



Monday, January 10, 2022

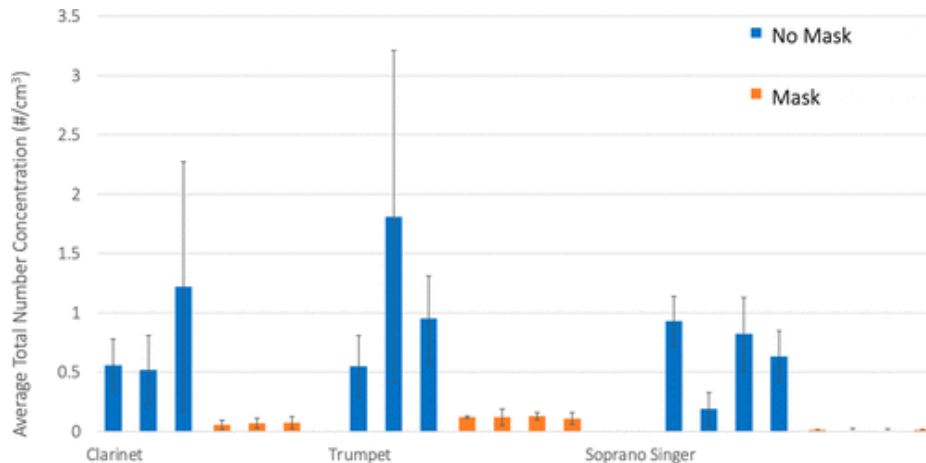
On behalf of Choral Canada, the Canadian Band Association, the Nova Scotia Band Association, the Nova Scotia Choral Federation, the Nova Scotia Music Education Council, the Kodaly Society of Nova Scotia, and the Kodaly Society of Canada, we are sharing current research and information to guide your decision-making process for students' return to in-person learning. This information relates specifically to singing and wind instrument playing and includes research supporting safe singing and instrument playing practices, and articulating the negative impact of banning singing and wind instruments on students and student learning.

**Safe Singing and Playing - Current Research**

Research on aerosol production and dispersion during singing and the playing of wind instruments began promptly at the outset of the COVID-19 pandemic. Much of that research is now peer reviewed and published. This growing body of research establishes that singing/playing with appropriate mitigation poses less or no additional risk than other school activities.

- 1. Conclusive evidence gathered by research teams at the University of Colorado Boulder and the University of Maryland shows that **the application of appropriate mitigations significantly decreases the spread of aerosols while singing or playing wind instruments**<sup>1</sup>.

These results are consistent with other peer reviewed research on aerosols and singing the playing of wind instruments.

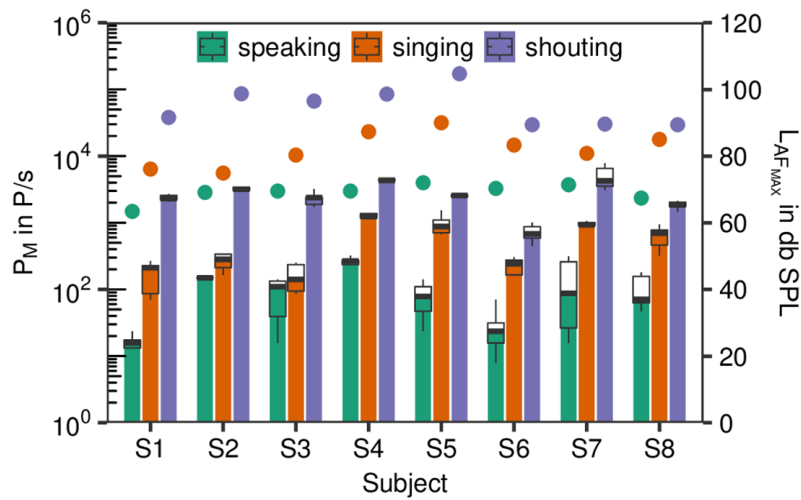


- 2. A 2020 study conducted at the Technische Universität Berlin compared aerosol emission and distribution during speaking and singing for adolescents. Findings show **aerosol particle emission ranges for singing are significantly less than those for shouting** [141 Particles/second (P/s) to 1240 P/s for singing compared to 683 P/s to 4332 P/s for shouting]<sup>2</sup>. Yet, those activities most likely to include shouting (ie; sports), allow students to unmask entirely.

<sup>1</sup> Stockman, T., Zhu, S., Kumar, A., Lingzhe, W, Weaver, J. et al. (2021). *Measurements and Simulations of Aerosol Released while Singing and Playing Wind Instruments*. American Chemical Society. <https://doi.org/10.1021/acsenvironau.1c00007>

<sup>2</sup> Mürbe, D., Kriegel, M., Lange, J., Schumann, L., Hartmann, A., & Fleischer, M. (2021). *Aerosol emission of adolescent voices during speaking, singing and shouting*. Public Library of Science. <https://doi.org/10.1371/journal.pone.0246819>

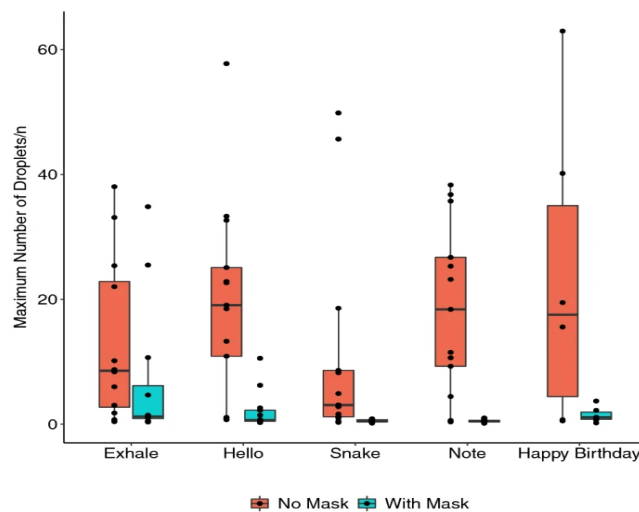
The results of this study also demonstrate that **adolescents emit fewer aerosol particles during singing than what has been known so far for adults**. In the figure shown here, adolescent emission rates (Pm) are shown for S1-S4 (subjects identifying as female) and S5-S8 (subjects identifying as male).



3. The CONFESS study (COvid aNd FacE maSkS) conducted at the University College London Mechanical Engineering Department found that **singing transmits no more droplets than exhaling when a mask is worn**<sup>3</sup>.

In their examination of variation in droplet transmission and the impact of wearing face masks, authors found that masking decreased time averaged droplet number (TADN) by 99% ( $p < 0.001$ ) and maximum droplet number (MDN) by 98% ( $p < 0.001$ ) for singing and 86–97% for other vocal tasks and exhalations.

These results are pictured in the figure shown here, with unmasked vocalization shown in orange and masked vocalizations and exhalations shown in blue. Again, these results are consistent with all aforementioned studies.



<sup>3</sup> Ho, K.M.A., Davies, H., Epstein, R. et al. (2021). *Spatiotemporal droplet dispersion measurements demonstrate face masks reduce risks from singing*. Scientific Reports. <https://doi.org/10.1038/s41598-021-03519-x>

### *Effective Mitigation & Risk Management*

In response to this body of research and a continued understanding of the role of aerosols in the spread of COVID-19, the music community has successfully implemented appropriate policies since early in the COVID-19 pandemic. For example, while recommendations for triple layer and/or N95 masks are only now widely recommended in the community, our organizations have recommended these measures for choirs and ensembles for more than a year. This informed approach has proven effective as school choirs and ensembles have returned to music making with no reported spread of COVID-19 linked to music education in Canada. Meanwhile, despite the reported spread of COVID-19 during sport, school sports activities have continued with minimal restrictions.

### *Negative Student Impact*

Nova Scotia has repeatedly expressed a commitment to in-person learning due to student health and wellbeing. The academic and social-emotional benefits of music education are plentiful and well-documented<sup>4</sup>. Results of the *Singing in Canadian Schools COVID-19 Impact Survey* point to the negative impact of previous singing bans on Nova Scotia students who were not only unable to receive instruction of key curriculum outcomes, but were left without a safe space and outlet for self expression in school<sup>5</sup>.

Continued bans will only further negatively impact Nova Scotia students. Of particular concern is the impact on marginalized youth and diverse student groups, including Indigenous—First Nations, Metis, Inuit, racialized, and/or LGBTQIA2S+ students who are at increased risk of mental health impacts due to COVID-19. For these students and many others, the music classroom is their “safe space” where they can learn, grow, and make music without judgment or scrutiny. *Singing in Canadian Schools: COVID-19 Impact Survey* results show that these marginalized groups have experienced reduced access to choir and group singing programs due to previous singing bans.

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***As in-person learning returns, we ask for equitable policies for all students. Student wellbeing and mental health are not supported by in-person learning and sports alone. Research shows that singing and wind playing can be done safely with the implementation of appropriate mitigation. We appreciate Public Health’s position that our community is reflected in our schools. It is now critical that policy reflects the vital role of music making not only in our communities, but in our schools.***

Sincerely,



Hope Gendron  
Nova Scotia Band Association, Executive Director



Tim Callahan-Cross  
Nova Scotia Choral Federation, Executive Director

On behalf of the following national and provincial organizations:

**Choral Canada**  
**Canadian Band Association**  
**Nova Scotia Band Association**  
**Nova Scotia Choral Federation**  
**Nova Scotia Music Education Council**  
**Kodaly Society of Nova Scotia**  
**Kodaly Society of Canada**

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<sup>4</sup> [NAMM Foundation](#); [IJME](#); [Frontiers in Psychology](#); [Health Psychology Review](#)

<sup>5</sup> Choral Canada. *Singing in Canadian Schools COVID-19 Impact Survey Recommendations*.  
[https://www.choralcanada.org/uploads/3/8/9/2/38921071/national\\_letter\\_2\\_to\\_ministers\\_re\\_covid19\\_survey\\_and\\_choirs\\_-\\_august\\_2021.pdf](https://www.choralcanada.org/uploads/3/8/9/2/38921071/national_letter_2_to_ministers_re_covid19_survey_and_choirs_-_august_2021.pdf)