

#299 Michele Wong

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A Novel, Reliable Online Questionnaire and Database for the Study of Smell Disorders

Anosmia is a predominant symptom of infection by the SARS-CoV-2 virus, a consequence that has increased awareness of olfactory dysfunction globally. And yet, current clinical knowledge about smell dysfunction is lacking. We hypothesize that a high-quality, comprehensive database of phenotypic data from patients with smell dysfunction would advance the study of smell loss. In this pilot study, we aimed to examine the feasibility and test-retest reliability of our patient-administered, online, adaptive questionnaire for smell disorders.

We enrolled 52 participants, including healthy subjects and those with smell dysfunction for test and retest visits at the Rockefeller University Hospital. The participants performed the 12-item Brief Smell Identification Test (BSIT) followed by an online questionnaire during the first visit and returned 7 days later (+/-3) to repeat the online questionnaire. Paired t-test was applied to compare the duration and questions answered between two visits. Test-retest reliability was used to measure Cohen's kappa coefficient, the weighted kappa, and the Intraclass Correlation Coefficient. Loess regression was fit over the duration of the visit and the number of questions answered for each participant. Two-sided t-test was used to test if the reliability was different between these groups.

Participants (n = 52 enrolled, n= 1 excluded, n= 47 healthy, n= 20 women, median age 49) spent an average of 35.6 minutes to complete the questionnaire and spent less time on their second visit (time difference = 9.4 minutes, $P < .0001$). High reliability between test and retest visits was observed for all subjects (median Cohen's Kappa = 0.87 and $P < .05$).

Our web-based questionnaire and database will offer physician scientists a tool that facilitates the collection, storage, sharing, and retrieval of clinical phenotypes from a high number of subjects worldwide that will greatly promote the study of smell disorders.

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