrah Birinci
IntelliCage training:
- Hardware
- Software
- Practical application

16th May 2018
→ 9:30 – 18:00 CEST
Emrah Birinci
Evaluation of the overnight test with the use of IntelliCage PhenoMaster training

17th May 2018
→ 9:30 – 18:00 CEST
Emrah Birinci and Gerhard Vornholt
PhenoMaster training – continuation
MotoRater training

18th May 2018
→ 9:30 – 12:00 CEST
Emrah Birinci and Gerhard Vornholt
Summary of the IntelliCage, PhenoMaster and MotoRater trainings
Individual consultations

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→ Extended training on MotoRater software - VBCF (30th Aug 2018)

Project results



- No results yet.
- ICRC animal facility in Olomouc, instead of animal facility in Brno → 1 year delay in the project
- lack of the procedures approvals from both Ethical Committees