

## **Supplementary 1:**

### **Validation of the Chemosensory Perception Test**

This study was reviewed and approved by the research ethics board of the Université du Québec à Trois-Rivières (CER-20-268-08-01.04). All participants provided a verbal or written informed consent prior to participation.

### **Experiment 1:**

#### Methods

Participants were recruited among previously tested groups. Olfactory testing was performed using the standardized Sniffin' Sticks test (Hummel, Sekinger et al. 1997) at our laboratory from 2016 to 2019. Exclusion criteria was any perceived changes of their sense of smell since previous testing. Participants were distributed into 2 groups based on their Threshold-Discrimination-Identification (TDI) scores. The first group consists of participants with normal olfactory function (normosmia), defined as TDI scores above 30.5 (Rumeau, Nguyen et al. 2016). The second group had subjective olfactory dysfunction and equivalent TDI scores. Participants were administered CPT by means of a telephone interview.

#### Results:

TDI scores in the first group range from 32.5 to 41.5 (N= 19, 9 women and 10 men, age range [60-78]). TDI scores in the second group ranged from 8 to 30.25 (N= 17, 7 women and 10 men, age range [57-77]). CPT scores were positively correlated with the Sniffin' Sticks ( $\rho=0.837$ ,  $P<0.001$ ). A cut-off score of 6 at the CPT had a sensitivity of 0.765 and specificity of 0.895.

### **Experiment 2:**

#### Methods:

Participants were recruited among previously tested groups, participants from this cross-sectional study and in the public via social media. They were administered the University of Pennsylvania Smell Identification Test (UPSIT) (Doty, Shaman et al. 1984) and the Waterless Empirical Taste Test – Self-Administered (Doty, Wylie et al. 2021) (which were sent by mail) and the CPT under direct supervision through videoconferencing. Participants were distributed into 2 groups based on their UPSIT scores with a score equal or less than 33 in males and 34 in females defining hyposmia (Doty, Shaman et al. 1984). Too few participants with gustatory dysfunction have been recruited to this date to analyze the gustatory data.

### Results:

UPSIT scores in the normosmic group ranged from 34 to 28 (n=29 (21 women), age range [22-73]). The hyposmic group had UPSIT scores ranging from 9 to 34 (n= 28 (21 women), age range: [22-72]). CPT scores were significantly correlated with the UPSIT score ( $\rho=0.377$ ,  $P=0.004$ ) in the whole group of participants. We found this correlation to be much stronger in the hyposmic group ( $\rho=0.702$ ,  $P<0.001$ ).

### **Conclusions:**

The CPT allows for distinction between normosmia and olfactory dysfunction with high sensitivity and specificity. CPT scores are significantly correlated to UPSIT and Sniffin' Sticks scores, especially in a group of individuals with olfactory dysfunction.

### **References:**

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