

Study Protocol and Statistical Analysis Plan

Study title: Effects of a Single Dose of Wild Blueberries on Mood and Executive Function in Healthy Emerging Adults

Date: 28 January 2023

1. Sample Size Calculation

An independent samples t-test power calculation in G*Power using positive affect (PANAS-X) as an outcome variable with an effect size $d = 0.5$ based on a previous study and $\alpha = 0.05$ (one tailed) indicates that 78 participants (39 for each group) will be required to achieve power of 0.70 (probability of correctly rejecting the null hypothesis).

2. Recruitment

Participants will be recruited primarily through the SONA Research Participant System at the School of Psychology and Clinical Language Sciences and through email distribution

3. Randomization and Blinding Process

A researcher not involved in recruitment or data collection will use blocked randomization with random permuted blocks of two individuals to form the allocation list for the two comparison groups. The allocation sequence will be generated using the online randomization tool Sealed Envelope (v1.19.1) and will be concealed to the researchers enrolling participants. The intervention drinks will be administered in opaque shaker bottles.

5. Statistical Analysis Plan

The outcomes will be analyzed using ANCOVAs adjusted for baseline values and habitual fruit and vegetable intake as long as the assumptions for conducting the analysis are met.