

# How auditory and visual working memory tasks affect misophonic response levels

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Misophonia is characterized by an extreme aversion towards auditory triggers, such as chewing, tapping, and other repetitive sounds, making ignoring or directing attention away from the sounds nearly impossible. It is not classified as a psychological disorder, but it is associated with significant, reflexive emotional disturbances. Studies have shown that the anterior insular cortex (AIC), an area involved in detecting irregularities or errors, functions differently in people with misophonia, which translates to difficulty in controlling emotional reactions. The present study examines how misophonic reactions might interact with cognition with particular attention to how cognitive demands may exacerbate the emotional response. I hypothesized that during auditory working memory tasks, the emotional response to trigger sounds would be more intense than during visual versions of the same tasks; further, this relationship would be positively correlated with self-reported misophonia symptoms. It is also possible that auditory working memory performance would decline in the presence of misophonic triggers. Participants completed visual and auditory n-back working memory tasks in a computer lab. Halfway through each task, a confederate at an adjacent station began eliciting a trigger sound and emotional, misophonic reactions were measured through skin conductance (SC). Participants then completed the Misophonia Questionnaire. One-way repeated measures ANCOVA with MQ as the covariate indicated a significant interaction in predicting SC response during the visual task ( $F=4.239$ ,  $p=.017$ ) but not during the auditory. This did not support the hypothesis, but is an interesting finding that could be examined further, if replicated, in future research. No significant correlations between task accuracy and SCR values over time or MQ score were found.