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## Response to “Facial nerve palsy following the administration of COVID-19 mRNA vaccines: analysis of a self-reporting database” by Sato et al



To the Editor:

We read with interest the study “Facial nerve palsy following the administration of COVID-19 mRNA vaccines: analysis of a self-reporting database” by Sato et al, which was recently published in the *International Journal of Infectious Diseases* (Sato et al, 2021). The authors found a statistically significant relationship between COVID-19 vaccination with either the BNT162b2 (Pfizer and BioNTech) or mRNA-1273 (Moderna) vaccine and reporting of facial nerve palsy following vaccination, similar to the observed rate following pre-COVID-19 influenza vaccination (Sato et al, 2021). Given the ongoing COVID-19 vaccination effort, understanding potential adverse events following vaccination is undoubtedly important.

Bell's palsy is characterized by paralysis of the seventh cranial nerve. Sato et al define seventh nerve palsy with the following Medical Dictionary for Regulatory Activities preferred terms: “Bell's palsy,” “Bell's phenomenon,” “facial paralysis,” “facial palsy,” “facial asymmetry,” and “VIIth nerve paralysis” (Sato et al, 2021). We wish to highlight that “Bell's phenomenon” is a physiologic upward and outward rotation of the eyeball seen on forceful eyelid closure against resistance in healthy individuals. Although Bell's phenomenon can be readily observed with impaired eyelid closure secondary to Bell's palsy, Bell's phenomenon itself is normal and not the same thing as seventh nerve palsy. Bell's phenomenon may have been misunderstood as another way of describing Bell's palsy among reporters of adverse events, but this should not have been included as a search term unless these reports were screened somehow to assure that they were indeed seventh nerve palsy, which was not specified in the article. The number of facial nerve palsy reports following vaccination may have been overreported as a result.

Given the importance of understanding the potential adverse events following vaccination, we believe that it is appropriate to reevaluate facial nerve palsy reporting following COVID-19 vaccination, either excluding “Bell's phenomenon” as a search term (as done by Zhou et al) (Zhou et al, 2004), or reviewing descriptions of adverse events to ensure that they are consistent with isolated seventh cranial nerve palsy, as has been done in other studies of this issue (Kamath et al, 2020, Lee et al, 2013). We appreciate the authors bringing this topic to attention in the literature.

### Ethical approval

Ethical approval was not required for this work.

### Author contributions

All authors contributed to this work.

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### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

### References

- Kamath A, Maity N, Nayak MA. Facial Paralysis Following Influenza Vaccination: A Disproportionality Analysis Using the Vaccine Adverse Event Reporting System Database. *Clin Drug Investig* 2020;40(9):883–9.
- Lee CD, Carnahan RM, McPheeters ML. A systematic review of validated methods for identifying Bell's palsy using administrative or claims data. *Vaccine* 2013;31(10):K7–11 Suppl.
- Sato K, Mano T, Niimi Y, Toda T, Iwata A, Iwatsubo T. Facial nerve palsy following the administration of COVID-19 mRNA vaccines: analysis of a self-reporting database. *Int J Infect Dis* 2021;111:310–12.
- Zhou W, Pool V, DeStefano F, Iskander JK, Haber P, Chen RT, et al. A potential signal of Bell's palsy after parenteral inactivated influenza vaccines: reports to the Vaccine Adverse Event Reporting System (VAERS)—United States, 1991–2001. *Pharmacoepidemiol Drug Saf* 2004;13(8):505–10.

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