**OVERALL STRUCTURE OF THE ASSESSMENT AND INTERVENTION PROTOCOL**

1. THREE MAIN PHASES

The testing protocol comprises three main phases:

* 1. Face-to-face baseline assessment, ~4 hours (here on referred to as ‘baseline assessment’)
  2. ~2-week daily off-site, online intervention, ~10-15 minutes daily
  3. Face-to-face follow up assessment, ~3 hours (~2-weeks post baseline) (here on referred to as ‘follow up assessment’)

2. ROLES OF BLINDED AND UNBLINDED TESTERS

Both blinded and unblinded testers will be present at the start of the two (baseline and follow up) assessments and will drive distinct part of the assessment. Specifically:

* 1. A blinded tester will run all experimental procedures and assessments of socio-demographic variables, substance use, mental health and cognitive performance.
  2. An unblinded tester will administer all *information* specifically pertaining to the intervention (the intervention itself and pre-to-post intervention related scales).
  3. An unblinded tester will be responsible for debrief at baseline and at follow up with queries on intervention and obtaining consent at follow up.
  4. An unblinded tester will be responsible for daily monitoring of the online tasks/intervention (e.g. VAS scales and/or audio tracks) and SMS reminders if these are missed, as well as communicating with the participant about any issues during the intervention period.
  5. During the MRI scan:
     1. A blinded tester will interact with the participant and read scripts relating to the delivery of the assessment
     2. An unblinded tester will support the running of the technical aspects of the MRI that do not require direct interaction with the participant (e.g. open and save relevant fMRI task files and logs, to ensure timely completion of the MRI).

3. OVERVIEW OF BASELINE FACE-TO-FACE ASSESSMENT

3.1. First, at the start of the baseline assessment, a blinded tester will ask the participant to review and clarify all study details explained in the Participant Information Letter and to provide written informed consent to participate in the study.

3.2. Second, a blinded tester will ask the participant to provide a urine sample to confirm the presence and absence of THC metabolites in cannabis users and non-users, respectively, and the absence of any other drug metabolites.

3.3. Then, a blinded tester will administer to the participant a battery of validated cognitive tasks (to assess IQ, attentional bias, working memory, disinhibition), semi-structured interviews and self-report questionnaires (relating to mindfulness, substance use, and mental health); as well as an MRI scan to measure brain structure and function.

3.4. Finally, an unblinded tester will administer the intervention (i.e. press play on the intervention audio track and/or provision of VAS scales and debrief the participant). Non-cannabis using controls will be reimbursed and debriefed for their participation at this stage.

4. OVERVIEW OF THE ~2-WEEK OFF-SITE INTERVENTION PERIOD

4.1 Online delivery of the daily tasks

The ~2-week intervention will be run off-site, during the period between baseline and follow up assessment. The participant will be able to practice the intervention tasks via either an online link or via relevant files on the USB, both of which will be provided at the end of baseline testing by an unblinded tester.

4.2 Content of the daily tasks

Daily tasks will be given to the three CUD groups and will differ based on the intervention condition:

* + 1. Those allocated to any intervention condition, will complete:
       1. a 1-point VAS scale to indicate the levels of: craving for cannabis, relaxation, tension, and mindful attention.
       2. a short questionnaire to indicate compliance, risk behaviour, mood, cravings, and cannabis use level.
    2. Those allocated to the mindfulness and relaxation groups, will:
       1. listen to the 7-minute audio track with the allocated intervention
       2. complete a short questionnaire to indicate if they practiced the psychological strategy explained during the audio track, when they experience cannabis craving in moments other than during the audio track.

4.3 Monitoring of participants’ compliance to daily tasks

An unblinded tester will monitor the participant’s completion of daily tasks through Qualtrics and send reminders if the participant does not complete the tasks. Reminders will be provided as follows:

* + 1. A SMS reminder, after the participant does not complete their tasks for *one* day
    2. A SMS reminder, after the participant does not complete their tasks for *two* days
    3. Phone call the participant to confirm if they are experiencing any issues to do the daily tasks, if the participant does not complete their tasks for > *two consecutive* days.
    4. daily (either SMS or phone) reminders from an unblinded tester if the participant remains non-compliant.

Regardless of the level of compliance, the follow up assessment will take place. The amount of intervention completed (e.g. total number of days or total number of minutes practiced) may be used as predictors of the outcomes of interest.

5. OVERVIEW OF THE FOLLOW UP FACE-TO-FACE ASSESSMENT

The follow up assessment takes place ~2-weeks after the baseline assessment. These assessments are identical, with some exceptions. Specifically, at follow up:

5.1. The intervention is administered at the start of the assessment after participant’ written informed consent is provided. This is to boost the effect that the 2-week intervention might have on the outcomes of interest.

5.2. The debrief includes additional questions about their experience of the intervention (e.g. if the participant found it useful and when they practiced it).

5.3. “Trait” variables already assessed at baseline will be not be measured, as these are unlikely to change over time (e.g. socio-demographic data, menstrual cycle details for females, CAPE, CUI, AUDIT, MMQ, CUD module of the SCID, and SF-36).

5.4. The WASI testing of IQ will not be administered, as this is already measured at baseline.

5.5. Measures that are irrelevant are not administered (i.e. the planning session for the two-week intervention period).