

## Letter to the Editor

*Authors' Response to "Sinusitis as Potential Risk Factor for Stroke—Relationship to Underlying Periodontitis"*

**Dear Editor,**

The term "systematic" in "systematic review" indicates that the literatures addressing the question of interest are systematically searched for with strict inclusion and exclusion criteria, using comprehensive lists of search terms that are replicable. In the current systematic review and meta-analysis,<sup>1</sup> the question of interest is whether patients with chronic rhinosinusitis (CRS) have a higher risk of stroke. Therefore, the terms used for literature search consisted only terms for CRS and stroke without the terms for periodontitis, which is not the main objective of this study.

The study by Rosenthal et al<sup>2</sup> was identified by our systematic review process and was included into the meta-analysis. We read their manuscript with great interest and noted their hypothesis that the relationship between stroke and CRS could run through periodontitis. However, in the original discussion, we decided not to mention periodontitis as the possible causal pathway as the evidence that supports this hypothesis is originated from studies that relied on radiographic findings (ie, studies of incidental paranasal sinusitis<sup>2,3</sup>) while the other 3 studies that also incorporated clinical data (ie, studies that required physicians to see the patients and make the diagnosis—not just radiographic findings<sup>4-6</sup>) did not investigate this. Nonetheless, this does not mean that we disagree with the hypothesis. In fact, we appreciate their communication and believe that this constructive letter will make the discussion even more comprehensive.

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### References

1. Wattanachayakul P, Rujirachun P, Ungprasert P. Risk of stroke among patients with chronic rhinosinusitis: a systematic review and meta-analysis. *J Stroke Cerebrovasc Dis* 2019. <https://doi.org/10.1016/j.jstrokecerebrovasdis.2019.01.002>. pii: S1052-3057(19)30002-3[Epub ahead of print].
2. Rosenthal PA, Lundy KC, Massoglia DP, et al. Incidental paranasal sinusitis on routine brain magnetic resonance scans: association with atherosclerosis. *Int Forum Allergy Rhinol* 2016;6:1253-1263.
3. Li H, Liu HJ, Zhu QF, et al. Association between ischemic cerebrovascular disease and nasosinusitis evaluated by 3.0T MRI. *J Clin Rehabil Tissue Eng Res* 2007;11:9722-9725.
4. Wu CW, Chao PZ, Hao WR, et al. Risk of stroke among patients with rhinosinusitis: a population-based study in Taiwan. *Am J Rhinol Allergy* 2012;26:278-282.
5. Kang JH, Wu CS, Keller JJ, et al. Chronic rhinosinusitis increased the risk of stroke: a 5-year follow-up study. *Laryngoscope* 2013;123:835-840.
6. Lee WH, Kim JW, Lim JS, et al. Chronic rhinosinusitis increases the risk of hemorrhagic and ischemic stroke: a longitudinal follow-up study using a national sample cohort. *PLoS One* 2018;13:e0193886.

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