



Altered States and Basic Taste Perception: Evaluating Detection and Recognition Thresholds Under Psychedelics

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Altered states of consciousness, such as those induced by psychedelics, are increasingly studied for their impact on perception, cognition, and sensory integration. However, despite anecdotal reports [1], there is a significant gap in modern scientific literature regarding how these states influence basic taste thresholds, with prior research primarily focusing on visual and auditory enhancements [2, 3]. To address this, we designed a basic taste threshold study building on earlier work [4] and pilot findings.

We aimed to evaluate basic sweet (sucrose) and sour (citric acid) taste thresholds in healthy individuals under the effects of psychedelics in a naturalistic setting, using a paper strips test [5]. We hypothesised that individuals experiencing psychedelic-induced altered states would exhibit heightened taste sensitivity, leading to lower detection and recognition thresholds for sucrose and citric acid.

Participants (n=120), including ones in altered states and sober controls, underwent an adapted taste strips test [5, 6, 7], containing various concentrations of sucrose and citric acid [8]. Data collected for each strip included detection (yes/no), identification (correct/incorrect), and intensity ratings (0-10). Additionally, participants provided self-reported drug use information and completed a sensory questionnaire. Statistical analysis will employ mixed-effects models to estimate group differences in detection and recognition thresholds.

Data collection has been successfully completed, demonstrating the feasibility and suitability of the taste strip method in naturalistic environments. Data analysis is currently in progress. The results have the potential to enhance our understanding of how altered states affect basic sensory processing, with possible broader implications for multisensory integration and flavor

perception research.

Psychedelics, Taste perception, Gustatory thresholds, Psychophysics, Sensory Neuroscience