Topological electrogustometry and chemogustometry surrogate markers of age-related gustatory decline in humans

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Abstract

Objectives: The primary goal was to evaluate the effect of stimulus-duration on Electrogustometry (EGM) Thrasholds, to evaluate any gender-related influences and compare the above results to those after application of Taste-Strips. Design: Electrogustometry (EGM) thresholds of various stimulus duration (0.5, 1.0, 1.5, and 2.0 s) were measured in 212 non-smokers (age range: 10 – 80 years, divided into 8 age groups) without self-reported gustatory impairment. Furthermore, taste strips chemogustometry measurements in 132 participants were performed. Setting: Tertiary referral medical centre. Participants: 212 non-smokers, divided in 8 age-groups participated in the study. Main outcome measures: EGM-Thresholds and taste-strips, duration of stimuli Results: EGM-thresholds increased progressively with age and with increase in stimulus duration from 0.5 sec up to 2 sec. This pattern was consistent at all 6 anatomic areas, irrespective from gender. In contrast, in chemogustometry no differences related either to age or to gender were found. Conclusions: Age-related electrophysiological and functional gustatory decline can be better documented by EGM than using chemogustometry. This superiority of EGM was not influenced by stimulus duration; nonetheless, stimulus duration should be clearly documented in future quantitative EGM-threshold recordings, given that it may significantly influence EGM amplitude threshold measurements.

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