

DeepMReye calibration protocol (DeepMReyeCalib)

The experiment made in a 3T scanner, with combined backward video-projection (ProPixx HD resolution at 120Hz, max field of view of 20 dva, 120 cm from head) and eye-tracking (EyeLink monocular tracking at 1kHz, 13 points custom made calibration before the scanner starts).

We will test 10 subjects in an experiment composed of 3 distinct parts (see below) played in fixed order and repeated 2 times (3 runs, ~3 min each). Participants are trained outside the scanner first to ensure data quality.

Anatomical sequences

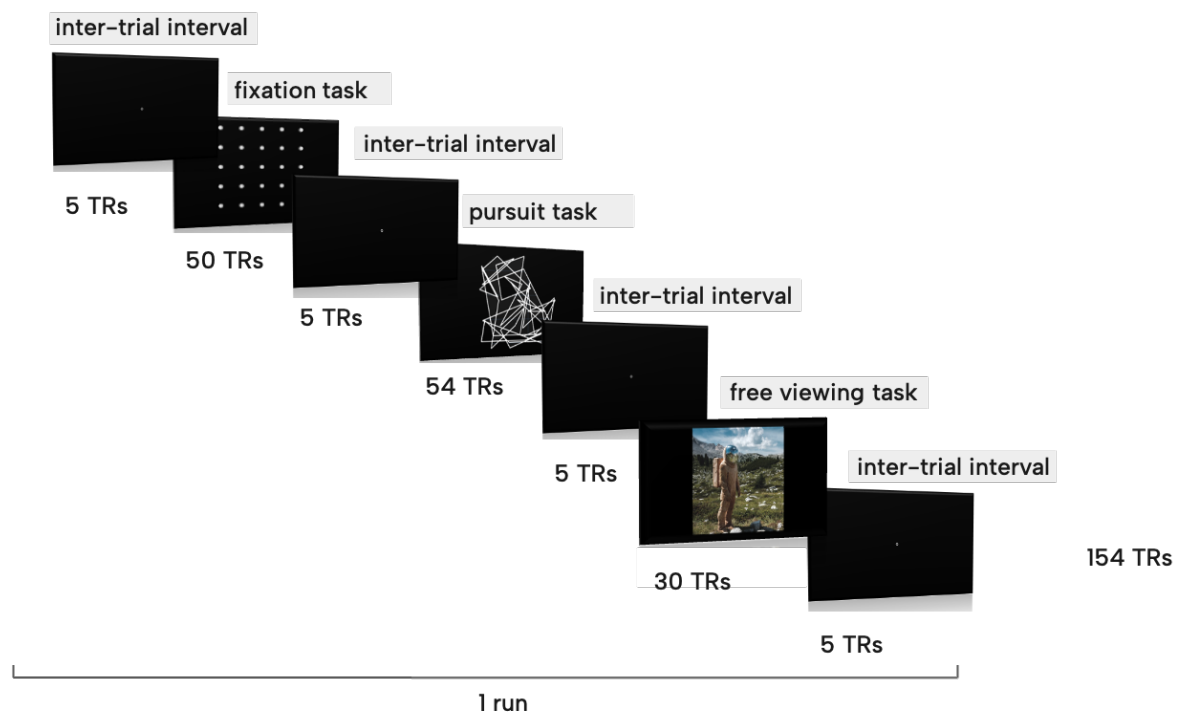
- T1w : 0.8mm and 4:05 min (T1w_MPRAGE_vNav_0p8m),
- T2w : 0.8 mm and 2:35min (T2w_vNav_08mm)

Fieldmap

- Fieldmap_topup_AP 0:35 min
- Fieldmap_topup_PA, 0:35 min

Scanning sequence

- MB4, 2mm isotropic, 1.2 sec TR, whole head 60 slices, AP



Part 1: Fixation

- A 0.25 dva (degree of visual angle) radius white bull's eye is displayed on a black background at pseudo-random locations picked on a 5 by 5 square grid of 18 dva side, each position is played twice (randomly selected while avoiding to play the same position twice in a row and ending with the central one).
- 54 trials per run
- Trial duration: 1 TR (1.2 seconds)
- This task starts and ends with inter-trial interval (ITI) of 5 TRs (6.0 seconds)
- Part duration of about ~1 min (including ITI)

Part 2: Smooth Pursuit

- The white bull's eye moves during 1TR (1.2s) on the black background with pseudo-random amplitudes of 3 dva, 5 dva, or 7 dva, repeated 54 times, at random angles selected randomly between 0-340 degrees in steps of 20°. The movement angle is selected randomly while keeping the bull's eye within a square of 18 dva side and finish in screen center.
- Duration of 1 trial: 1 TR (1.2 seconds)
- 54 trials per run
- End with inter-trial interval (ITI) of 5 TRs (6.0 seconds)
- Duration of about ~1 min (including ITI)

Part 3: Free Viewing

- Participants freely view 10 centered pictures of 18 dva side
- Duration of 1 trial: 3 TRs (3.6 seconds)
- 10 trials per run
- End with inter-trial interval (ITI) of 5 TRs (6.0 seconds)
- Duration of about ~1 min (including ITI)