

## EDITORIAL COMMENT

# Relationships of Perceived Taste and Olfactory Dysfunction With Stroke Risk\*



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Chemosensory functions, which are usually known as the taste and olfactory functions, are the major pathways for mammals to sense and respond to chemical compounds in the environment.<sup>1</sup> The chemosensory process involves several signaling mechanisms, which may be associated with the development of some diseases. Olfactory dysfunction can be either conductive, mainly resulting from the physical blockage of odors in reaching the olfactory neuroepithelium, or sensorineural, from interruption of the route from olfactory receptors to the brain cortex, mainly caused by neurodegenerative diseases. Increasing evidence has shown that olfactory and taste dysfunctions predict the risk of neurodegenerative diseases.<sup>2</sup> However, this process is relatively underexamined for the outcome of stroke, which is a major public health challenge globally and the leading cause of death in China.<sup>3</sup>

In this issue of *JACC: Asia*, Zou et al<sup>4</sup> report on their cohort study conducted on 85,656 participants from the Kailuan study to investigate the association of taste and olfactory dysfunction with the risk of stroke in the Chinese population. Perceived olfactory and taste perception information was collected through self-reported questionnaires derived from the National Health Interview Survey in 2014 and 2016. During a mean follow-up of 5.6 years, 2,198 incident stroke cases were documented. The subtypes of

stroke included ischemic and hemorrhagic stroke. The results showed that perceived taste dysfunction was associated with a doubled risk of developing total stroke, with adjustment for potential confounders. However, perceived olfactory dysfunction was not significantly associated with a high risk of total stroke. Similar results of both perceived taste dysfunction and perceived olfactory dysfunction were observed for ischemic stroke. Additionally, the study also performed a mediated analysis to explore the mediating role of chronic disease status and unhealthy lifestyle in the association between chemosensory dysfunctions and incident stroke. Results of mediated analysis showed that the presence of chronic diseases, including hypertension, diabetes, chronic kidney disease, and overweight/obesity, mediated 4% to 5% of the association of perceived taste dysfunction with both total stroke and ischemic stroke.

The results of this study emphasize the importance of perceived chemosensory dysfunction in the development of incident stroke, especially perceived taste dysfunction. The earlier the chemosensory dysfunction is recognized, the greater the impact on incident stroke prevention will be. Raising incident stroke awareness may provide great promise for reducing health disparities and promoting health equity.

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