

## Physiological measures as novel biomarkers of addictive eating behaviours:

### Experimental Procedure

- 1) Briefing and consent:** participant instructed on study procedure, consent form signed
- 2) Anthropometric measures:** participant's height and weight measured
- 3) Hunger/appetite rating:** participant complete VAS
- 4) HRV measurement set-up:** participants themselves place three pre-gelled electrodes on their upper chest or wrists (as preferred by the participants). In order to assist participants with correctly placing the electrodes, they will be provided with a concise and easy-to-understand 1-page instruction document. After the electrodes are placed and connected, the researcher will connect the cable to an ECG recording device, test the signal quality with the ECG recording software prior to the ECG recording.
- 5) GSR measurement set-up:** two electrodes will be placed on the inner surface of a participant's non-dominant hand (left or right hand as indicated by the participant, using electrode gel). In order to assist experimenters and participants with correctly placing the electrodes, they will be provided with a concise and easy-to-understand 1-page instruction document. After the electrodes are placed and leads connected, the researcher will connect the leads from the electrodes to the GSR recording device, and test the signal quality with the GSR recording software.
- 6) Device calibration:** the eye-tracking system, and ECG and GSR recording devices, calibrated for each participant. Electrodes will be adjusted if necessary. Participant will fixate on a cross in the centre of the display to ensure proper gaze measurements. This procedure will take approximately 5 min and two practice trials will begin once calibration is successful.
- 7) Practice trials:** two practice trials conducted to familiarise participants with the procedure; participant presented with one set of four images (each image displayed one at a time for 5s each), followed by second set of images (i.e. 2<sup>nd</sup> trial); pupillary, ECG and GSR responses recorded
- 8) Normalisation procedure:** participants complete a resting period of at least 5 minutes before engaging in the actual experimental trial

## **9) Experimental trial:**

### **Interval 1:**

Participants will view the first set of 30 images (*Group 1: to view healthy foods; Group; 2 to view junk foods*). Images are presented one at a time for 7s each, with a fixation cross viewed in between each image for 3s (total duration =5min). *On/off task* conducted during the trial to identify non-responders: images will be auto advanced with the exception of 2 timepoints. At 100s and 200s participants will be asked to manually 'click next' on the computer screen to enable viewing of the next image. Pupillary, HRV and GSR responses recorded throughout the entire 5min interval.

**Interval 2:** wash out period - participants will view a series of neutral images for 2min (15 images x 8s each).

### **Interval 3:**

Participants presented with second set of 30 single images (*Group 1: to view junk foods; Group; 2 to view healthy foods*). The procedure is identical to Stage 1 with the exception of the images shown

**10) Trial completion:** researchers stop the recording and disconnect ECG and GSR cables from the measurement devices. Researcher removes the GSR electrodes from the skin of the participant, and uses paper towels to wipe off any remaining electrode gel. Participants disconnect the ECG cable from the electrodes, remove the electrodes from their skin, and use paper towels to wipe off any remaining electrode gel.

**11) Hunger/appetite rating:** participant complete VAS

**12) Emotional response to food images:** participants complete study specific rating scale

**13) Participant reimbursement:** participant receive AUD10 gift card at end of session