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## EMG recordings

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**Protocol status:** Working

We use this protocol and it's working



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## Abstract

This is the standard protocol for recordings of bulk EMG used for Rodrigues-Vaz and Athalye et al, 2025.

## Materials

- ZIF-Clip adapter from Tucker-Davis Technologies (TDT) ZC16 headstage (16 channel ZIF-Clip)
- TDT RZ5D Bioamplifier processor (acquisition and synchronization device)
- TDT PZ5-32 (Z-series 32-channel Neuro-digitizing preamplifier)
- Synapse software from TDT for recording EMG

## Safety warnings

! -Wear appropriate PPE as required by your institution.

## Ethics statement

This protocol was approved by Columbia University IACUC. Please do not perform any of these procedures unless there is prior approval from the institution's animal ethics committee.

## Before start

- Mice were implanted with EMG electrodes in forelimb muscles, head plate, and GRIN lens and habituated to being head fixed.
- Behavior setup was prepared and placed under microscope for *in vivo* experiments.
- 2-photon microscope was also prepared for simultaneous recordings.

## General preparation

- 1 Confirm EMG recordings are set to “true differential” in Synapse recording software.
- 2 Head fix mouse in behavior setup under microscope and connect ZC16 headstage to implanted connector.
- 3 Confirm that signals are recording when mouse moves.
- 4 Optimize grounding if noise is not within normal range – mouse is grounded to air table.
- 5 Record session, confirming that all TTLs are being recorded as expected by design.
- 6 At the end of the session, turn off all behavior boards, the imaging recording and lastly the EMG recordings.
- 7 Unplug headstage and return mouse to homecage.
- 8 Transfer data to hard-drive.

## End of day procedure

- 9 Store all cables in safe location