# Visuomotor Tracking skills and Cortical plasticity – Exercise induced interference effects - TraCE

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**Associated researchers/ clinicians**: -

**Funding:** -

**External partners:** -

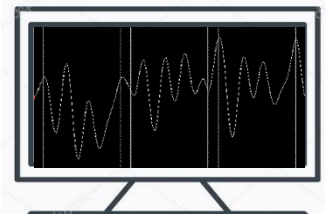
Steib, S., Cristini, J., Wanner, P., & Cheng, F. (2019, August 27). FaMoS-III. Retrieved from osf.io/z9w6v

# Background & aims

- Several studies suggest that a bout of acute aerobic exercise enhances motor memory formation (Roig et al., 2016)
- Recent data from our lab (FaMoS-I) indicates that interference may occur if exercise involves the same muscle groups as the motor task to be practiced (Wanner et al., *under review*)
- **Aim:** To investigate whether high intensity interval training (HIIT), performed immediately prior to practicing a motor skill, causes interference with motor memory formation

**HIIT Cycling**

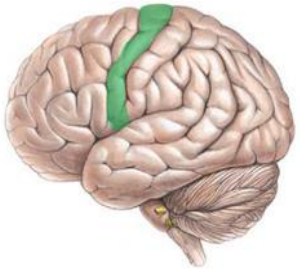
**Visuomotor tracking task**



LE Group : Pedal

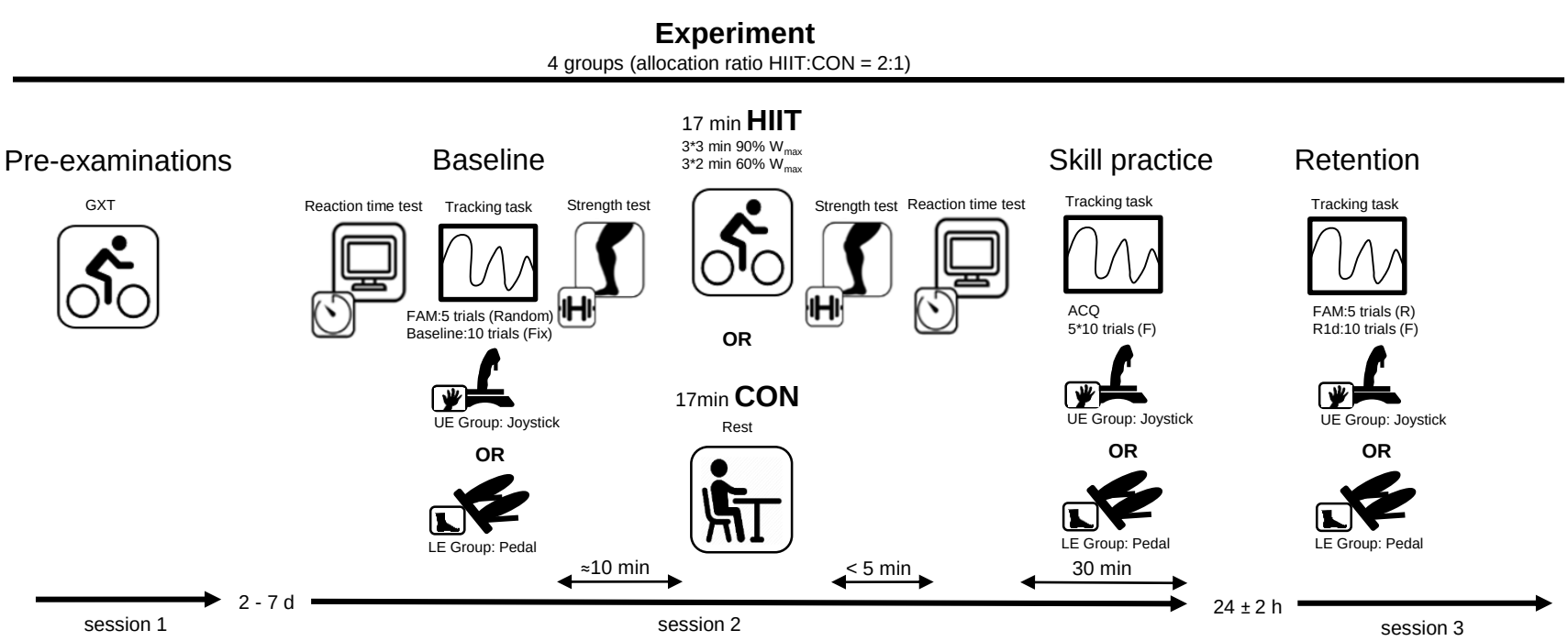
UE Group : Joystick

**M1**



**Muscle interefernce** in the motor learning

# Methods


Experiment
4 groups (allocation ratio HIIT:CON = 2:1)
Pre-examinations
GXT
Baseline
Reaction time test
Tracking task
Strength test
FAM:5 trials (Random)
Baseline:10 trials (Fix)
UE Group: Joystick
OR
LE Group: Pedal
17 min HIIT
3*3 min 90% W max
3*2 min 60% W max
OR
17min CON
Rest
Strength test
Reaction time test
Skill practice
Tracking task
ACQ
5*10 trials (F)
UE Group: Joystick
OR
LE Group: Pedal
Retention
Tracking task
FAM:5 trials (R)
R1d:10 trials (F)
UE Group: Joystick
OR
LE Group: Pedal
2 - 7 d
session 1
≈10 min
< 5 min
30 min
session 2
24 ± 2 h
session 3