

ENVIRONMENT	At Risk	Safer	Notes	References
<b>Air changes per hour (ACH)</b>	<3	6 or more	More air changes per hour removes aerosols from the teaching/rehearsal space, reducing exposure time not only to potential COVID infections, but also cold and flu viruses	<a href="https://doi.org/10.1001/jama.2021.5053">doi:10.1001/jama.2021.5053</a>
<b>Ability to open windows in teaching space</b>	None	Yes	The ability to bring outside air directly into the teaching space is a key means to reduce the number of possibly infectious aerosol particles in the room	<a href="https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html">https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html</a> ; <a href="https://osf.io/7rczy">https://osf.io/7rczy</a>
<b>HEPA filtration</b>	None	Yes (with a room-size appropriate unit - sufficient CADR for volume of the room)	HEPA filtration can be a cost effective means to increase the number of equivalent air changes per hour in a teaching space that does not have windows	JAMA and CDC references above; see also <a href="https://www.ashrae.org/file%20library/technical%20resources/covid-19/in-room-air-cleaner-guidance-for-reducing-covid-19-in-air-in-your-space-or-room.pdf">https://www.ashrae.org/file%20library/technical%20resources/covid-19/in-room-air-cleaner-guidance-for-reducing-covid-19-in-air-in-your-space-or-room.pdf</a> ; <a href="https://pubmed.ncbi.nlm.nih.gov/33940414/">https://pubmed.ncbi.nlm.nih.gov/33940414/</a> <a href="https://pubmed.ncbi.nlm.nih.gov/32662746/">https://pubmed.ncbi.nlm.nih.gov/32662746/</a> <a href="https://pubmed.ncbi.nlm.nih.gov/32660218/">https://pubmed.ncbi.nlm.nih.gov/32660218/</a> <a href="https://www.epa.gov/coronavirus/air-cleaners-hvac-filters-and-coronavirus-covid-19">https://www.epa.gov/coronavirus/air-cleaners-hvac-filters-and-coronavirus-covid-19</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7711180/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7711180/</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8084223/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8084223/</a>
<b>Room size</b>	100 square feet or less (10' x 10')	200 square feet or more (14' x 14')	The ability to distance oneself from another person who is singing depends upon room size. Distancing can reduce exposure risks from directly expelled particles (larger droplets) containing COVID, cold, and flu viruses	See a calculator tool at: <a href="https://indoor-covid-safety.herokuapp.com/">https://indoor-covid-safety.herokuapp.com/</a> ; additional calculator available at <a href="https://www.mpic.de/4747361/risk-calculator?en">https://www.mpic.de/4747361/risk-calculator?en</a> ; <a href="https://www.jvoice.org/article/S0892-1997(20)30245-9/fulltext">https://www.jvoice.org/article/S0892-1997(20)30245-9/fulltext</a>

<b>CO2 meter for real-time monitoring ventilation</b>	None	CO2 meter in singing/rehearsal studio	CO2 meters provide a useful real-time analog to the number of local ACH. They do not provide any information about viral load, but they are a useful measure of the ventilation system's removal of expired air	<a href="https://www.medrxiv.org/content/10.1101/2020.10.26.20218354v1.full">https://www.medrxiv.org/content/10.1101/2020.10.26.20218354v1.full</a> ); <a href="https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html">https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html</a> ; <a href="https://pubmed.ncbi.nlm.nih.gov/32028176/">https://pubmed.ncbi.nlm.nih.gov/32028176/</a> ; <a href="https://www.health.state.mn.us/communities/environment/air/toxins/co2.html">https://www.health.state.mn.us/communities/environment/air/toxins/co2.html</a> ; <a href="https://www.epa.gov/sites/production/files/2014-08/documents/indoorair20-247.pdf">https://www.epa.gov/sites/production/files/2014-08/documents/indoorair20-247.pdf</a> ; <a href="https://pubs.acs.org/doi/10.1021/acs.estlett.1c00183">https://pubs.acs.org/doi/10.1021/acs.estlett.1c00183</a> ; <a href="https://www.dhs.wisconsin.gov/chemical/carbondioxide.htm">https://www.dhs.wisconsin.gov/chemical/carbondioxide.htm</a> ;
<b>BEHAVIORAL STEPS</b>	<b>At Risk</b>	<b>Safer</b>	<b>Notes</b>	<b>References</b>
<b>Vaccination</b>	Teacher, student, and accompanist are not vaccinated	Teacher, accompanists, and students are all fully vaccinated	All three FDA-authorized vaccines are readily available in the US. Vaccination is safe, effective, and free. Annual flu and pneumonia vaccines are also recommended	<a href="https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/pfizer-biontech-covid-19-vaccine">https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/pfizer-biontech-covid-19-vaccine</a> ; <a href="https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/moderna-covid-19-vaccine">https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/moderna-covid-19-vaccine</a> ; <a href="https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/janssen-covid-19-vaccine">https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/janssen-covid-19-vaccine</a>
<b>Entrance screening</b>	No symptom check for all individuals in the teaching/rehearsal space	Teachers, accompanists, and students all self-screen for COVID-19 symptoms before gathering	Screening apps include: <a href="https://covid19.apple.com/screening/">https://covid19.apple.com/screening/</a> ; <a href="https://www.cdc.gov/screening/index.html">https://www.cdc.gov/screening/index.html</a> ; <a href="https://www.webmd.com/coronavirus/coronavirus-assessment/default.htm">https://www.webmd.com/coronavirus/coronavirus-assessment/default.htm</a> ;	<a href="https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/Employervisitorscreeningguidance.pdf">https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/Employervisitorscreeningguidance.pdf</a> ; <a href="https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html#anchor_1609683211941">https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html#anchor_1609683211941</a>
<b>Mask usage</b>	None	Yes for all unvaccinated persons	CDC recommendations include masking for all unvaccinated persons when gathering indoors. Vaccinated persons with reduced immune function may be encouraged to continue masking by their physicians. Masks can also reduce the risk of cold and flu virus transmission.	<a href="https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/participate-in-activities.html">https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/participate-in-activities.html</a>

<b>Distancing</b>	Guidelines not being followed	6 or more feet for unvaccinated persons	CDC distancing recommendations for vaccinated persons have been removed as of May 16, 2021; for unvaccinated persons, 6 feet or more is still recommended. Distancing can also help reduce the risk of cold and flu transmission	<a href="https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/participate-in-activities.html">https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/participate-in-activities.html</a>
<b>Lesson length</b>	greater than 30 minutes	30 minutes maximum with unvaccinated persons	Recommendation based on research at the University of Colorado and the University of Maryland	<a href="https://scholar.colorado.edu/concern/file_sets/9s161736t">https://scholar.colorado.edu/concern/file_sets/9s161736t</a>
<b>Air change time between lessons</b>	None	At least one air change	Increase if an unvaccinated person sings unmasked or if infection rates in community are rising	doi:10.1001/jama.2021.5053
<b>Aerosol producing activities (lip trills, raspberries, straw in water, vigorous fricatives, etc)</b>	Yes, especially if unmasked or unvaccinated	Not used in lessons, but can be encouraged for solo practice in well-ventilated spaces	Some SOVTs produce large amounts of droplets; masks may prevent the spread of droplets. Vaccination reduces the chance of the singer shedding viral particles. Cold and flu viruses may also be spread through lip trill and raspberry use in group settings	pending report from Colorado State University Bioaerosol Emission study – See <a href="https://smt.d.colostate.edu/reducing-bioaerosol-emissions-and-exposures-in-the-performing-arts/">https://smt.d.colostate.edu/reducing-bioaerosol-emissions-and-exposures-in-the-performing-arts/</a>
<b>Cleaning common surfaces between lessons</b>	None	Yes, using alcohol or other anti-viral and anti-bacterial cleansers	Reduces the risk of exposure through fomites on hands	<a href="https://www.who.int/westernpacific/emergencies/covid-19/information/transmission-protective-measures">https://www.who.int/westernpacific/emergencies/covid-19/information/transmission-protective-measures</a> ; <a href="https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public">https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public</a> ;
<b>Teacher and students cleaning hands before lessons</b>	None	Yes, using hot soapy water or alcohol-based cleansers	Reduces the risk of exposure through touching common surfaces and then touching the nose, eyes, and mouth	<a href="https://www.who.int/westernpacific/emergencies/covid-19/information/transmission-protective-measures">https://www.who.int/westernpacific/emergencies/covid-19/information/transmission-protective-measures</a> ; <a href="https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public">https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public</a> ;

<b>Age of students taught</b>	Unvaccinated adults and children ineligible for vaccination	Vaccinated adolescents and adults	Adults produce more aerosols, but are more likely to be vaccinated; adolescents and children (especially under age 12) are less likely to be vaccinated	<a href="https://journals.plos.org/plosone/article/authors?id=10.1371/journal.pone.0246819">https://journals.plos.org/plosone/article/authors?id=10.1371/journal.pone.0246819</a>
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