

UPDATED

# ISM Global Literature Review: Music Performance, Education and COVID-19

*Updated 21 August 2020*

# Contents

The literature review was commissioned by the Incorporated Society of Musicians (ISM). The first edition was completed on 11 July 2020. We received a great deal of positive feedback from the first edition so we thought it would be worthwhile to update it and the updated edition was completed on 21 August 2020.

# Introduction

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**The ISM commissioned a global literature review of the current research and information relating to COVID-19, transmission and risk management in both the performance and music education space.**

The purpose of this document is not to give guidance but rather to bring together the wide amount of available information and share it with the rest of the music community. The initial research commenced on 19 June 2020 and was completed on 11 July 2020. **Following much positive feedback, we decided it would be worthwhile to update the Global Literature Review to cover developments to 21st August 2020. There has been a huge amount of work undertaken globally since 11 July and throughout this edition the new content including references, endnotes etc are shown in red. It is our intention to keep the Global Literature Review updated so please watch out for the third edition.**

The literature review was written by Kathryn Williams and Dr Jodie Underhill.

The literature review explores COVID-19, transmission and risk management in both the performance and music education space. The first section focuses on COVID-19 issues in relation to performance and covers aerosol transmissions, instrument hygiene as well as issues relating to choirs and ensembles. The second section looks at the music education space and transmission with reference to children and young people and the mitigation measures for music education that countries have taken across the globe.

# Music Performance and COVID-19

Prepared by Kathryn Williams on behalf of the ISM between 19 June – 11 July 2020  
Updated 21 August 2020

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**This updated Global Literature Review includes recently published information regarding COVID-19 transmission in various enclosed settings, potentially pertinent to music performance and rehearsal, and preliminary findings from studies with musicians to test aerosol distribution. It is important to note that there are scientific studies currently taking place and therefore updates will be required as new knowledge is disseminated.**

It is not intended to provide guidance but rather to inform the music community of the information available. Further research into the safety of instrumental playing and singing is necessary for the safe resumption of music performance and for the livelihoods of many thousands of musicians and those working in the live music performance industry, for amateur music making (which is such an important part of the nation's social and spiritual wellbeing), and for the concert-going public.

## COVID-19 transmission

It is clear that COVID-19 is highly transmissible, and virologists and epidemiologists are exploring all avenues to understand why.<sup>1</sup> There is broad agreement in the infectious disease community about possible modes of respiratory virus

transmission between humans.<sup>2</sup> Similar to what is known about influenza A and B, MERS-CoV, and SARS-CoV-1, virus-containing aerosols and droplets can lead to short-range airborne transmission.<sup>3</sup> Widely recognised transmission pathways of COVID-19 are via larger respiratory droplets (produced through sneezing and coughing; most droplets fall to the ground rapidly) and direct contact with infected people or contaminated surfaces.<sup>4</sup> A third route of infection, inhaling small airborne droplets, has strong scientific evidence, although the World Health Organisation and other public health bodies have not yet formally accepted this.<sup>5</sup> Professor Lidia Morawska of Queensland University of Technology has authored an open letter to the WHO published on 6 July 2020, signed by 239 researchers from 32 countries, accusing the WHO of failing to issue appropriate warnings about the risk.<sup>6</sup>

Small respirable particles, invisible without specialist equipment, are produced through breathing and speaking, and can remain airborne for up to several hours in a poorly ventilated space.<sup>7</sup> The evidence regarding aerosol transmission suggests that every individual emits potentially infectious aerosols all the time, not just when sneezing or coughing.<sup>8</sup> However, infections are especially likely to occur in people who spend a long time in closed rooms.<sup>9</sup> Room ventilation is an important way to help minimise the risk of transmission. Studies have shown that better ventilation of spaces substantially reduces the airborne time of respiratory droplets and aerosols.<sup>10</sup> Aerosols are sufficiently large to carry viruses and they are in the correct size range to be inhaled deep into the respiratory tract of a susceptible individual.<sup>11</sup> This is one of the reasons for the concern of asymptomatic carriers who unknowingly spread infection by aerosol transmission.<sup>12</sup>

**In regards to playing wind and brass instruments and singing, studies have shown that despite the minimal amount of air**

movement in the vicinity of the instrument and mouth, aerosols are emitted.<sup>13</sup> PERFORM, an aerosol study set up by ENT surgeon and singer Declan Costello and aerosol specialist Jonathan Reid of Bristol University (with other contributors) tested 25 professional singers and 15 wind and brass players to measure the number and size of aerosols and droplets generated by singing and playing compared to those produced by speaking and coughing. The results of the singing tests are now available as a pre-print (not yet peer-reviewed) report.<sup>14</sup> The findings indicate that singing does not produce significantly different aerosol mass than speaking and the number concentration of both types of vocalisation rises in parallel, suggesting that singing and speaking could be considered to be treated equally. It also emphasises the importance of providing sufficient ventilation, reducing vocal volume, rehearsal and performance duration, and number of participants as some of the key considerations in resuming group singing activities. Another aerosol study, testing musicians from the Minnesota Orchestra, categorised wind instruments into risk levels based upon aerosol concentration: low (tuba), intermediate (piccolo, flute, clarinet, bass clarinet, bassoon, French horn), and high (oboe, trumpet, bass trombone).<sup>15</sup> Other research studies on the aerosol production on different instruments and singers are currently being undertaken at the University of Colorado-Boulder and University of Maryland.<sup>16</sup> This information will help to answer questions about the safe resumption of work for musicians and those working in the music industry.

## Current guidance for musicians and ensembles

The updated government guidance on performing arts for England (published 13 August 2020) recommends that rehearsals and performances are held outside when possible, and physical distancing of 2 m (or 1m with 'robust' mitigations) between players. This is in line with initial findings from the aerosol studies conducted through Universities of Colorado-Boulder and Maryland, which go further to suggest that outdoor rehearsals are preferred and a five-minute break per 30 minutes should be observed to clear aerosols, and indoor rehearsals are advised to be limited to 30 minutes. An aerosol study using musicians from the Minnesota Orchestra categorised wind instruments into risk levels based upon aerosol concentration: low (tuba), intermediate (piccolo, flute, clarinet, bass clarinet, bassoon, French horn), and high (oboe, trumpet, bass trombone) (He et al, 2020). Examples of the mitigation measures being taken for individual practice

rooms, ensemble rehearsals, and performances are published online by the University of Iowa (2020).

Brass Band England advises maintaining three metres distance between players (using screens to separate rows when this distance is not possible), increasing room ventilation, limiting ensemble size to six players or two households, emptying water keys into a cloth only handled and disposed of by the individual, and maintaining instrument hygiene.<sup>17</sup> There is guidance provided for recording sessions available from the Musicians' Union<sup>18</sup> and examples of this being put into practice at Abbey Road Studios. These guidelines include all personnel taking a health survey 24 hours before the session, staggered entry times, wearing face coverings outside of the rehearsal space, remaining in assigned seats for eating and drinking, and avoiding taking public transport to the venue.<sup>19</sup>

A policy brief written by medical professionals and board members of Berlin orchestras advise on physical distancing informed by instrument-specific air flow (strings, percussion, harp, keyboard 1.5m; wind players 2m; conductor 2m for rehearsal and 1.5m for performance).<sup>20</sup> In normal orchestral seating, musicians do not sit facing each other, which already reduces some risk. Musicians should only speak to each other when necessary in a rehearsal situation and Plexiglas shields should be placed in front of the wind players to avoid potential aerosol distribution. Face coverings should be worn during breaks and physical distancing of at least 1.5m should be constantly maintained.<sup>21</sup> Orchestra assistants should wear gloves when handling common-touch materials such as sheet music, chairs, and music stands.<sup>22</sup> Studies have shown that COVID-19 particles can remain viable on surfaces such as plastic (72 hours), stainless steel (48 hours), and cardboard (24 hours).<sup>23</sup> Risk mitigation advice for singing and choral activity from Freiburg includes observing distancing of 2m, taking ventilation breaks every 15 minutes, wearing face masks (since it can be assumed that there is no greater risk of being infected by singing than by speaking), and ensuring good hand hygiene.<sup>24</sup>

In the well-publicised cases of so-called super-spreading events in choirs, scientists have simulated the various rehearsal conditions and found that the suspected aerosol transmission was not only from the act of singing: poor room ventilation, close proximity, short breaks, and socialising all contributed to these events.<sup>25</sup> Although studies have shown that air is only set in motion in the immediate vicinity of the mouth when singing and that fewer *droplets* were expelled during singing than during talking<sup>26</sup>, not enough is known yet about *aerosol* accumulation and distribution during singing.<sup>27</sup>

## The current situation

Stage four of the five-stage roadmap for the return of performing arts came into effect on 15 August (after this was delayed by two weeks at short notice amid concerns over a rise in virus cases). Numerous pilot performances with socially-distanced audiences in theatres and music venues have taken place (including *Tête à Tête*<sup>28</sup> and *The Grand* in Clapham<sup>29</sup>). While the pilot performances have been encouraging, venues are concerned about the sustainability of running at reduced capacity, making socially-distanced concerts essentially unviable without subsidy.<sup>30</sup>

The updated performing arts guidance (published 13 August)<sup>31</sup> applies to England and allows the return to indoor performances with socially-distanced audiences. The relaxation of professional-only singing, wind, and brass to include non-professionals is attributed to findings from DCMS-commissioned scientific studies (this evidence is not linked within the guidance itself).

Although the updated guidance states that choirs may resume as part of religious worship, it is not clear how many choir members should be permitted to sing together. The wording is rather vague as to whether non-professional performing activities are restricted to the current general social interaction guidance (up to six people or two households), community gatherings of up to 30 people, or even larger groups which are allowed by venues and organisations with COVID-19 Secure guidelines in place. Nevertheless, social distancing should be maintained no matter the situation.

Organisations of five or more members (*professional and amateur*) must complete a risk assessment, in line with workplaces in other sectors, which comply with COVID-19 Secure reopening measures, detailing how mitigations are being managed. For the performing arts, this includes ensuring social distancing measures for performers and audiences, providing additional hand wash facilities, and where necessary placing plastic barriers between workers).<sup>32</sup>

## Examples of current activities

There are now many more examples of venues adapting to the new guidance for live performance with audiences. Sam Fender opened a series of gigs at Unity Arena in Newcastle, where 500 viewing platforms allowed for up to 2,500 attendees.<sup>33</sup> The BBC Proms has announced a two-week line-up of soloists and orchestras (for livestreaming only).<sup>34</sup> Snape Maltings plan to host a series of weekend concerts with each performance repeated twice. There are increasing examples of outdoor music performances, including London Mozart Players, Hampstead Garden Opera, Music at the Tower, and Bandstand Chamber Festival at Wandsworth Park. All of the above have clearly shared on the event booking pages the measures in place to mitigate risks, including paperless tickets and keeping performances under one hour to alleviate the need for an interval. English National Opera Drive & Live is planned to run from 19–27 September with a 90-minute version of *La bohème*, where two separate casts will bubble together for the rehearsal and performance period, and audiences can watch from their own cars or bicycles. Other ensembles in the UK, including reduced size London Philharmonic Orchestra, Opera Holland Park, and Orchestra of the Royal Opera House have reconvened to rehearse and record for streaming, and Laura Marling performed live in June in a deserted Union Chapel with a handful of sound crew and some camera people. Wigmore Hall will host a series of 100 concerts September–December, initially running at 10% venue capacity.<sup>35</sup>

Orchestras and opera companies in other countries have resumed or are soon to resume live performance to audiences. Teatro Real Madrid successfully completed a run of 27 performances of *La Traviata* with mitigation measures in place for the cast such as staggered arrival times, building social distancing into the stage direction, the chorus wearing masks during the performance; for the orchestra, players sitting 1.5 metres apart with plastic screens in front of woodwinds and the conductor; for the audience masks are mandatory and intervals lengthened to avoid long queues and crowding.<sup>36</sup> Smaller groups such as Ensemble Recherche in Germany are repeating performances twice per evening to audiences limited to half the venue capacity or fewer.<sup>37</sup> Salzburg Festival has gone ahead for its month-long festival, with mitigation measures including regular testing of performers, bubbling cast members as appropriate, and running venues at 50% capacity.

# The way forward

Further clarity is needed on the transmission pathways of COVID-19. The existing research suggest a range of behaviours that will minimise this risk. There are also numerous considerations beyond the remit of this document: for example, the government's recent announcement of financial support to the arts is very welcome.<sup>38</sup>

It is the case though that for many venues socially distanced concerts and gigs simply do not work financially. Musicians will continue to struggle to find enough work to meet their very basic financial needs. Accordingly, while the sector is still prevented from working by the Government in a non-socially distanced manner, there is a desperate need for the Government to extend the self-employed support scheme for the performing arts sector to March 2021.

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# Music Performance and COVID-19

## Literature review (8 June – 11 July 2020)

Prepared by Kathryn Williams on behalf of the ISM

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### The focus in this section is on the research concerning the transmission of COVID-19 through the lens of musical performance, particularly for woodwind and brass players, and singers.

It is important to note that there are scientific studies currently taking place and therefore updates will be required as new knowledge is disseminated.

It is clear that COVID-19 is highly transmissible, and virologists and epidemiologists are racing to understand why (Asadi et al, 2020, p. 635), although there is broad agreement in the infectious disease community about possible modes of respiratory virus transmission between humans (Tellier et al. 2019). Similar to what is known about influenza A and B, MERS-CoV, and SARS-CoV-1, virus-containing aerosols and droplets can lead to short-range airborne transmission (Pollitt et al, 2020). Current scientific evidence suggests that the transmission of COVID-19 is through inhalation or surface contact transmission:

- **Droplets:** Larger than 5 µm (microns) emitted through coughing and sneezing; droplets do not travel far before dropping to the ground, usually within 1 second (Somsen et al, 2020).
- **Aerosol:** Small respirable particles <5 µm produced through breathing and speaking; can remain airborne for up to several hours in a poorly ventilated space (Scheuch 2020, p. 4).

- **Contact transmission:** Touching common surface materials and subsequent hand-to-mouth/nose/eye transfer (Pollitt et al). COVID-19 particles can persist in an infectious state for up to several days (van Doremalen et al. 2020).

According to Pollitt et al, because the short history of the COVID-19 pandemic has been marred by large amounts of misinformation, it becomes critically important to provide a definitive answer to the question as to whether or not the disease is transmitted by aerosol (p. 5). The evidence regarding aerosol transmission suggests that every individual emits potentially infectious aerosols all the time, not just when sneezing or coughing (Asadi et al 2020, p. 637). However, infections are especially likely to occur in people who spend a long time in closed rooms (Spahn et al 2020, p. 13).

The necessity for musicians to return to work as soon as safely possible is a given. Lack of professional activities and unemployment can result in increased mental disorders, respiratory distress syndromes and also chronic physical illnesses in the long term (Willich et al, 2020). Reports from Freiburg (Spahn et al) and Berlin (Willich et al) offer guidance for returning to orchestral playing including distancing the string players 1.5 metres; woodwind and brass two metre; shortening rehearsals; airing out the room regularly.

Recent studies showed that air is only set in motion in the immediate vicinity of the mouth when singing (Kähler & Hain 2020, p. 2), and that fewer droplets were expelled during singing than during talking (Loudon & Roberts 1968). However, not enough is known yet about aerosol accumulation and distribution during singing (Scheuch, p. 3). So called superspreading events in choirs must take into account other

factors such as poor room ventilation, duration, volume of vocalisation, and general behaviours (chatting in the break, hugging, close proximity) (Miller et al 2020, p. 12).

Lockdown measures in the UK were introduced on 23 March 2020. At time of writing, socially distanced rehearsals, workshops, and performances for recording and livestream purposes are allowed (UK Gov. 2020). Performances for broadcast have already been implemented at The Wigmore Hall and BBC Radio studios. A number of orchestras in other countries have resumed or plan to resume performances.

# Music Performance and COVID-19

## Literature review (11 July–21 August 2020)

Prepared by Kathryn Williams on behalf of the ISM

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### **Recently published and pre-print studies on the importance of indoor ventilation to reduce the risk of COVID-19 spread continues to strengthen the evidence of aerosols as a transmission route (Lednicky et al, 2020).**

Shao et al (2020) write that the location of ventilation sources from potential emitters is a vital consideration when planning the resumption of various activities. 'Hot spots' can be created depending on the distance from the ventilation source to the emitter, and when potentially infectious particles travel further to reach the ventilation source, the risk of inhalation and surface contamination can increase. There is a growing body of research which reinforces the role of aerosols in the rapid global spread of COVID-19, yet the World Health Organisation has not formally recognised this as a transmission route (Mandavilli, 2020).

Studies on aerosol emissions via speaking and coughing demonstrate that physical distancing is unlikely to be enough to reduce the potential of viral transmission in the absence of ventilation (de Oliveita et al, 2020). The recent outbreak in a residential camp in Georgia (USA) where 76% of 344 tested positive for COVID-19 is thought to have been partially due to inadequate ventilation (Szablewski et al, 2020). Another 'super-spreader' choir rehearsal in France which took place indoors in a poorly ventilated room saw over half of the attendees test positive (Charlotte, 2020). A report from Berlin on the aerosol distribution in singing showed a greater concentration in singing than in speaking, and this increased with vocal loudness (Murbe et al, 2020). Results of the singing portion of the PERFORM study (Gregson et al, 2020) indicate that aerosol concentration numbers from speaking and singing rise in parallel with increasing volume. It suggests that key considerations for resuming group singing are volume levels (in both singing and speaking), number of participants, duration of activity, and ensuring sufficient ventilation.

The updated government guidance on performing arts for England (published 13 August 2020) recommends that rehearsals and performances are held outside when possible, and physical distancing of 2 m (or 1m with 'robust' mitigations) between players. This is in line with initial findings from the aerosol studies conducted through Universities of Colorado-Boulder and Maryland, which go further to suggest that outdoor rehearsals are preferred and a five-minute break per 30 minutes should be observed to clear aerosols, and indoor rehearsals are advised to be limited to 30 minutes. An aerosol study using musicians from the Minnesota Orchestra categorised wind instruments into risk levels based upon aerosol concentration: low (tuba), intermediate (piccolo, flute, clarinet, bass clarinet, bassoon, French horn), and high (oboe, trumpet, bass trombone) (He et al, 2020). Examples of the mitigation measures being taken for individual practice rooms, ensemble rehearsals, and performances are published online by the University of Iowa (2020).

## Aerosol transmission (pre-COVID-19)

**Asadi, S., et al. (February 2019). Aerosol emission and superemission during human speech increase with voice loudness. Scientific Reports 9: 2348 (published online). doi.org/10.1038/s41598-019-38808-z**

This paper is often cited in the current literature coming out around Covid-19 concerning the future of safe singing. The study involved detecting aerosols emitted during speaking, breathing at various rates and most crucially, different volumes. It concluded that speaking is potentially more concerning than breathing in terms of virus transmission, and this concern rises with speech volume. It also highlights the instance of so-called vocal superspreaders, who are disproportionately responsible for the outbreaks of airborne infectious disease.

**Lai K-M, Bottomley C, McNerney R. (2011). Propagation of Respiratory Aerosols by the Vuvuzela. PLoS ONE 6(5): e20086. doi.org/10.1371/journal.pone.0020086**

This scientific report measured airborne particles exiting the vuvuzela (the plastic blowing horns made popular in the 2010 FIFA World Cup in South Africa). Although not a standard instrument used in band or orchestra settings, certain similarities

to brass instruments could be considered including the vibration of lips held against a mouthpiece and the forceful and sustained blowing required to play it. Results showed that mainly aerosols are emitted through the instrument. These findings suggest that the large number of aerosols emitted by the vuvuzela raises the possibility that, if used by persons with an infection of the respiratory tract, they could act a conduit for the spread of infectious particles, because larger droplets remain in the upper airways but smaller particles are more likely to transmit infections of the lower respiratory tract.

**Tellier, R., et al. (2019). Recognition of aerosol transmission of infectious agents: A commentary. BMC Infectious Diseases; 19 (1):101. https://doi.org/10.1186/s12879-019-3707-y**

This paper details the considerations taken into account regarding airborne aerosol transmissions of chickenpox, measles, tuberculosis, smallpox, emerging coronaviruses SARS and MERS, influenza, and ebola. Similarities in most transmission pathways was the role of ventilation (e.g. poor ventilation seems to increase the spread).

**Warnes, S., et al. (November 2015). Human Coronavirus 229E Remains Infectious on Common Touch Surface Materials. American Society for Microbiology, 6:6 mbio.asm.org/content/6/6/e01697-15**

**NB: 229E refers to another strain of Coronavirus.** Symptoms of respiratory disease often result in continuous recontamination of surfaces which are then touched, and infectious particles may be transferred to the face. Given that the average person touches their face up to 15 times per hour, there are ample opportunities for infections to spread. This study explored the viability of coronavirus on metal surface materials. While coronavirus persisted in an infectious state on common surface materials for several days, copper nickels were effective at inactivating it but required higher (90%) copper content to produce a degree of inactivation.

# COVID-19 transmission

**Asadi, et al. (3 April 2020). The coronavirus pandemic and aerosols: Does COVID-19 transmit via expiratory particles? *Aerosol Science and Technology*; 54:6, 635-638.**

This editorial poses the hypothesis that face-to-face conversation with an asymptomatic infected individual, even if both take care not to touch, might be adequate to transmit COVID-19. With emphasis on the word "might", the authors call upon aerosol scientists and virologists to provide the technology and data to either corroborate or reject this hypothesis.

**Morawska, L., Cao, J. (June 2020). Airborne transmission of SARS-CoV-2: The world should face the reality. *Environmental International*; 139 (105730). <https://www.sciencedirect.com/science/article/pii/S016041202031254X>**

This editorial posits that, given airborne transmission was the main transmission route of SARS-CoV-1 in the indoor cases studied, SARS-CoV-2 is highly likely to also spread by air. However, the World Health Organisation and national public health bodies do not formally accept airborne transmission despite the evidence and strong hypotheses. The authors plead for international and national authorities to acknowledge that the virus spreads through air, and recommend that adequate control measures be implemented (including maximising natural ventilation in buildings, avoiding recirculating air, avoiding staying in another person's direct air flow, and increasing ventilation rate).

**Morawska, et al. (September 2020). How can airborne transmission of COVID-19 indoors be minimised? *Environmental International*; 142 (105832). <https://doi.org/10.1016/j.envint.2020.105832>**

Despite the World Health Organisation and national public health bodies not formally accepting the inhalation of small airborne droplets as a probable route of infection, the authors argue that the existing evidence is strong enough to warrant engineering controls targeting airborne transmission to limit infection risk indoors. The central principle for this is to replace contaminated air with clean air (most hospitals already have these systems in place; it is public building which need to be addressed most urgently). Where this is not possible, air recirculation must be avoided to prevent the dissemination of virus-laden particles

throughout the indoor environment. Instead, portable air cleaners with regular filter replacements or simply allowing outdoor air in will help, as will avoiding over-crowding in rooms (e.g. customers sitting at every other table or seat).

**Pollitt, K., et al. (12 May 2020). COVID-19 vulnerability: the potential impact of genetic susceptibility and airborne transmission. *Human Genomics*; 14, 17. [doi.org/10.1186/s40246-020-00267-3](https://doi.org/10.1186/s40246-020-00267-3)**

This paper collects and reviews current and past studies to explore possible genetic determinants of COVID-19 and the contribution of aerosol exposure as a potentially important transmission route. In particular to singing, concentration of aerosol released by the combination of speaking and breathing for more than 4minutes is equivalent to the amount of aerosol emitted for 30seconds of singing or coughing. Infected individuals represent emission sources of aerosol generated by routine behaviours – such as breathing, speaking, singing, coughing, and sneezing – all of which might be capable of transmitting disease.

**Somsen GA, et al. (27 May 2020). Small droplet aerosols in poorly ventilated spaces and SARS-CoV-2 transmission. *The Lancet Respiratory Medicine* (published online). [sciencedirect.com/science/article/pii/S2213260020302459](https://www.sciencedirect.com/science/article/pii/S2213260020302459)**

This study analysed droplets produced through speech and coughs through measuring droplet size distribution, travel distance and velocity, and the airborne time in relation to the level of air ventilation. Both large and small droplets were produced in a cough, and in speech only small droplets were detected. Large droplets were found to fall to the ground rapidly within 1 second, and small droplets could take up to 9 minutes to reach the ground. In the best ventilated room, the numbers of droplets halved within 30 seconds, whereas with no ventilation this took 5 minutes. In a poorly ventilated room, the number of droplets was halved in 1-4 minutes. This study concludes that better ventilation of spaces substantially reduces the airborne time of respiratory droplets.

**Scheuch, G. (2020). Breathing Is Enough: For the Spread of Influenza Virus and SARS-CoV-2 by Breathing Only. *Journal of Aerosol Medicine and Pulmonary Drug Delivery*; 33:4: pp. 1-5. [liebertpub.com/doi/full/10.1089/jamp.2020.1616](https://doi.org/10.1089/jamp.2020.1616)**

The author has detailed a number of past studies into the exhalation of several different viruses, which have all concluded that breathing alone is enough to spread infection. These findings can be applied to SARS CoV-2 until more is known about this particular virus. Recommendations to contain exhaled viruses include being outdoors (where particles become diluted), ensuring indoor large air exchange and filters, and wearing masks.

**van Doremalen N, et al. (16 April 2020). Aerosol and surface stability of SARS-CoV2 as compared with SARSCoV-1. *New England Journal of Medicine* 2020; 382: 1564-67. [nejm.org/doi/full/10.1056/nejmc2004973](https://doi.org/10.1056/nejmc2004973)**

Both viruses remained viable in aerosols for up to 3 hours; both remained viable the longest on plastic (72 hours) and stainless steel (48 hours). CoV-2 lasted longer on cardboard (24 hours) than CoV-1 (8 hours). Both viruses had the shortest viability on copper surfaces (4-8 hours).

## Instrument hygiene

An issue already likely to problematise the health of musicians is the cleanliness of their instruments. Marshall & Levy (2011) found that it is extremely likely for woodwind and brass instrumentalists to re-contaminate themselves, and indeed contaminate others who might share their instrument, with a host of different bacteria and viruses, including the possibility of chronic immune conditions (p. 275). These articles are included to potentially help form guidance on the resumption of musical activities, and can contribute to the overall health of musicians.

**Marshall, B., Levy, S. (May 2011). Microbial contamination of musical wind instruments. *International Journal of Environmental Health Research*, 21: 4, 275-285. <https://doi.org/10.1080/09603123.2010.550033>**

This research provides prospective data on the survival of bacterial pathogens in wind instruments. Saliva and respiratory pathogens can be easily spread by sharing wind instruments, and players can re-contaminate themselves through repeated

play of their own instruments. Reed instruments consistently carried higher microbial loads (species remained viable 1-13 days), and bacteria on plastic, wood and paper could persist for up to 3 days. Recommendations are included on properly sanitising instruments between people sharing them and regular cleaning of individual instruments.

**Glass T., Conrad, R., Kohler, G., Bullard, J. (March/April 2011). Evaluation of the microbial flora found in woodwind and brass instruments and their potential to transmit diseases. *Academy of General Dentistry*, 59: 2, 100-7. [researchgate.net/publication/310460514\\_Wind\\_Ensemble\\_Infectious\\_Disease\\_Risks\\_II\\_A\\_Microbiological\\_Examination\\_of\\_Condensate\\_Liquids\\_in\\_Woodwind\\_Instruments](https://www.researchgate.net/publication/310460514_Wind_Ensemble_Infectious_Disease_Risks_II_A_Microbiological_Examination_of_Condensate_Liquids_in_Woodwind_Instruments)**

This study took samples from 117 instruments in order to determine whether wind instruments are contaminated by either frank or opportunistic pathogenic microorganisms, which can cause significant disease in the person playing the instrument. The study confirmed that wind instruments are heavily contaminated with a wide variety of bacterial and fungal isolates in addition to a number of potentially harmful microbes, many of which are associated with minor to serious infectious or allergic diseases. The results of this study revealed that wind instruments and their cases become contaminated with use and that this contamination can last for extended periods of time. These findings warrant regular sterilisation of the entire instrument and its' case.

**Schwalje, A., Hoffman, H. (12 June 2020). Wind Instrument Aerosol in Covid Era – COVID-19 and horns, trumpets, trombones, euphoniums, tubas, recorders, flutes, oboes, clarinets, saxophones and bassoons. *Iowa Head and Neck Protocols, University of Iowa Health Care*. <https://medicine.uiowa.edu/iowaprotocols/wind-instrument-aerosol-covid-era-covid-19-and-horns-trumpets-trombones-euphoniums-tubas-records>**

A short, informative paper signposting to a large number of scientific resources. Warning against following guidance that is not scientifically supported, it makes clear that not enough is presently known about aerosol emission and its' role in COVID-19 transmission; more studies are needed for instrumentalists specifically in order to understand the risks.

# Choirs and Ensembles

Kähler, C., Hain, R. (15 May 2020). Singing in choirs and making music with wind instruments – is that safe during the SARS-CoV-2 pandemic? Institute of Fluid Mechanics and Aerodynamics, University of the Bundeswehr Munich. Retrieved from <https://www.mh-freiburg.de/en/university/covid-19-corona/risk-assessment>

These experimental studies took quantitative measurements of the air movement and droplet emission of singers and brass and wind players. The results showed that air movement was not detected at 0.5 metre for singing and brass; 1.0 metre for oboe, clarinet, bassoon; and slightly more for the flute. This data informed various recommendations for playing indoors (including ventilation, use of popshields, physical distancing), outdoors (reducing noise levels, physical distancing), and general behaviours for musicians (wearing masks to converse during breaks, brass players to empty liquid more frequently into a bowl with detergent).

Spahn, C., Richter, B., et al. (second update: 19 May 2020). Risk Assessment of a Coronavirus Infection in the Field of Music (translated) [drive.google.com/drive/folders/18ZZZ\\_Rn42v-jHvW\\_0RCbQJH5U2Q-uL3e](https://drive.google.com/drive/folders/18ZZZ_Rn42v-jHvW_0RCbQJH5U2Q-uL3e)

This is a comprehensive document which explains transmission pathways of SARS-CoV-2 (droplets, aerosols, contact transmission) and offers recommendations for possible risk reduction in the field of music. It suggests entrance screening (a survey/questionnaire to regulate eligibility for attendance), temperature checks, ensuring venue size and ventilation is sufficient, reducing rehearsal time, and allowing for regular airing out of the room every 15 minutes. The current recommendation for physical distancing for all forms of music making is two metres.

Willich, S.N., Berghöfer, A., et al. (7 May 2020, translated). Policy brief about performances of orchestras during the COVID-19 pandemic. Charité – University of Medicine Berlin. [audiologie-phoniatrie.charite.de/fileadmin/user\\_upload/microsites/m\\_cc16/audiologie/Allgemein/Singen\\_und\\_SARS-CoV-2\\_Prof.\\_M%C3%BCrbe\\_et\\_al.\\_04052020.pdf](https://audiologie-phoniatrie.charite.de/fileadmin/user_upload/microsites/m_cc16/audiologie/Allgemein/Singen_und_SARS-CoV-2_Prof._M%C3%BCrbe_et_al._04052020.pdf)

With input from orchestra boards from seven major orchestras in Berlin, this contains detailed stage plan recommendations for orchestras to reconvene, including instrument-specific air flow information, behavioural and hygiene responsibilities, and physical distancing (strings, percussion, harp, keyboard 1.5 metres; wind players two metre; conductor two metre for rehearsal and 1.5 metres for performance).

BAPAM (23 June 2020). Risk Assessment for freelance performers returning to work during COVID-19. [bapam.org.uk/wp-content/uploads/2020/06/BAPAMIndividual-Self-employed-Risk-Assessment-for-COVID-19.pdf](https://www.bapam.org.uk/wp-content/uploads/2020/06/BAPAMIndividual-Self-employed-Risk-Assessment-for-COVID-19.pdf)

This is a risk assessment form for individuals to help them understand the specific risks they face, including level of vulnerability and risk of exposure to COVID-19, and enable these risks to be mitigated as far as possible.

Miller, S., et al. (15 June 2020). Transmission of SARS-CoC-2 by inhalation of respiratory aerosol in the Skagit Valley Chorale superspreading event. Submitted to *Indoor Air*. **NB: Not peer-reviewed.** <https://doi.org/10.1101/2020.06.15.20132027>

This case study of a Washington (USA) choir is now infamous for the tragic consequences of a likely superspreading event which led to 53-87% of the 61-member choir being infected, and sadly two deaths. This article goes into great detail of the factors which may have led to this occurrence, including poor ventilation of the space, high occupancy and close proximity, and the emission of large amounts of aerosol through loud singing. Through studying a simulation of these conditions, it concludes that improving air ventilation for indoor spaces and further studies of aerosol transmission is necessary.

## Additional sources

Andersen, E., et al. (1 May 2020). Consideration of the Aerosol Transmission for COVID-19 and Public Health. *Risk Analysis International Journal*; 40:5, pp. 902-907. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7267124/>

Bai, Y. et al (21 Feb 2020). Presumed Asymptomatic Carrier Transmission of COVID-19. *JAMA*; 323 (14), pp. 1406-1407. <https://doi.org/10.1001/jama.2020.2565>

Johnson, GR. et al (2011). Modality of human expired aerosol size distributions. *Journal of Aerosol Science*; 42:12, pp. 839-851. <https://doi.org/10.1016/j.jaerosci.2011.07.009>

Loudon RG, Roberts RM (1968). Singing and the dissemination of tuberculosis. *American Review of Respiratory Disease*; 98: pp. 297-300. <https://www.atsjournals.org/doi/abs/10.1164/arrd.1968.98.2.297>

Xie, X. et al (2007). How far droplets can move in indoor environments – revisiting the Wells evaporation-falling curve. *Indoor Air*; 17:3, pp. 211-225. <https://doi.org/10.1111/j.1600-0668.2007.00469.x>

## Recent non-peer-reviewed instrument studies

- **Bamberg Symphony Orchestra:** Scientists measure aerosol emissions. [br.de/nachrichten/bayern/bambergersymphoniker-wissenschaftler-messen-aerosolausstoss](https://www.br.de/nachrichten/bayern/bambergersymphoniker-wissenschaftler-messen-aerosolausstoss), [Ry6T60U?fbclid=IwAR0q9Lfnqv3QFBZ6EiWDIKs2vvNEBJKb96oYhDa-PeKx6ePGu9jQy5RrQ](https://www.br.de/nachrichten/bayern/bambergersymphoniker-wissenschaftler-messen-aerosolausstoss)
- **Vienna Philharmonic:** Movement of musicians' breath while performing. [wien.orf.at/stories/3049099](https://www.wien.orf.at/stories/3049099)
- **Occupational hygienist Thomas Eiche** measured expelled droplets and aerosols in brass and woodwind instruments. [thomaseiche.ch/](https://www.thomaseiche.ch/)
- **Odense Symphony Orchestra:** measurement of airborne particles from brass and woodwind instruments from different distances. <https://www.makingmusic.org.uk/sites/makingmusic.org.uk/files/Measurement%20of%20aerosol%20from%20brass%20and%20woodwind%20instruments%20.pdf>

## Some studies currently underway

- **Colorado State University** [smt.d.colostate.edu/reducing-bioaerosol-emissions-and-exposures-in-the-performing-arts/](https://www.smt.d.colostate.edu/reducing-bioaerosol-emissions-and-exposures-in-the-performing-arts/)
- **University of Colorado & University of Maryland** <https://www.nfhs.org/articles/unprecedented-international-coalition-led-by-performing-arts-organizations-to-commission-covid-19-study/>

# Updated literature up until 21 August 2020

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## COVID-19 Transmission

**de Oliveira, P.M., Mesquita, L., Gkantonas, S., Giusti, A., Mastorakos, E. (24 July 2020). Evolution of spray and aerosol from respiratory releases: theoretical estimates for insight on viral transmission. medRxiv (pre-print; not yet peer-reviewed). Published online: <https://doi.org/10.1101/2020.07.23.20160648>**

This paper provides quantitative estimates for the development of physical distancing and ventilation controls. There is a great deal of detail on why physical distancing in the absence of ventilation is not sufficient. It suggests that an infected person speaking in a room for an hour with inadequate ventilation could lead to infection risk levels of 10-20%. With 10 air changes per hour, this can be reduced by a factor of at least three; with 100 air changes per hour, the risk level falls below 0.5%.

**Hartmann, A., Lange, J., Rotheudt, H., Kriegel, M. (2020) Emission rate and particle size of bio aerosols during breathing, speaking and coughing. Hermann Rietschel Institute. <http://dx.doi.org/10.14279/depositonce-10331>**

This study measured particle emission rates during calm breathing through the nose, calm breathing through the mouth, reading out text at normal sound level and pace, and coughing once (repeated at least five times per subject). The findings showed that more than 80% of the particles were smaller than 1µm and 99.9% smaller than 5µm. Particles in this small size range can generally stay in the air for a significant amount of time and become distributed around the room. The study indicated 'super-emitter' cases where 10-20 times more particles were emitted than the average. The authors suggest that measurement set-up needs to take into account in future studies, as possible contaminations from other sources (e.g., subjects' skin and clothing) could impact upon results.

**Lednicky, J. et al (August 2020). Viable SARS-CoV-2 in the air of a hospital room with COVID-19 patients. medRxiv (preprint; not yet peer-reviewed). Published online: <https://doi.org/10.1101/2020.08.03.20167395>**

This pre-print reports the collection of active SARS-CoV-2 particles in the air from distances between 2-4.8m. Although the viral load necessary for infection is not yet established, these findings add to the growing evidence around aerosol transmission (which is still not officially recognised by the World Health Organisation) and ensuring sufficient room ventilation.

**Shao, S., Zhou, D., He, R., Li, J., Zou, F., Mallery, K., Kumar, S., Yang, S., Hong, J. (2020). Risk assessment of airborne transmission of COVID-19 by asymptomatic individuals under different practical settings. ArXiv (pre-print; not yet peer-reviewed). Published online: <https://arxiv.org/pdf/2007.03645.pdf>**

This study performed at the University of Minnesota combined the characterisations of different settings (an elevator, a small classroom, and a supermarket) with computational fluid dynamics in order to quantify normal respiratory behaviours (breathing and speaking). It includes several diagrams which illustrate the variation in movement of particles dependent upon different types of ventilation. This highlights the possibility of 'hot spots' based on ventilation placement, which can cause particles to spread more in larger spaces as well as increase particle deposition on surfaces, causing a higher risk of surface contamination. In the small classroom setting, a simulation of a lecture with the participant speaking at the front of the room consistently for 50 minutes was performed with the ventilation at the back of the room and again with the ventilation near the speaker. In the former, particles spread to the back of the classroom and in the latter, the spread of particles were mostly confined to the immediate area around the speaker.

**Szablewski, C., Chang, K., Brown, M., et al. (31 July 2020). SARS-CoV-2 Transmission and Infection Among Attendees of an Overnight Camp – Georgia, June 2020. Center for Disease Control and Prevention. Published online: [https://www.cdc.gov/mmwr/volumes/69/wr/mm6931e1.htm?s\\_cid=mm6931e1\\_w](https://www.cdc.gov/mmwr/volumes/69/wr/mm6931e1.htm?s_cid=mm6931e1_w)**

This report covers a recent outbreak at a residential summer camp in Georgia (USA) where out of 344 tests, 260 (76%) were positive. The camp's mitigation measures included attendees required to provide proof of a negative viral SARS-CoV-2 test no more than 12 days before arrival, bubbling attendees in cabin cohorts fewer than 26, and enhanced cleaning procedures. The camp did not require mask wearing or increase ventilation, and some of the indoor and outdoor activities included vigorous singing and cheering. The report concludes that the combination of relatively large cohorts, non-compulsory mask wearing, and singing activities likely contributed to the outbreak. It also adds to the body of evidence that children of all ages are susceptible to infection.

## Choirs and Ensembles

**Charlotte, N. (5 August 2020). High Rate of SARS-CoV-2 Transmission due to Choir Practice in France at the Beginning of the COVID-19 Pandemic. medRxiv (pre-print; not yet peer-reviewed). <https://doi.org/10.1101/2020.07.19.20145326>**

This is a report on another SARS-CoV-2 outbreak linked to a choir practice from March 2020 in France. Out of the 27 members (all male) attending the rehearsal in an indoor, unventilated space, 70% of participants were diagnosed with COVID-19 1-12 days after the rehearsal. Information was gathered through anonymous questionnaires to choir members and interviews with the president and conductor of the choir. Certain factors impaired the gathering of sufficient evidence to come to a conclusion about the actual rehearsal event including: at the time of the rehearsal, testing in France was prioritised for health workers and not for those with mild symptoms; the authors did not personally interview the choir members; and, two of the attendees had close contact with a COVID-19 case in the days before the rehearsal.

**He, R., Gao, L., Trifonov, M., Hong, J. (11 August 2020). Aerosol Generation from Different Wind Instruments. medRxiv (preprint; not yet peer-reviewed). Published online: <https://doi.org/10.1101/2020.08.03.20167833>**

This study on aerosol generation from wind instruments with different dynamic levels and articulation patterns involved 15 musicians from the Minnesota Orchestra. A categorisation of low, intermediate, and high-risk levels was established based upon the aerosol concentration levels compared to normal breathing and speaking; the tuba produced fewer aerosols than normal breathing (low risk); piccolo, flute, bass clarinet, French horn, bassoon, and clarinet were within the normal breathing and speaking range (intermediate risk); trumpet, oboe, and bass trombone tend to generate more aerosols than speaking (high risk).

**Gregson; Watson; Orton; Haddrell; McCarthy; Finnie; et al. (20 August 2020). Comparing the Respirable Aerosol Concentrations and Particle Size Distributions Generated by Singing, Speaking and Breathing. ChemRxiv (preprint; not yet peer-reviewed). [https://chemrxiv.org/articles/preprint/Comparing\\_the\\_Respirable\\_Aerosol\\_Concentrations\\_and\\_Particle\\_Size\\_Distributions\\_Generated\\_by\\_Singing\\_Speaking\\_and\\_Breathing/12789221](https://chemrxiv.org/articles/preprint/Comparing_the_Respirable_Aerosol_Concentrations_and_Particle_Size_Distributions_Generated_by_Singing_Speaking_and_Breathing/12789221)**

The results of the singing portion of this larger study are detailed in this pre-print (results from wind and brass are not yet available), in which the aerosols and droplet concentrations were measured with an Aerodynamic Particle Sizer. A cohort of 25 professional singers (in which 6 identified as soprano or mezzo-soprano, 7 as alto, 5 as tenor, and 7 as bass or baritone) were tested during activities including breathing, coughing, singing single notes at different pitches, and speaking and singing the "Happy Birthday" song at different volumes. The findings examine the quantity, size, and concentration of particles emitted, suggesting that the number concentrations from speaking and singing rise in parallel with increasing volume. This is in line with other papers covering aerosol transmission and super-spreading events in choirs. Key considerations suggested for the resumption of singing activities should focus on the volume of vocalisations, the number of participants, and the duration of the activity. Ensuring adequate ventilation for indoor activities is a crucial aspect of resuming group singing and may be more important than restricting specific activities.

**Murbe, D., Fleischer, M., Lange, J., Rotheudt, H., Kriegel, M. (2020). Aerosol emission is increased in professional singing. Charité – University of Berlin, Department of Audiology and Phoniatics and Technical University Berlin Hermann-Rietschel Institute. Published online [https://depositonce.tu-berlin.de/bitstream/11303/11491/5/muerbe\\_et\\_al\\_2020\\_aerosols-singing.pdf](https://depositonce.tu-berlin.de/bitstream/11303/11491/5/muerbe_et_al_2020_aerosols-singing.pdf)**

This is a study on aerosols emitted by a cohort of eight professional singers from the RIAS Kammerchor Berlin. Different singing groups were represented (two each of soprano, alto, baritone, and tenor), and four tasks were performed (breathing through the mouth, reading a standardised text, singing a line of a four-part choral movement, and singing a sustained vowel for ten seconds at three loudness conditions – piano, mezzo forte, forte). The measurements were made with a laser particle counter, and the data was directly compared to results from a larger cohort of speaking from Hartmann et al, 2020. The findings strengthen existing data which suggests that singing is likely to produce a greater concentration of aerosols than speaking (and acknowledges that this aligns with other studies which have found that the risk increases with vocal loudness). This data may contribute to risk management strategies going forward for singing activities.

**James Weaver (NFHS) and Mark Spede (CBDNA), Chairs Lead Scientists: Shelly Miller (University of Colorado Boulder) and Jelena Srebric (University of Maryland) (6 August 2020). International Coalition of Performing Arts Aerosol Study Round 2. Published online: <https://www.nfhs.org/media/4030003/aerosol-study-prelim-results-round-2-final.pdf>**

The second report from the International Coalition Performing Arts Aerosol Study (University of Colorado Boulder and University of Maryland) investigated aerosol emission from singers, instrumentalists, and theatre performers. Key preliminary findings indicate that applying bell covers to instruments reduces aerosol particle emissions, distancing between players needs to be maintained at 6 feet (9 feet for trombonists), rehearsals to be limited to 30 minutes indoors and if outdoors, a five minute break every 30 minutes allows aerosols to disperse. The study is expected to be completed in December.

**University of Iowa School of Music COVID-19 Policies (last update 14 August 2020). Published online: <https://music.uiowa.edu/school-music-covid-19-policies>**

This document gives an overview of the plans put in place by a large university music department, with detailed guidance on how ensemble rehearsals, individual practice, and concerts will resume. Some of the guidance includes ensembles breaking into smaller sectional rehearsals limited to 30 minutes at a time and choir members wearing face coverings in rehearsals; practice room etiquette involving string players and pianists wearing a face covering during practice and 10-minute HEPA-filter air scrubbing (before the door can be opened) plus 30 minutes between students, and concerts lasting no more than one hour with no interval.

## Additional sources

**Department for Digital, Culture, Media & Sport (updated 13 August 2020). Working safely during COVID-19: Performing arts. <https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19/performing-arts>**

**Higgins, C. (22 July 2020). Sing into the funnel please: inside the Covid-19 lab hoping to declare singing safe. The Guardian. Retrieved from <https://www.theguardian.com/music/2020/jul/22/sing-funnel-covid-19-lab-hoping-declare-singing-safe>**

**Mandavilli, A. (11 August 2020). 'A Smoking Gun': Infectious Coronavirus Retrieved from Hospital Air. New York Times. Retrieved from <https://www.nytimes.com/2020/08/11/health/coronavirus-aerosols-indoors.html>**

**University of Bristol (10 July 2020). New COVID-19 study could help performers back on the stage. Retrieved from <http://www.bristol.ac.uk/news/2020/july/perform-study.html>**

# Music Education and COVID-19

Prepared by Dr Jodie Underhill on behalf of the ISM between 19 June – 11 July 2020

Updated 21 August 2020

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## Research into children and the transmission of COVID-19 has continued to develop since the initial outbreaks of the disease.

However, despite this wealth of new information, there is still no clear consensus as to the role that children play, the transmission paths and the implications for the full return of schools in the autumn.

Some studies have found outbreaks in schools which have spread to the wider community, whilst others have found limited evidence that school reopening has contributed to outbreaks in either schools or the community. Panovska-Griffiths et al conducted a modelling study which suggested that without a 'sufficiently broad test-trace-isolate' programme in place, the reopening of schools combined with the wider reopening of society might lead to a second wave of COVID-19, 2-3 times the size of the original, with a peak in December 2020.<sup>39</sup> A Public Health England study of 100 schools and 20,000 pupils and teachers, which was launched in June, is expected to be published later this year. Professor Russell Viner (who co-authored the modelling study above) is quoted in the media as saying that children are "very minor players" in the transmission of COVID-19 and that re-opening schools would "add little" to the infection's reproductive rate.<sup>40</sup>

On the 2nd July, the Department for Education published its guidance for the full reopening of schools in England for September.<sup>41</sup> Prior to this, media reports suggested that these plans included a narrowing of the curriculum by suspending non-core subjects for two terms and pupils possibly dropping GCSEs in order to concentrate on English and Maths.<sup>42</sup> These

leaked plans caused concern to many music educators in light of the ongoing decline in music education, as documented in the 2019 ISM report, *State of the Nation*.<sup>43</sup> Although the DfE guidance reinforces the desire for a broad and balanced curriculum, there are still restrictions placed on music teaching with no indication of when all practical music making activities can resume. On the 12 August, the Scottish Government published new guidance for schools which states that singing and playing wind or brass instruments should be avoided during the initial return to schools.<sup>44</sup>

## What does the guidance say?

### Primary and Secondary Schools

In Key Stages 1-3, the majority of pupils are expected to be taught a full range of subjects over the 2020/21 academic year, prioritising the most important missed content within subjects. Whilst there is some flexibility to suspend some subjects for some pupils, this can only take place in exceptional circumstances and only where the best interests of the child can be demonstrated. In Key Stage 4, pupils may be allowed to drop subjects, again only in exceptional circumstances, and where this may result in them achieving significantly better results in English and maths. Key Stage 5 provision should be largely unaffected due to the small number of subjects studied. Specialist rooms are allowed to be used either with equipment being cleaned between each 'bubble' of pupils or rotated and left unused for up to 72 hours. Schools are encouraged to take on ITT trainees with some suggestions of general activities they could be involved in.

In addition to the general curriculum requirements, music and PE have additional guidelines. The guidance for music states, "...

there may be an additional risk of infection in environments where you or others are singing, chanting, playing wind or brass instruments or shouting, even at a distance.<sup>45</sup> Risk reducing measures include social distancing, ensuring good ventilation, not sharing instruments, playing back to back or side by side, using outdoor spaces and limiting these activities to no more than 15 pupils. School choirs, ensembles involving brass and wind playing and assemblies should not take place.

Peripatetic instrumental teachers are permitted to move between schools but are encouraged to limit their contact with other staff and keep as much distance from them as possible. If they are able to teach at schools outside of normal hours they should do so. Extra-curricular activities are recognised as being an important way for pupils to re-connect with each other, but they should be kept within year groups or other 'bubbles' wherever possible and if not, take place in small consistent groups.

In contrast, PE departments are given the flexibility to decide how sports activities are to be taught with appropriate mitigating measures. Contact sports are not prohibited but should be avoided. Where outdoor sports cannot take place, indoor spaces can be used with appropriate distancing, cleaning and hygiene. The rationale for this is "the way in which people breathe during exercise".<sup>46</sup> Schools are directed to follow advice from external organisations such as Sport England and the Youth Sport Trust. There are no restrictions on the numbers of pupils or the types of activities which can take place. The guidance raises questions as to why such limitations are placed on music departments and not PE departments if the primary concern is changes in breathing and why external organisations are trusted to provide guidance for mitigating risks within PE lessons but not music lessons.

### **Further Education, Higher Education and Out of School Provision**

For Further Education settings, "activities such as singing and/or playing instruments should be avoided."<sup>47</sup> The guidance goes on to say that the government is continuing to work on scientific and medical advice regarding the safe management of these activities. No indication of when these activities can resume is given. The guidance for Higher Education allows live rehearsals and performances to take place without an audience. Providers are recommended to await further guidance on participating in singing and playing wind and brass instruments, although some risk reducing measures are suggested such

as social distancing and reducing the number of singers and wind and brass players in one space to the smallest numbers possible.<sup>48</sup> The guidance for out of school provision, such as holiday clubs and weekend tuition **was updated on the 20 August to allow singing, wind and brass playing with mitigating measures such as groups of no more than 15, social distancing of 2 metres, not singing loudly, improved ventilation and the use of microphones where possible.**<sup>49</sup>

## **What are the potential implications of the guidance?**

There are a number of implications for music education as a result of this current guidance, in addition to a lack of consistency across different settings as to which musical activities are allowed. Schools and FE providers may offer the same post-16 qualifications but have different restrictions placed on them because of their setting. Restrictions on singing and playing instruments may lead to a reduction in the type of practical music activities that can be taught, impact the length of lessons if equipment has to be cleaned between classes and affect the numbers of pupils able to attend extra-curricular provision. Some schools may choose not to use specialist music rooms at all if they have concerns about managing them. Access to these is particularly important for KS4 and KS5 pupils who need to prepare and complete coursework. ITT trainees' experience in music departments will be much diminished in such cases. The current messaging to parents from the DfE is that, "...there may need to be changes to some subjects – such as PE and music – to ensure they can be delivered as safely as possible".<sup>50</sup> If parents do not trust that music lessons can be delivered safely in person, they may not want their children to learn an instrument. If schools only permit peripatetic teachers to work on site outside of school hours, this could potentially limit the amount of provision available and reduce the income of instrumental teachers as well as the opportunities available to pupils.

# What is informing the government's current thinking?

It is difficult to determine how the government has reached the conclusion that restrictions should be placed on certain musical activities but not on sporting ones. The Scientific Advisory Group for Emergencies (SAGE) has communicated research to the government in order to support their decision making since the start of the SARS-CoV-2 pandemic. The members of SAGE agreed to publish all minutes and supporting documents from their meetings in order to be fully transparent. **In the first 40 meetings (up to the 4 June 2020)**, only four sets of documents made any reference to restricting singing activities.

The first two papers by the Environmental Modelling Group (a SAGE sub-group) address the potential short range respiratory transmission risk in face-to-face contacts and suggest that not singing is one possible mitigation measure. Both papers explore similar themes and identify that aerosol and/or droplet generation “probably increases with loudness of sound...May also vary between languages and even words used.”<sup>51</sup> Front to back and side to side interactions pose a partial risk and face-to-face interactions the highest risk. In the second paper the EMG states that “while there is some data on droplet generation rates from respiratory activities, there is very little data related to respiratory pathogens (only influenza and TB) and no data presently for SARS-CoV-2 or other human coronaviruses.”<sup>52</sup> The third paper from the EMG identifies anecdotal reports of super-spreading events, citing at least two outbreaks in choirs including the Skagit Chorale in the USA.<sup>53</sup> The paper includes a table of mitigation measures ranked by the 14 members of the EMG in terms of efficacy, effectiveness and confidence in the quantity and quality of evidence. Some examples include social distancing, cleaning protocols and PPE. Reducing talking time/no singing was ranked mostly medium efficacy, medium/low effectiveness and low/medium confidence. Of the 39 potential mitigating measures identified, only three received rankings no higher than medium for effectiveness: singing, anti-microbial surfaces and changes to room air distribution patterns. An additional table expands on the rationale for each measure and includes available evidence and practical considerations. For singing, the evidence is stated as a, “small amount of mechanistic evidence from studies measuring droplet production, high rates of transmission reported in several choirs and religious groups.”<sup>54</sup> However, they also note that

there is no conclusive evidence of singing being responsible in these cases and that the impact of singing is “likely to be low for most environments.”<sup>55</sup> The EMG identify singing, wind and brass instruments as an important research gap that should be addressed in order to open up musical activities which have been restricted due to ‘sufficient concern’. They also cite a significant lack of evidence in this area. These statements pose the question as to what is underpinning the government’s decisions when there seems to be acknowledged lack of data.

The **fourth** research paper is from the Centre for Mathematical Modelling of Infectious Diseases working group at the London School of Hygiene & Tropical Medicine. This paper from the 3 June looks at 201 cases of super spreader events up until the 26 May, which are then classified into 22 setting types.<sup>56</sup> The authors describe “several reports of outbreaks in choirs”, that “activity matters: not just time in shared space, but the activity being performed. E.g. many choirs, from different countries...” and suggest that the findings imply “that there are some settings which are ‘more risky’ either due to (a) environment (indoor / lack of ventilation / population density) or (b) activity occurring (singing/loud) or (c) duration of contacts...”<sup>57</sup> There are two additional versions of this paper on the Wellcome Open Research website – one published on the 1 May<sup>58</sup> and an updated version on the 5 June.<sup>59</sup> These versions are very different to the one published by SAGE. Choir practice and singing are only included as descriptive activities within religious settings and funerals, respectively. The assertions made in the SAGE version are absent in both Wellcome versions and questions remain as to why they differ so greatly and why so much emphasis was placed on choral activity in one version but not the others.

**Singing is covered in more detail in a paper from the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) from the 47th meeting of SAGE on the 16 July 2020. The paper concludes that there is “some evidence to suggest that singing produces more aerosols than normal talking or breathing” but there is “no evidence describing the distance that droplets or aerosols travel after being ‘released’ during singing.” They acknowledge that it is not clear if playing wind instruments presents the same risk as singing and that further research into transmission risks for singing and playing wind instruments is needed.<sup>60</sup> Singing is briefly mentioned in relation to aerosol transmission at SAGE 48 on the 22 July 2020.<sup>61</sup>**

# What can be learned from organisations around the world?

Whilst music teachers await the previously promised, more detailed guidance from the DfE, there is much to be learned from other countries' approach to music education in the current pandemic and the consideration that has been given to mitigating any potential risks, allowing children and young people to continue practical music making both in and out of the classroom. 32 separate pieces of guidance were originally considered from 10 different countries. Of these, less than 20% (6/32) advocated discontinuing either singing, choirs or woodwind and brass playing. 38% (12/32) acknowledged the potential increased risk in aerosol transmission but provide a

range of detailed mitigating measures to reduce them for both students and teachers. However, as of 17 August some countries such as Canada and Scotland now recommend temporarily pausing these activities whereas other countries such as Singapore and The Netherlands have relaxed their restrictions.

The guidance across countries is generally consistent: increased social distancing between singers/players, using as large a room as possible for teaching and rehearsing, regular room ventilation, hand and respiratory hygiene, individual handling of instruments, equipment and sheet music, instrument hygiene and classroom cleaning protocols. With careful planning, creativity and support, it is clear that music education can and should continue. "We need music education now more than ever and we need to protect music programmes that are facing changes. Protecting music programmes protects students' abilities to emotionally process what has been happening in the world around us."<sup>62</sup>

<sup>39</sup> Panovska-Griffiths et al (2020) Determining the optimal strategy for reopening schools, the impact of test and trace interventions, and the risk of occurrence of a second COVID-19 epidemic wave in the UK: a modelling study *The Lancet Child and Adolescent Health* [https://doi.org/10.1016/S2352-4642\(20\)30249-2](https://doi.org/10.1016/S2352-4642(20)30249-2)

<sup>40</sup> Cowburn, A (11th August, 2020) Health minister warns data on coronavirus in schools is incomplete after Gavin Williamson says it shows 'little evidence' of transmission *The Independent* <https://www.independent.co.uk/news/uk/politics/coronavirus-schools-incomplete-data-education-secretary-transmission-a9664381.html>

<sup>41</sup> Department for Education (2020) Guidance for full opening: schools <https://www.gov.uk/government/publications/actions-for-schools-during-the-coronavirus-outbreak/guidance-for-full-opening-schools>

<sup>42</sup> Waugh, P (29 June 2020; updated 2 July 2020) Exclusive: What Schools Will Be Told To Do In September So All Pupils Can Return *Huffington Post* [https://www.huffingtonpost.co.uk/entry/school-reopening-whole-year-bubbles-full-guidance-covid\\_uk\\_5ef9dd4ac5b6ca97091288e4](https://www.huffingtonpost.co.uk/entry/school-reopening-whole-year-bubbles-full-guidance-covid_uk_5ef9dd4ac5b6ca97091288e4)

<sup>43</sup> Daubney A, Spruce G and Annetts D (2019) Music education: State of the nation. Report by the All-Party Parliamentary Group for Music Education, the Incorporated Society of Musicians and the University of Sussex <https://www.ism.org/images/images/FINAL-State-of-the-Nation-Music-Education-for-email-or-web-2.pdf>

<sup>44</sup> Department of Children and Families (2020) Coronavirus (COVID-19): guidance on preparing for the start of the new school term in August 2020 <https://www.gov.scot/publications/coronavirus-covid-19-guidance-preparing-start-new-school-term-august-2020/>

<sup>45</sup> Department for Education (2020) Guidance for full opening: schools <https://www.gov.uk/government/publications/actions-for-schools-during-the-coronavirus-outbreak/guidance-for-full-opening-schools>

<sup>46</sup> Ibid

<sup>47</sup> Department for Education (2020) What FE colleges and providers will need to do from the start of the 2020 autumn term <https://www.gov.uk/government/publications/coronavirus-covid-19-maintaining-further-education-provision/what-fe-colleges-and-providers-will-need-to-do-from-the-start-of-the-2020-autumn-term>

<sup>48</sup> Department for Education (2020) Higher education: reopening buildings and campuses <https://www.gov.uk/government/publications/higher-education-reopening-buildings-and-campuses/higher-education-reopening-buildings-and-campuses>

<sup>49</sup> Department for Education (2020) Protective measures for out-of-school settings during the coronavirus (COVID-19) outbreak <https://www.gov.uk/government/publications/protective-measures-for-holiday-or-after-school-clubs-and-other-out-of-school-settings-for-children-during-the-coronavirus-covid-19-outbreak/protective-measures-for-out-of-school-settings-during-the-coronavirus-covid-19-outbreak>

<sup>50</sup> Department for Education (2020) What parents and carers need to know about early years providers, schools and colleges in the autumn term <https://www.gov.uk/government/publications/what-parents-and-carers-need-to-know-about-early-years-providers-schools-and-colleges-during-the-coronavirus-covid-19-outbreak/what-parents-and-carers-need-to-know-about-early-years-providers-schools-and-colleges-in-the-autumn-term>

<sup>51</sup> Environment and Modelling Group (7 May 2020) Risk Estimation to inform risk assessment <https://www.gov.uk/government/publications/risk-estimation-to-inform-risk-assessment-7-may-2020>

- <sup>52</sup> Environment and Modelling Group (14 May 2020) Principles of understanding of transmission routes to inform risk assessment and mitigation strategies <https://www.gov.uk/government/publications/principles-of-understanding-of-transmission-routes-to-inform-risk-assessment-and-mitigation-strategies-updated-14-may-2020>
- <sup>53</sup> Environment and Modelling Group (4 June 2020) Transmission of SARS-CoV-2 and Mitigating Measures <https://www.gov.uk/government/publications/transmission-of-sars-cov-2-and-mitigating-measures-update-4-june-2020>
- <sup>54</sup> Ibid.
- <sup>55</sup> Ibid.
- <sup>56</sup> Knight, G, Leclerc, Q, Kucharski, A on behalf of CMMID working group (3 June 2020) Analysis of SARS-CoV-2 transmission clusters and superspreading events <https://www.gov.uk/government/publications/analysis-of-sars-cov-2-transmission-clusters-and-superspreading-events-3-june-2020>
- <sup>57</sup> Ibid.
- <sup>58</sup> Leclerc, Q. J, Fuller, N. M, Knight, L. E, CMMID COVID-19 Working Group, Funk, S, Knight, G. M (2020) What settings have been linked to SARS-CoV-2 transmission clusters? <https://wellcomeopenresearch.org/articles/5-83/v1>
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- <sup>60</sup> New and Emerging Respiratory Virus Threats Advisory Group (16th July, 2020) Assessment of transmission of COVID-19 through musical events <https://www.gov.uk/government/publications/nervtag-assessment-of-transmission-of-covid-19-through-musical-events-16-july-2020>
- <sup>61</sup> New and Emerging Respiratory Virus Threats Advisory Group and the Environmental and Modelling group (22nd July, 2020) Role of aerosol transmission in COVID-19 <https://www.gov.uk/government/publications/nervtagemg-role-of-aerosol-transmission-in-covid-19-22-july-2020>
- <sup>62</sup> BCMEA and CMEBC (2020) Guidance for Music Classes in British Columbia During COVID-19 <http://www.bcmusiced.ca/music-resource-room>

# Music Education and COVID-19

## Literature review (8 June – 11 July 2020)

Prepared by Dr Jodie Underhill on behalf of the ISM.

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### **From the earliest days of the SARS-CoV-2 outbreak, the role that children and young people play in its' transmission, both to adults and other children, has been important to understanding and controlling the virus.**

The earliest research indicated that children could potentially be the main spreaders, although much of this was supposition based on previous influenza outbreaks (Cao et al.). Later studies have concluded that children have played a lesser role in the transmission of SARS-CoV-2 than adults (Isaacs et al.; Heavey et al.) although there continues to be a lack of clarity in this area (Davies et al.).

School closures have previously been used to limit the spread of viruses by reducing the number and range of contacts between children, households and schools. Localised school closures began in China in January 2020, and as of the 26 June, 116 countries had countrywide school and university closures. More than one billion learners worldwide had been affected and at the height of these closures in the UK, more than 15 million young people's learning was affected (UNESCO). Following advice from SAGE and the Interdisciplinary Task and Finish Group on the Role of Children in Transmission, early years settings and primary schools in England began to reopen to children in Nursery/Pre-school, Reception, Year 1 and Year 6 on the 1 June 2020. From the 15 June 2020 pupils in Year 10 and Year 12 could return to school, but only a quarter of these age groups could attend at any one time.

As pupils have started to return to the classroom and schools plan for full reopening in September, there are implications for the curriculum, particularly in practical subjects. In addition to curriculum music across the lower three Key Stages, there

are also implications for KS4 and KS5 courses, extra-curricular activities, instrumental tuition and Initial Teaching Training courses. It remains unclear at the present time how schools will accommodate the return of all pupils and staff and the teaching of all subjects, particularly where children are in different subject sets and pursuing different exam subjects. Media reports on the 29 June of leaked Department of Education plans for September suggested that some non-core subjects will be suspended for two terms and that some pupils may have to drop GCSEs in order to catch up and achieve better grades in English and Maths.

Other governments and organisations around the world have produced guidance for teaching music whilst reducing the transmission risks of SARS-CoV-2. However, they also acknowledge that the scientific advice on singing and playing woodwind and brass instruments is still developing, and so provide advice on mitigating measures in order for music to continue being taught. For instrumental teaching and ensembles these include health screening, social distancing, hand and respiratory hygiene, large/alternative rehearsal and teaching spaces, room ventilation, individual handling of instruments and equipment, the use of face coverings and perspex screens, instrument hygiene and classroom cleaning protocols. Guidance primarily from North America also addresses the potential budget implications of providing individual sheet music, music stands and instruments for pupils as well as an equipped music trolley which classroom teachers could move from room to room with if pupils are to be taught in discrete groups and restricted to using one classroom for all subjects (NFSH & NAFME; AMAM & MMEA).

97% of universities surveyed planned to return to face-to-face teaching in the autumn (Universities UK) and the government have since provided guidance for Higher Education settings. Some conservatoires such as the Royal College of Music, had already planned to return to some face to face teaching in July.

# Music Education and COVID-19

## Literature review (11 July–21 August 2020)

Prepared by Dr Jodie Underhill on behalf of the ISM.

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**It is now generally accepted that a smaller proportion of COVID-19 cases occur in children compared to adults and that children are more likely to have mild symptoms or present as asymptomatic.**

Children are also much less likely to be hospitalised as a result of testing positive for COVID-19 or suffer fatalities, although there are reports of children subsequently suffering from multisystemic inflammation in children syndrome (MIS-C) (Blumfeld et al).

As the focus has shifted from controlling the virus to reopening countries, concern has been raised about the impact of fully reopening schools. Much was made in the US media about a South Korean study which found the highest rate of transmission for household contacts in children aged 10 – 19 (18.6 per cent). However, the figure for non-household transmission for the same age group (0.95 per cent) was the lowest. Overall, the lowest rate for household transmission (5.3 per cent) was found in children aged 0 -9 (Park et al). Importantly, the researchers could not determine the direction of transmission in their study. The direction of transmission could also not be confirmed in a study from Geneva where in 79 per cent of cases in children under 16, an adult in the household was the suspected index (first) case. In the same sample, 8 per cent of cases had a suspected child index case (Posfay-Barbe et al).

In Israel, a major outbreak of COVID-19 occurred ten days after the country fully reopened on 17 May 2020. 260 students, staff,

relatives and friends of two initial but unrelated cases were identified. This included 153 students and 25 members of staff. The source of both initial infections was unknown and the outbreak also occurred during an extreme heatwave in overcrowded conditions with limited social distancing and an exemption from wearing facemasks. Outbreaks are also being reported in the US, with schools closing shortly after reopening as staff and students test positive for coronavirus. These are often in areas where the community spread of the virus is yet to be controlled (Fausset; Shapiro et al).

Despite these reported outbreaks, several studies have concluded that there is limited evidence to suggest that children are transmitting the virus to other children or adults. A number of studies from countries such as Finland, Chile, Australia and Greece found that adults were more likely to infect other adults and children compared to child-to-adult and child-to-child infections (Dub et al; Torres et al; Macartney et al; Maltezou et al). Merckx et al reviewed evidence from a number of countries and concluded that school reopening did not contribute to transmission spikes in low transmission countries. In an addendum to their previous article, Munro and Faust refer to a French study which found that French primary school children were more likely to be infected at home, with no evidence of spread within schools. This is echoed in the work of Ladhani et al in England who found low rates of COVID-19 in preschool and primary children.

Several pieces of school music guidance from around the world included in the initial Global Literature Review have been updated to reflect the changing circumstances within different countries. In some cases, restrictions have been eased and in others they have been tightened. Those not appearing in this updated review remain the same.

# COVID-19 transmission, children and young people

**Cao, Q., Chen, Y., Chen, C., Chiu, C. (2020) SARS-CoV-2 infection in children: Transmission dynamics and clinical characteristics** *Journal of the Formosan Medical Association* **119 (3)** [doi.org/10.1016/j.jfma.2020.02.009](https://doi.org/10.1016/j.jfma.2020.02.009) (Peer reviewed; First published 2 March 2020)

This paper looks at the first known child cases of SARS-CoV-2 in China and their indication that children are a source of adult infection. Comparisons are made with influenza outbreaks where children are the main disseminators either in the household or community and suggest that wider community spread mixed with school transmission at the 'explosion stage of the outbreak' could occur with children as the main spreaders of SARS-CoV-2 due to their usually mild infection. The authors conclude that understanding the role of children in the transmission of the virus is important due to this possibility.

**Davies, N.G., Klepac, P., Liu, Y., Prem, K., Jit, M., CMMID COVID-19 working group and Eggo, R. M. Age-dependent effects in the transmission and control of COVID-19 epidemics (2020) Nature Medicine** [doi.org/10.1038/s41591-020-0962-9](https://doi.org/10.1038/s41591-020-0962-9) (Peer reviewed; first published 16 June 2020)

A study using a mathematical model to explore age disparities in observed SARS-CoV-2 cases in China, Italy, Japan, Singapore, Canada and South Korea. The authors estimate that the susceptibility to infection in people under the age of 20 is approximately half that of adults over the age of 20. They suggest that interventions aimed at children might have a relatively small impact on reducing the transmission of SARS-CoV-2, especially if the transmission risk of asymptomatic infection is low. However, they acknowledge that as children tend to make more social contacts than adults, they could contribute more to the transmission of the virus than adults.

**Di Domenico, L., Pullano, G., Sabbatini, C.E., Boëlle, P., Colizza, V. (2020) Expected impact of reopening schools after lockdown on COVID-19 epidemic in Île-de-France** [doi.org/10.1101/2020.05.08.20095521](https://doi.org/10.1101/2020.05.08.20095521) (Preprint, not yet peer reviewed; first posted 12 May 2020)

Different hypotheses were explored addressing children's and young people's transmissibility of COVID-19. The authors warn that an increase in positive cases is more likely in the two months following the reopening of schools, even with the low transmission risk of children. They state that viral load is similar across age groups and across both symptomatic and asymptomatic cases but that the risk of transmission varies with the severity of symptoms. As milder symptoms have been observed in children, this could explain why younger age groups have a limited role as the source of transmission. They conclude that "additional epidemiological and virological investigations are urgently needed to better characterise the role of children in the transmission dynamics of the disease", across age groups and in schools and the community.

**Heavey, L., Casey, G., Kelly, C., Kelly, D., McDarby, G. (2020) No evidence of secondary transmission of COVID-19 from children attending school in Ireland** *Eurosurveillance* **25 (21)** [doi.org/10.2807/1560-7917.ES.2020.25.21.2000903](https://doi.org/10.2807/1560-7917.ES.2020.25.21.2000903) (Peer reviewed; first published 28 May 2020)

This paper examines COVID-19 transmissions related to schools before their closure on 12 March 2020 in the Republic of Ireland. All SARS-CoV-2 notifications to Public Health Departments were screened to identify children and adults who had attended the school setting. Three children (one primary, two secondary, all above the age of ten) and three adults with links to schools were identified. One was a teacher and the other two adults delivered sessions in schools of up to two hours long. The available data suggested that these cases had not been infected in the school setting – four cases were linked to travel, one recreationally and one via a work environment. 1,155 contacts of the six cases were identified, with exposure occurring in the classroom, during sports and music lessons (woodwind instruments) and during a choir practice which involved a number of schools mixing in a church setting. There were no cases of onward transmission to other children or adults identified, despite the high risk transmission associated with the music lessons and choir practice. There was also no onward transmission from the three adult cases to any children. The only documented transmission that occurred was between adults in a working environment outside school.

**Isaacs, D., Britto, P., Howard-Jones, A., Kesson, A., Khatami, A., Marais, B., Nayda, C., Outhre, A. (2020) To what extent do children transmit SARS-CoV-2 virus? *Journal of Paediatrics and Child Health* 56 (6) [doi.org/10.1111/jpc.14937](https://doi.org/10.1111/jpc.14937) (Peer reviewed; first published 16 June 2020)**

Short paper examining the evidence to date using studies from China, New Zealand and Australia. It concludes that there is a possibility that asymptomatic and children with mild symptoms are important transmitters but rarely spread the virus and that, overall, children are unlikely to be major transmitters of SARS-CoV-2.

**Jespers, V. (2020) Covid transmission and children Belgian Health Care Knowledge Centre (KCE) [researchgate.net/publication/341607318\\_COVID-19\\_Transmission\\_and\\_children](https://researchgate.net/publication/341607318_COVID-19_Transmission_and_children) (Published 19 May 2020)**

A summary of the recent evidence on COVID-19 transmission to and by children. The author explains that as yet, it cannot be concluded that children are less susceptible to SARS-CoV-2 than adults even though a small proportion (1–5%) of all worldwide cases are children. There is also a lack of understanding of the importance of children in the transmission of the virus. Finally, she concludes that future studies involving large numbers of children are needed, including collecting more detailed information during contact tracing.

**Munro, A.P.S and Faust, S.N. (2020) Children are not COVID-19 super spreaders: time to go back to school (peer reviewed) *Archives of Disease in Childhood* 105 (7) [dx.doi.org/10.1136/archdischild-2020-319474](https://dx.doi.org/10.1136/archdischild-2020-319474) (Peer reviewed; First published 5 May 2020)**

This paper considers data from several different countries related to children and the transmission of SARS-CoV-2. The authors consider the important implications of asymptomatic but potentially infectious children on the wider community. They cite studies in Iceland and Italy where no children under the age of 10 were found to be positive for SARS-CoV-2. In the Italian study, the children were found to be living with adults who had tested positive. Data from Japan and China also showed a lower attack rate in children. A case study in the French Alps found that a child with COVID-19 failed to transmit it to any other person, despite contact with over a hundred children from different schools and a ski resort. A school-based study in Australia

found that there was no evidence of children infecting teachers. One infected child was presumed to have contracted the virus following contact with two other students and in a separate case it was presumed that the student had been infected by a member of teaching staff. Data from the Netherlands suggests that SARS-CoV-2 is mainly spread between adults and from adult family members to children. The paper concludes that “at the current time, children do not appear to be super spreaders”.

**Viner, R.M., Mytton, O.T., Bonell, C., Melendez-Torres, G.J., Ward, J.L., Hudson, L., Waddington, C., Thomas, J., Russell, S., van der Klis, F., Panovska-Griffiths, J., Davies, N.G., Booy, R., Eggo, R. (2020) Susceptibility to and transmission of COVID-19 amongst children and adolescents compared with adults: a systematic review and meta-analysis [doi.org/10.1101/2020.05.20.20108126](https://doi.org/10.1101/2020.05.20.20108126) (Preprint, not yet peer reviewed; first posted 24 May 2020)**

The authors examined published and preprint studies and data from national public health websites in order to examine the role that children and young people play in the transmission of SARS-CoV-2 as well as their susceptibility. They looked specifically at contact-tracing and population-screening studies. Their review of household clusters found that 10% were due to a child index case and in a population-based school study that there was minimal transmission by child or teacher index cases. There were conflicting results in large studies, with lower prevalence in children and young people in Iceland, the Netherlands and Spain, but no difference between the prevalence in adults and children in Stockholm, England and municipalities in Switzerland and Germany. The authors present preliminary evidence that children and young people have a lower susceptibility to SARS-CoV-2, with 56% lower odds of being an infected contact. However, there is weak evidence that children and young people play a lesser role in the transmission of the virus at a population level. The study provided no information on the infectivity of children. They conclude that the “role of children and young people in transmission of SARS-CoV-2 is dependent on susceptibility, symptoms, viral load, social contact patterns and behaviour.” Finally, they caution that there are no published studies addressing the mechanism of transmission in children and that the data on viral load in children is extremely limited.

Walger, P., Heininger, U., Knuf, M., Exner, M., Popp, W., Fischbach, T., Trapp, S., Hübner, J., Herr, C., Simon, A., German Society for Hospital Hygiene (DGKH), German Society for Pediatric Infectious Diseases (DGPI), German Academy for Pediatric and Adolescent Medicine (DAK), Society of Hygiene, Environmental and Public Health Sciences (GHUP), and Professional Association of Pediatricians in Germany (bvkj e.V.) (2020) **Kinder und Jugendliche in der CoVid-19-Pandemie: Schulen und Kitas sollen wieder uneingeschränkt geöffnet werden. Der Schutz von Lehrern, Erziehern, Betreuern und Eltern und die allgemeinen Hygieneregeln stehen dem nicht entgegen (Children and adolescents in the CoVid-19 pandemic: Schools and daycare centers are to be opened again without restrictions. The protection of teachers, educators, carers and parents and the general hygiene rules do not conflict with this) GMS Hygiene Infection Control 15 (Doc 11) doi.org/10.3205/dgkh000346** (Peer reviewed: first published 28 May 2020)

Consideration is given to the existing published research to date regarding the transmission of SARS-CoV-2 "showing that children play a less significant role in the spread" of the virus than adults. Reference is made to early research in China showing that children and young people play "a subordinate role" in the transmission of the virus, both to other children but also to adults. The authors stress the importance of protecting teachers, educators and caregivers through social distancing, medical masks, hand hygiene and, when necessary, testing. They also suggest that there is a possibility that the risk of transmission from young people over the age of 15 does not significantly differ from that of adults but conclude that there is currently insufficient evidence to explain the significantly lower rate of contagion in younger children.

Zhu, Y., Bloxham, C.J., Hulme, K.D., Sinclair, J.E., Tong, Z.W.M., Steele, L.E., Noye, E.C., Lu, J., Chew, K.Y., Pickering, J., Gilks, C., Bowen, A.C., Short, K.R. (2020) **Children are unlikely to have been the primary source of household SARS-CoV-2 infections doi.org/10.1101/2020.03.26.20044826** (Preprint, not yet peer reviewed; first posted 30 March 2020)

This paper examines data from China, Singapore, South Korea, Japan and Iran relating to children in order to try and understand the role that children play in the transmission of SARS-CoV-2. Out of 31 household transmission clusters, only 10% were identified as having a child index case, compared with H5N1 where it was 54%. This suggests that children have not played a substantive role in the transmission of SARS-CoV-2 within households. Early

household infection data from Wuhan also suggests that children are more likely to be contact cases, rather than index cases.

## Mitigating measures for music education by Country

### Australia

**Bunbury Cathedral Grammar School, Western Australia**  
[bcgs.wa.edu.au/covid-19-update/](https://bcgs.wa.edu.au/covid-19-update/) (Date unclear)

Australian school website which specifically mentions procedures for music students. The information acknowledges the additional risks for the spread of COVID-19 through some music activities and outlines protocols in place to minimise transmission risks. These include social distancing, no sharing of instruments, music stands or sheet music, cleaning of instruments, emptying of brass spit valves, and the avoidance of fricatives, affricatives and sibilant sounds in singing warm-ups.

### Canada

**Guidance for Music Classes in British Columbia During COVID-19 British Columbia's Music Educators' Association, Coalition for Music Education in British Columbia**  
[bcmusiced.ca/music-resource-room](https://bcmusiced.ca/music-resource-room) (26 June 2020)

The document includes safety recommendations and alternative curriculum delivery models. The authors stress the importance of continuing music education during COVID-19 stating that, "music is a lifeline for thousands of students across our province". They raise the question of safety and quote existing and future research in support of their recommendations. These recommendations include general classroom cleaning, rehearsal spaces, social distancing, instrument hygiene and disinfection, spit key protocols, alternative models of curriculum delivery and suggestions for performance, for example, live streaming without an audience physically present. The specific guidance for choirs is that singers are front facing only, have their sheet music on stands rather than handling it, and maintain a distance of two metres from other singers. Conductors should be 6 metres from the choir or use a face shield and/or mask. Pianos should only be used if required in the music and percussionists could be assigned their own specific instruments. Finally, percussion, pianos and other instruments which remain at school should be sanitised at the end of each day.

**Restoring Safe Services: Manitoba's Pandemic and Economic Roadmap for Recovery** Government of Manitoba [gov.mb.ca/covid19/restoring/phase-two.html](http://gov.mb.ca/covid19/restoring/phase-two.html) (1 June 2020)

This document covers guidance for a variety of businesses, education settings and recreational activities. Schools are currently open for staff and specific educational programmes but classroom learning is suspended. Sports, band and other extracurricular activities are permitted but choirs and musical theatre activities are prohibited, "due to a higher risk of transmission through singing as compared to speaking." The same is true for summer camps.

**Recommendations for School Reopening for Music** The Association of Music Administrators of Manitoba (AMAM), in consultation with the Manitoba Music Educators' Association (MMEA) <https://www.mymmea.ca/news-blog/2020/6/1/recommendations-for-scschool-reopening-for-music-june-1-2020> (1 June 2020)

These organisations represent guitar, band, choral and elementary music educators in Manitoba. They stress the importance of continuing to provide music education as schools begin to reopen. Recommendations are made that music lessons continue in dedicated music rooms, unless shared spaces are still discouraged by public authorities, in which case the music teacher should move between classrooms, giving them extra time in the timetable to accommodate this. There is further guidance relating to equipment, cleaning, hand hygiene and the use of gloves when helping students make adjustments to their instruments such as tuning. Alternative curriculum and teaching methods which require minimal equipment such as body percussion are suggested. Finally, budget implications are considered such as additional instruments, specialised cleaning supplies which do not damage instruments, and a mobile music station for classroom music teachers travelling between classrooms.

**A Framework for The Return to Music Classes in 2020/2021** Ontario Music Educators' Association (OMEA) [omea.on.ca/covid19/](http://omea.on.ca/covid19/) (7 June 2020)

The OMEA COVID-19 Response Committee team was formed in May 2020, to address the impact of COVID-19 on school music programs in Ontario. The framework is based on research and medical advice. Guidance includes setting up a classroom with

6ft by 6ft squares to enable social distancing of two metres per student, specifically so that droplets from speaking have enough space to fall to the floor. Chairs and music stands should be pre-set to avoid unnecessary movement and not shared. Detailed methods of disinfecting instruments are provided as well as a list of cleaning supplies needed for the music classroom. Recommendations are also made regarding the wiping down of chairs, stands, equipment and other surfaces. There are suggestions for alternative teaching and instruction methods and a detailed list of resources for this, covering both primary and secondary school, with internet links.

**COVID-19: Recommendations for School Reopening** Sick Kids Hospital, Toronto [sickkids.ca/PDFs/AboutSickKids/81407-COVID19-Recommendations-for-SchoolReopening-SickKids.pdf](http://sickkids.ca/PDFs/AboutSickKids/81407-COVID19-Recommendations-for-SchoolReopening-SickKids.pdf) (Updated 17 June 2020)

A support and guidance document for general school reopening. The document acknowledges that a return to school will likely increase cases of COVID-19 and places importance on mitigation measures such as testing and contact tracing. There are specific references to a higher level risk involved in choir practices/performances and band practices/performances including woodwind instruments. The suggestions are that instruments should not be shared, that they should be disinfected if sharing cannot be avoided, and that special consideration should be given to room ventilation and the distance between participants.

## Denmark

**COVID-19: Prevention of Contagion** National Board of Health, Denmark [sst.dk/da/Udgivelser/2020/COVID-19-Forebyggelse-af-smittespredning](http://sst.dk/da/Udgivelser/2020/COVID-19-Forebyggelse-af-smittespredning) (14 May 2020; updated 19 June 2020)

The document includes specific guidance for social distancing of two metres for activities "where drops are thrown further than normal speech", such as singing, shouting, lecturing and acting. It also suggests that there should be a two metre distance between the teacher and the front row of the class but that a one metre distance between students is adequate.

## Germany

Mürbe, D., Bischoff, P., Fleischer, M., Gastmeier, P. (2020) **Beurteilung der Ansteckungsgefahr mit SARS-CoV-2- Viren beim Singen (Assessment of the risk of infection with SARS-CoV-2 viruses in singing)** Charite – University Medicine Berlin [audiologie-phoniatrie.charite.de/metast/meldung/artikel/detail/uebertragung\\_von\\_sars\\_cov\\_2\\_viren\\_beim\\_singen/](https://audiologie-phoniatrie.charite.de/metast/meldung/artikel/detail/uebertragung_von_sars_cov_2_viren_beim_singen/) (6 May 2020)

Consideration is given to the risk of aerosol and droplet transmission of SARS-CoV-2 in speaking and singing whilst acknowledging the lack of scientific study in this area. General measures to reduce the risk of infection when singing are then outlined, including hand and respiratory hygiene, social distancing, room size and ventilation, face coverings and splash and spit protection. In addition to these measures, specific guidance for individual lessons also include only allowing two people in the room, choosing the largest possible teaching space, maintaining a distance of at least 3 metres and cleaning high touch surfaces between students.

Firle, C., Jabusch, H., Grell, A., Fernholz, I., Schmidt, A., Steinmetz, A. (2020) **Musizieren während der SARS-CoV2-Pandemie Empfehlungen der Deutschen Gesellschaft für Musikphysiologie und Musikermedizin (DGfMM) zum Infektionsschutz beim Musizieren (Make music during the SARS-CoV-2 pandemic Recommendations of the German Society for Music Physiology and Musicians Medicine (DGfMM) for protection against infection when playing music)** [dgfmm.org/](https://dgfmm.org/) (13 May 2020, updated 26 May 2020)

Recommendations are based on the general recommendations from the Robert Koch Institute and transferred to musical settings. The lack of data related to singing and playing of wind instruments and aerosol transmission is acknowledged. In addition to general mitigation measures such as hand and respiratory hygiene, social distancing and room size and ventilation, specific recommendations are made for instrumental teaching. These include the use of face coverings, limitations on the number of people in a room, minimum social distancing of 1.5 metres, avoiding face-to-face instruction by sitting at a 90° angle, the use of plexiglass screens between student and teacher and cleaning of the room between learners.

**Tenth Ordinance Amending the SARS-CoV-2 Containment Measures Ordinance (SARS-CoV-2-EindmaßnV) The Governing Mayor of Berlin – State Chancellery** [berlin.de/corona/en/measures/directive/](https://berlin.de/corona/en/measures/directive/) (9 June 2020)

Part 4 of this ordinance specifically mentions music education. Whilst music schools are permitted to open, they are only allowed to provide individual lessons and group lessons of up to five students. Singing, woodwind and brass lessons are only allowed as individual lessons. The ordinance states that, "Special precautions must be taken for this and for teaching in the field of the performing arts." But does not specify what these are.

## The Netherlands

**Branch-specific additional guidelines for the Protocol Sector for Cultural Education and Participation** **Cultuurconnectie** [cultuurconnectie.nl/actueel/nieuws/covid-19-pandemie/branchespecifiek/protocol](https://cultuurconnectie.nl/actueel/nieuws/covid-19-pandemie/branchespecifiek/protocol) (Date unclear – the information may be updated due to a government announcement on 24 June regarding relaxation of general measures commencing on 1 July 2020)

Recommendations created by a working group of arts and education organisations in the Netherlands. Teachers are asked to contact the students and their parents/carers the day before the scheduled lesson to check on their current health situation. Where there is any concern, the lesson should take place online. Further guidance includes hand hygiene, social distancing of two metres for singing and wind instruments and 1.5 metres for other instruments, screens for singing and wind lessons, the use of gloves for handling reeds and mouthpieces of a student's instrument, spit valve emptying protocols and cleaning routines, including furniture. Children up to 6 years old may have one parent or carer present in the lesson. For ensembles, choirs and wind players, groups are advised not to rehearse together until there is further understanding of the risks of transmission. For musical theatre lessons and rehearsals, the guidance is currently not to sing or shout, and to rehearse either outdoors or in a large, well-ventilated room.

## Norway

**Infection Protection Guidance for Culture Schools**  
**Norwegian Cultural Schools Council** [kulturskoleradet.no/smittevernveileder-kulturskole](https://kulturskoleradet.no/smittevernveileder-kulturskole) (12 May 2020)

Detailed guidance for performing arts schools covering social distancing, room capacity and setup, ventilation and handling of instruments. There are also recommendations for safe teacher intervention such as string tuning, as well as safe emptying of brass spit valves.

**Infection control guidelines for childcare centres, schools and after school clubs** Directorate for Education and Training, Norway [udir.no/kvalitet-og-kompetanse/sikkerhet-og-beredskap/informasjon-om-koronaviruset/smittevernveileder/](https://udir.no/kvalitet-og-kompetanse/sikkerhet-og-beredskap/informasjon-om-koronaviruset/smittevernveileder/) (29 May 2020)

Guidance for primary and high schools where music is specifically mentioned. Norway is operating a traffic light system of action levels. The guidance for music is the same for both red and yellow levels. The current level is yellow. Wind instruments are not allowed to be shared between multiple students and handheld instruments and keyboards must be cleaned after use. When the action level moves to green, teaching can take place as normal.

**Clarifications for the band and drill** Norwegian Broadcasting Corporation and the Norwegian Music Corps Association [korpssnett.no/nyheter/gjennomforingovelsler-30.04](https://korpssnett.no/nyheter/gjennomforingovelsler-30.04) (30 April, 2020, updated 10 June 2020)

These recommendations for safe rehearsals include not replacing reeds during rehearsals, guidance for emptying brass spit valves and playing standing rather than marching. Social distancing recommendations are a minimum of one metre, with a preference for two metres in all directions, including when marching. There is also guidance for staggered arrivals to rehearsals, vacating rooms between different groups, and cleaning chairs before and after use.

**Veileder: Smittevern for musikkøvelser (Infection protection for music activities such as bands, orchestras, choirs, bands and other music groups)** The Norwegian Music Council [musikk.no/nmr/om-oss/medlemsorganisasjoner/ressurser-for-medlemmer/veileder-smittevern-for-musikkovelsler](https://musikk.no/nmr/om-oss/medlemsorganisasjoner/ressurser-for-medlemmer/veileder-smittevern-for-musikkovelsler) (22 April 2020; updated 15 June 2020)

Detailed guidance for rehearsals and performances including room capacity, room setup and recommended minimum room sizes. There are in-depth considerations given to sharing of instruments, associated equipment such as bows and resins and also sound systems, mixing desks and microphones. For marching bands, specific 'buffer zones' of 3m<sup>2</sup> per player are recommended with a 1.5 metres distance between side by side players and a 2 metres distance between each row.

## Republic of Ireland

**Advice to Government in relation to realigning the Public Health Framework Approach to reducing restrictive measures into two final Phases** National Public Health Emergency Team <https://www.gov.ie/en/publication/d06271-easing-the-covid-19-restrictions-on-29-june-phase-3/> (18 June 2020)

The Irish public health framework for easing restrictions, commencing on 28 June (Phase 3) and 20 July (Phase 4). The document specifically addresses group singing, choirs and playing woodwind and brass instruments in a group, stating that there is potentially an increased risk of infection due to increased droplet or aerosol transmission. There is guidance on strict social distancing, limiting indoor musical activity, room ventilation and instrument cleaning. It is also suggested that singers and woodwind and brass musicians should consider protective equipment such as instrument covers, screens and face coverings.

## Scotland

**Additional Guidance on Managing Risks of Covid 19 for Instrumental Music Teachers The Educational Institute of Scotland (Education Union)** <https://www.eis.org.uk/Coronavirus/IMTAdditionalGuidance> (Date unclear – May/June 2020)

Supplementary, specific guidance for peripatetic instrumental music teachers in addition to general advice to members. It acknowledges the increased potential droplet or air-borne transmission during voice and instrumental lessons and provides guidance on the allocation and cleaning of teaching rooms, social distancing, sharing and cleaning of instruments, choral and ensemble work, health and travel.

## Singapore

**Sustaining the Arts During Covid 19: Phase 2 of re-opening for arts and culture stakeholders National Arts Singapore** [nac.gov.sg/whatwedo/support/sustaining-the-arts-during-covid-19/Arts-and-Culture-Sector-Advisories.html](http://nac.gov.sg/whatwedo/support/sustaining-the-arts-during-covid-19/Arts-and-Culture-Sector-Advisories.html) (15 June 2020 – for implication from 18 June 2020, 23:59hrs)

Guidance for ‘training classes’ specifically states that they may resume from 19 June, “except for singing, voice training, playing of wind or brass instruments or other instruments that require intentional expulsion of air due to the higher health risks involved.”. This statement is reiterated later in the document but with the inclusion of ‘voice projection’ and outlines the potentially high risk of droplet transmission. These activities are prohibited until further notice.

## United States

**Considerations for Schools US Centre for Disease Control** [cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-childcare.html](https://cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-childcare.html) (Updated 21 April 2020)

Guidance for childcare settings which suggests keeping children in separate groups for activities such as art, music and exercise.

[cdc.gov/coronavirus/2019-ncov/community/schoolschildcare/schools.html](https://cdc.gov/coronavirus/2019-ncov/community/schoolschildcare/schools.html) (updated 19 May 2020)

Supplementary guidance to state and local laws for schools, including wearing of face masks for staff and students, classroom layout, social distancing, cleaning regimes and ventilation.

**The CBDNA Covid-19 Response Committee Report College Band Directors National Association** [cbdna.org/covid19/](http://cbdna.org/covid19/) (21 May 2020)

This report focuses on large ensemble instruction in college and university band programs only. Suggestions are made regarding outdoor rehearsals and/or performances, no shared sheet music or music stands, not sharing chairs by standing to play, and not sharing instruments. Looking at smaller chamber music repertoire is also suggested. Further guidance is given related to teaching and learning and includes consideration of a potential lack of access to instruments, specialist equipment and practice areas. The report also addresses the potential need to modify practices such as emptying spit valves and removal of slides but does not specify any methods for doing so.

**Recommendations for the Practical, Fair, and Safe Reopening of Public Schools K-12 in the State of Texas Cook Children's Health Care System** [cookchildrens.org/coronavirus/action/Pages/Safe-Reopening.aspx#\\_edn5](http://cookchildrens.org/coronavirus/action/Pages/Safe-Reopening.aspx#_edn5) (Updated 9 June 2020)

Recommendations from a not-for-profit organisation of eight medical companies. Addresses musical activities in communities where the transmission of Covid-19 is sustained. The advice includes suspending choir rehearsals and indoor woodwind and brass rehearsals until more information about transmission is available, using relevant social distancing for outdoor woodwind and brass rehearsals and wearing face coverings when not performing or when unable to maintain social distancing.

**Guidance for a return to high school marching band National Federation of State High School Associations (NFHS) Music Committee Sports Medicine Advisory Committee (SMAC) <https://www.nfhs.org/articles/nfhs-releases-guidelines-for-return-to-high-school-marching-band-activities/> (9 June 2020)**

This guidance covers all three phases outlined by the White House in their "Opening Up America" document whilst acknowledging that some state and regional advice may vary. It includes detailed advice on pre-rehearsal health screening, limiting group sizes, social distancing, rehearsing outdoors, sharing of instruments and equipment, cleaning schedules and face coverings. There is further advice on social distancing for competitions and limiting of essential and nonessential attendees.

**Covid-19 Response Committee Report American Choral Directors Association [acda.org/resources-for-choral-professionals-during-a-pandemic/](https://www.acda.org/resources-for-choral-professionals-during-a-pandemic/) (15 June 2020)**

This document presents a series of instructional practices for school, college and community choirs whilst acknowledging the need for more empirical research. The suggestions consider face-to-face, blended and distance learning scenarios. Face-to-face guidance for younger school students includes smaller groupings, non-singing musical activities, the use of outdoor space for rehearsals, no sharing of sheet music and social distancing. The guidance for high school students includes the use of larger rooms for rehearsals, social distancing, the use of acoustic shields between rows and/or between individual singers, the use of humming rather than open mouth singing, no sharing or storing of equipment and alternative performance opportunities such as live-streaming. For college students, the guidance suggests dividing large choirs into smaller ensembles of 4 to 16 singers across the voice part and alternative campus spaces for rehearsals including outdoor spaces. Further consideration is also given to private practice spaces.

**Georgia Music Educators Association**

A series of guides on teaching classroom music, guitar, choirs and instrumental ensembles. Most refer to following the most up to date scientific research, due in July 2020 (most likely the University of Colorado at Boulder study led by Dr S Miller).

**[gmea.org/blog/2020/6/15/gmea-return-to-marching-guidelines-proposal](https://gmea.org/blog/2020/6/15/gmea-return-to-marching-guidelines-proposal) (15 June 2020)**

**[gmea.org/blog/2020/6/17/guidance-for-beginningensembles-during-covid-19](https://gmea.org/blog/2020/6/17/guidance-for-beginningensembles-during-covid-19)**

**[gmea.org/blog/2020/6/17/guidance-for-band-duringcovid-19](https://gmea.org/blog/2020/6/17/guidance-for-band-duringcovid-19)**

**[gmea.org/blog/2020/6/17/guidance-for-elementary-music-during-covid-19](https://gmea.org/blog/2020/6/17/guidance-for-elementary-music-during-covid-19)**

**[gmea.org/blog/2020/6/17/guidance-for-chorus-duringcovid-19](https://gmea.org/blog/2020/6/17/guidance-for-chorus-duringcovid-19)**

**[gmea.org/blog/2020/6/17/guidance-for-orchestra-duringcovid-19](https://gmea.org/blog/2020/6/17/guidance-for-orchestra-duringcovid-19) (All 17 June 2020)**

**Fall 2020 Guidance for Music Education National Federation of State High School Associations and the National Association for Music Education [nafme.org/my-classroom/fall-2020-guidance-music-education-from-nfhs-nafme/](https://nafme.org/my-classroom/fall-2020-guidance-music-education-from-nfhs-nafme/) (19 June 2020)**

This document provides practical guidance for PreK-12 schools for meaningful music instruction during the Covid-19 pandemic. It also clearly states that it is not meant to replace CDC, state or local public health guidance and that there is no expectation for schools to follow every recommendation. Reference is made to the University of Colorado study regarding aerosol distribution and suggests that no indoor ensemble singing takes place until the results of the study are known and that music classrooms should practice social distancing in the forms of smaller groups and chamber music. Detailed guidance is then given for face-to-face instrumental teaching, classroom music teachers (particularly the challenges for elementary teachers) and the budget implications as a result of social distancing, for example additional sheet music and instruments.

**Trobaugh, B., Gibson, L., Williams, R., Averwater, N. (2020)**  
**Making music together: A safe return to the classroom**  
[musicedconsultants.net/reopening-recommendations.html](https://musicedconsultants.net/reopening-recommendations.html)  
*(Updated 20 June 2020)*

Document by local music educators described as 'a collection of considerations related to teaching instrumental music education whilst also preventing the spread of COVID-19'. It gives detailed suggestions regarding cleaning (classrooms and instruments), classroom layout, pre-rehearsal screening, general hygiene measures and maintaining healthy environments, including ventilation.

## Additional sources

**UNESCO (2020) COVID-19 Impact on Education**  
[en.unesco.org/covid19/educationresponse](https://en.unesco.org/covid19/educationresponse)

**Interdisciplinary Task and Finish Group on the Role of Children in Transmission Modelling and behavioural science responses to scenarios for relaxing school closures**  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/886994/s0257-sage-sub-group-modelling-behavioural-science-relaxing-school-closures-sage30.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/886994/s0257-sage-sub-group-modelling-behavioural-science-relaxing-school-closures-sage30.pdf)

**Huffington Post, 29 June 2020 Exclusive: What Schools Will Be Told To Do In September So All Pupils Can Return**  
[huffingtonpost.co.uk/entry/schoolreopening-whole-year-bubbles-full-guidance-covid\\_uk\\_5ef9dd4ac5b6ca97091288e4](https://huffingtonpost.co.uk/entry/schoolreopening-whole-year-bubbles-full-guidance-covid_uk_5ef9dd4ac5b6ca97091288e4)

**Universities UK Most universities will teach in-person this autumn (2020)**  
[universitiesuk.ac.uk/news/Pages/Mostuniversities-will-teach-in-person-this-autumn.aspx](https://universitiesuk.ac.uk/news/Pages/Mostuniversities-will-teach-in-person-this-autumn.aspx)

**Royal College of Music Coronavirus (Covid-19): advice and updates (2020)**  
[rcm.ac.uk/coronavirus/](https://rcm.ac.uk/coronavirus/)

# Updated literature up until 21 August 2020

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## Covid-19 transmission, children and young people

**Blumfield, E., Levin, T.L. (2020) COVID-19 in pediatric patients: a case series from the Bronx, NY Pediatric Radiology (2020) <https://dx.doi.org/10.1007%2Fs00247-020-04782-2> (Peer reviewed; published 29 July)**

A US study of 19 children and young people aged 2 months to 18 years who were admitted to hospital with between February and May 2020. 18 of the 19 cases tested positive for COVID-19 with the remaining case of a 5 year old boy testing negative but subsequently diagnosed with multisystemic inflammation in children syndrome (MIS-C). 10 subjects were male, 9 were female and the median age was 8. Comorbidities were present in 12 of the children with some children having more than one comorbidity. 14 children required intensive care, five developed acute heart inflammation and two children died. Of the five children who developed heart problems, one had underlying hypertension and obesity whereas the other four were previously healthy. These four children were subsequently diagnosed with MIS-C.

**Dub, T., Erra, E., Hagberg, L., Sarvikivi, E., Virta, C., Jarvinen, A., Osterlund, P., Ikonen, N., Haveri, A., Melin, M., Lukkarinen, T.J., Nohynek, H. (2020) Transmission of SARS-CoV-2 following exposure in school settings: experience from two Helsinki area exposure incidents <https://doi.org/10.1101/2020.07.20.20156018> (Preprint, not yet peer reviewed; first posted 30 July)**

This is a retrospective study of two school exposure incidents in the Helsinki area where researchers recruited close school contacts and families of the index cases – a pupil and a member of school staff. They found that when the index case was a child (12 years old), no school transmission was identified. When the index case was an adult, there was transmission with a 16 per cent attack rate. A further three cases were considered but discounted as other transmission chains were plausible. Overall, the incidence of COVID-19 infections in children following school related exposure was limited as well as secondary transmission

within their household. The study concludes that “it is likely that transmission from children to adults is limited” and “the outcome is most likely a result of several factors including the age of the index case, the degree of symptoms and the type of contact.”

**Havers, F.P., Reed, C., Lim, T., Montgomery, J.M., Klena, J.D., Hall, A.J., Fry, A.M., Cannon, D.L., Chiang, C., Gibbons, A., Krapivunaya, I., Morales-Betoulle, M., Roguski, K., Rasheed, A.U., Freeman, B., Lester, S., Mills, L., Carroll, D.S., Owen, S.M., Johnson, J.A., Semenova, V., Blackmore, C., Blog, D., Chai, S.J., Dunn, A., Hand, J., Jain, S., Lindquist, S., Lynfield, R., Pritchard, S., Sokol, T., Sosa, L., Turabelidze, G., Watkins, S.M., Wiesman, J., Williams, R.W., Yendell, S., Schiffer, J., Thornburg, N.J. (2020) Seroprevalence of Antibodies to SARS-CoV-2 in 10 Sites in the United States, 23 March – 12 May 2020 *JAMA Intern Med.*2020 <https://doi.org/10.1001/jamainternmed.2020.4130> (Peer reviewed; published online 21 July)**

This study looked at the proportion of people who had detectable SARS-CoV-2 antibodies in 10 areas in the United States between 23 March and 12 May 2020. Serum samples from 16,025 people were tested. The smallest number of samples (1205; 7.5 per cent) were for the 0 – 18 years age group and the largest (5845; 36.5 per cent) for those aged 65 or older. The findings showed that in five areas (Western Washington state, NYC metro area, Louisiana, Missouri and Connecticut) the 0 – 18 age group had the lowest percentage of cases. The same age group had the highest percentage of cases in the San Francisco Bay and Minneapolis-St Paul-St Cloud areas, the second highest in South Florida, and the third highest in the Philadelphia metro area.

**Heald-Sargent, T., Muller, W.J., Zheng, X., Rippe, J., Patel, A.M. and Kociolek, L.K (2020) Age-Related Differences in Nasopharyngeal Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Levels in Patients With Mild to Moderate Coronavirus Disease 2019 (COVID-19). JAMA Pediatrics <https://www.x-mol.com/paper/1288894522683211776> (Peer reviewed; published online 30 July)**

This study examined the viral nucleic acid (rather than infectious virus) in 145 patients who had tested positive for SARS-CoV-2 in Chicago, Illinois between 23 March and 27 April 2020. The cohort consisted of 46 children under the age of 5, 51 children aged 5 to 17 and 48 adults aged 18 to 65. The results suggest that children younger than 5 years with mild to moderate COVID-19 have high amounts of SARS-CoV-2 viral ribonucleic acid (RNA) in their nasopharynx compared with older children and adults and that replication of SARS-CoV-2 in older children leads to similar levels of viral nucleic acid as adults. The researchers conclude that “young children can potentially be important drivers of SARS-CoV-2 spread in the general population, as has been demonstrated with respiratory syncytial virus, where children with high viral loads are more likely to transmit.”

**Kim J., Choe Y.J., Lee J., Park, Y.J., Park, O., Han, M.S., Kim, J., Choi, E.H. (2020) Role of children in household transmission of COVID-19 Archives of Disease in Childhood <https://doi.org/10.1136/archdischild-2020-319910> (Peer reviewed; published online 7 August)**

A retrospective observational study of all reported paediatric COVID-19 cases under the age of 18 in South Korea between 20 January and 6 April. The purpose of the study to describe children’s role in household transmission. The authors point out that this is challenging due to the low numbers of confirmed cases in children and the associated outbreak control measures such as school closures. 107 paediatric index cases and 248 household members were included in the study. 41 household members tested positive for COVID-19 and were determined to have had the same exposure as the paediatric index case. The authors state that, to their knowledge, this is the first study which exclusively examined the household transmission risk from children as index cases. They caution that the low transmission rate from children could be as a result of “intensive outbreak control measures” which were in place in South Korean since February and that it is a “snapshot of disease dynamics” at a time of school closures. However, they suggest that the research shows children are mainly infected within households with limited transmission to household members.

**Ladhani, S.N., Amin-Chowdhury, Z., Davies, H.G., Aiano, F., Hayden, I., Lacy, J., Sinnathamby, M., de Lusignan, S., Demirjian, A., Whittaker, H., Andrews, N., Zambon, M., Hopkins, S., Ramsay, M.E. (2020) COVID-19 in children: analysis of the first pandemic peak in England Archives of Disease in Childhood Published <https://doi.org/10.1136/archdischild-2020-320042> (Peer reviewed; first published 12 August)**

The first confirmed cases of COVID-19 in children in England were reported on 29 February 2020. Cases started to increase during the second week of March and peaked on 11 April before gradually declining, which corresponded to the trends which had been seen in adult cases. 1.1 per cent of children tested positive compared to 19.1 per cent – 34.9 per cent of adults. The median age of children with confirmed COVID-19 was 5.9 years. In cases where individuals presented to participating general practices, children rarely tested positive at any time, especially children aged 3 – 9 years old, where 0.6 per cent were found to be positive. Of the 8 deaths in children with confirmed COVID-19, three children had multiple co-morbidities, and the virus was found to be an indirect contributor in four cases. The authors state that their study adds to a growing body of research on the limited role of children with low rates of confirmed cases being identified, especially among preschool and primary school-aged children, even at the pandemic’s peak. Their initial findings suggest that around half of confirmed cases were hospitalised compared to 33 per cent in the USA and 67 per cent in Italy. However, they conclude that the questions regarding asymptomatic children and community transmission still remain unanswered.

**Macartney, K., Quinn, H.E., Pilsbury, A.J., Koirala, A., Deng, L., Winkler, N., Katelaris, A.L., O’Sullivan, M.V.N., Dalton, C., Wood, N. and the NSW COVID-19 Schools Study Team (2020) Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study The Lancet Child Adolescent Health [https://doi.org/10.1016/S2352-4642\(20\)30251-0](https://doi.org/10.1016/S2352-4642(20)30251-0) (Peer reviewed – in press; published online 3 August)**

An Australian study of SARS-CoV-2 transmission among children and staff in 15 schools and 10 early years settings in New South Wales between 25 January and 10 April 2020. 12 children and 15 staff were identified as primary cases. 8 of the children were in secondary schools, 1 in primary school and 3 in early years. Staff were the primary cases in 4 of 10 secondary schools, 4 of 5 primary schools and 7 of 10 early years settings. The source

was unknown for 12 of the 27 cases, but where it was known it was usually a member of the household, especially for children. Overall, the reported incidence of SARS-CoV-2 in an educational setting was low – 25 out of 7700 establishments. Secondary transmission only occurred in 3 out of 15 schools and 1 of 10 early years settings. Only one early years setting had a sustained outbreak following the infection in a staff member. The authors conclude that the continued opening of schools, with reduced in-person attendance but high attendance rates, did not appear to contribute significantly to transmission of SARS-CoV-2. They also state that “transmission chains between staff and from staff to children were apparent. Child to child or child to staff transmission appeared unlikely to have occurred but could not be excluded.

**Maltezou, H.C., Vorou, R., Papadima, K., Kossyvakis, A., Spanakis, N., Gioula, G., Exindari, M., Metallidis, S., Lourida, A.N., Raftopoulos, V., Froukala, E., Martinez Gonzalez, B., Mitsianis, A., Roilides, E., Mentis, A., Tsakris, A. and Papa, A. (2020) Transmission dynamics of SARS CoV 2 within families with children in Greece: a study of 23 clusters Journal of Medical Virology Accepted Author Manuscript <https://doi.org/10.1002/jmv.26394> (Peer reviewed, accepted for publication; published online 7 August)**

A study of 23 family clusters of COVID-19 in Greece involving 66 adults and 43 children. In total, 68 household members (62.4 per cent) tested positive. In 21 clusters (91.3 per cent) an adult member of the household was the index case. Transmission from an adult to a child occurred in 19 clusters and/or from an adult to an adult in 12 clusters. The study found no evidence of transmission from child to adult or child to child. Children were more likely to be asymptomatic and adults were more likely to develop ‘a severe clinical course’ compared to children. It was also found that infected children were significantly more likely to have a low viral load compared to adults who were more likely to have a moderate viral load. The authors conclude that, “while children become infected by SARS CoV 2, they do not appear to transmit infection to others.”

**Merckx, J., Labrecque, J.A., Kaufman, J.S. (2020) Transmission of SARS-CoV-2 by Children Deutsches Ärzteblatt International 117 (33-34): 553–60 <https://doi.org/10.3238/arztebl.2020.0553> (Peer reviewed; published 21 July)**

A review of the evidence about children and transmission of SARS-CoV-2. The authors acknowledge that children differ from adults in contact type, rate and duration as well as interacting mostly with other children. They state that, “published household transmission studies show that children are rarely the index case and investigations of cases and clusters suggest that children with SARS-CoV-2 seldom cause secondary cases.”, quoting studies from Switzerland and Israel. They also look at data from countries where there were no school closures, or from before school closures where there was little evidence of major transmission into the community, such as Australia, France and Ireland. Overall, they conclude that although the evidence is limited, school re-openings have not contributed to transmission spikes in low transmission countries.

**Munro, A.P.S., Faust, S.N., (2020) Addendum to: Children are not COVID-19 super spreaders: time to go back to school Archives of Disease in Childhood <http://dx.doi.org/10.1136/archdischild-2020-319908> (Peer reviewed; first published 20 July)**

An update to the original article in light of additional studies. The authors quote studies which have found lower attack rates in children with children infected at around half the rate of adults within the same household. They point out that although suggestions have been made that school closures have protected children from transmission, there had been significant community transmission prior to schools closing and transmission had then occurred within households. They also include research from Iceland where schools remained open for young children, and The Netherlands which showed extremely low levels of child-to-child or child-to-adult transmission. The majority of transmission occurred between adults. Finally, the authors refer to a pre-print study in French primary schools which suggested that pupils were more likely to be infected at home and that there was no evidence of spread within schools. However, in high school settings there were high positivity levels in pupils aged 14 and above.

**Park, Y.J., Choe, Y.J., Park, O., Park, S.Y., Kim, Y.M., Kim, J., Kweon, S., Woo, Y., Gwack, J., Kim, S.S., Lee, J., Hyun, J., Rhy, B., Jang, Y.S., Kim, H., Shin, S.H., Yi, S., Lee, S., Kim, H.K., Lee, H., Jin, Y., Park, E., Choi, S.W., Kim, M., Song, J., Choi, S.W., Kim, D., Jeon, B., Yoo, H., Jeong, E.K. (2020) Contact Tracing during Coronavirus Disease Outbreak, South Korea, 2020 *Emerging Infectious Diseases* 26(10) <https://doi.org/10.3201/eid2610.201315> (Early release article; first published online 16 July)**

This South Korean study analysed over 59,000 contacts of 5706 COVID-19 positive index patients between 20 January and 27 March 2020. The researchers looked at household and non-household contacts. Of 10,592 household contacts, 11.8 per cent had COVID-19, and of the 48,481 non-household contacts, 1.9 per cent had COVID-19. The study found the highest COVID-19 rate (18.6 per cent) for household contacts in school-aged children, and the lowest (5.3 per cent) for household contacts of children aged 0-9 years old. These figures occurred in the middle of school closures and the researchers hypothesise that these children may have interacted with each other although acknowledge that they do not have any data to support this. They also could not determine the direction of transmission. 0.5 per cent of 0 – 9 year olds and 2.2 per cent of 10 – 19 year olds were index patients, which were the lowest figures of all the age groups. Whilst 18.6 per cent of positive contacts for 10 – 19 year olds were identified, the figure for non-household contacts was 0.95 per cent.

**Posfay-Barbe, K.M., Wagner, N., Gauthey, M., Moussaoui, D., Loevy, N., Diana, A., L’Huillier, A.G. (2020) COVID-19 in Children and the Dynamics of Infection in Families *Pediatrics* 146 (2) <https://doi.org/10.1542/peds.2020-1576> (Peer reviewed; published 1 August)**

A Swiss study examining the first paediatric cases of COVID-19 in Geneva and the dynamics of their family clusters. Forty children (0.9 per cent) under the age of 16 with SARS-CoV-2 were identified from 4310 patients between 10 March and 10 April 2020. In 31/39 cases (79 per cent) an adult in the household was suspected or confirmed to have COVID-19 before the child developed symptoms. The figure for households where the child was the index case was 8 per cent (3/39 cases). They also found that 85 per cent (75/88) of adult household contacts developed symptoms at some point compared to 43% (10/23) of child household contacts. The researchers acknowledge that the study “cannot confirm that child to adult transmission occurred.”

**Stein-Zamir, C., Abramson, N., Shoob, H., Libal, E., Bitan, M., Cardash, T., Cayam, R., Miskin, I. (2020) A large COVID-19 outbreak in a high school 10 days after schools’ reopening, Israel, May 2020 *Eurosurveillance* 25 (29) <https://doi.org/10.2807/1560-7917.ES.2020.25.29.2001352> (Peer reviewed; published 23 July)**

This study focuses on a major outbreak of COVID-19 in an Israeli high school, ten days after schools in the country fully reopened on 17 May 2020. The two initial but unrelated cases on 26 and 27 May resulted in 260 further infections of students, staff, relatives and friends including siblings attending other schools, participants in extracurricular activities, parents of students and family members of school staff. Within the school community, 153 students and 25 staff members tested positive for COVID-19. The source of both initial infections was unknown and the two pupils were in different year groups. The highest outbreak was in the 9th grade with 20 cases in one class and 13 cases in two other classes. There were an additional 14 cases in one 7th grade class. Of the infected teachers, four had taught all four of these classes, two taught three of them and one taught two of them. The overall mean age of confirmed cases in students was 15 years and of school staff 40 years. An environmental school inspection found that there were 35 – 38 students per class with less than the standard 1.5 square metres per student. The outbreak also took hold during an extreme heatwave with continuous air conditioning and an exemption from wearing facemasks which may have promoted the infection.

**Riley, S., Ainslie, K.E.C., Eales, O., Jeffrey, B., Walters, C.E., Atchison, C.J., Diggle, P.J., Ashby, D., Donnelly, C.A., Cooke, G., Barclay, W., Ward, H., Taylor, G, Darzi, A., Elliott, P. (2020) Community prevalence of SARS-CoV-2 virus in England during May 2020: REACT study <https://doi.org/10.1101/2020.07.10.20150524> (Preprint, not yet peer reviewed; 11 July 2020)**

This study found 159 positive SARS-CoV-2 tests (0.13 per cent) from 120,610 self-administered nose and throat swabs between 1 May and 1 June 2020. Of these 150 positive cases, 17 (11 per cent) were children aged 5 – 12 years old, 11 (7 per cent) were children aged 13 – 17 years old. The highest number of cases (28; 18 per cent) was found in adults aged 45 – 54.

**Sarangi, B., Reddy, V.S., Oswal, J.S., Malshe, N., Patil, A., Chakraborty, M., Lalwani, S. (2020) Epidemiological and Clinical Characteristics of COVID-19 in Indian Children in the Initial Phase of the Pandemic Indian Pediatrics <https://www.indianpediatrics.net/COVID29.03.2020/RB-00218.pdf> (Preprint, peer reviewed; 28 July)**

A study from India of 50 children who had tested positive for SARS-CoV-2 out of 178 children who had presented with possible infection. The study took place between 1 April 2020 and 20 May 2020 and included children aged between 2 and 12 years of age, with the median age being 6. 45 children (90 per cent) had positive household contacts and 33 (66 per cent) lived in overcrowded homes. The majority of children (56 per cent) came from upper lower socioeconomic backgrounds. There were no deaths. The researchers conclude that there is a higher incidence of the virus in lower socioeconomic groups, that most children lived in a household with a positive contact and that the disease is milder in most children.

**Torres, J.P., Piñera, C., De La Maza, V., Lagomarcino, A.J., Simian, D., Torres, B., Urquidi, C., Valenzuela, M.T., O’Ryan, M. (2020) SARS-CoV-2 antibody prevalence in blood in a large school community subject to a Covid-19 outbreak: a cross-sectional study Clinical Infectious Diseases <https://doi.org/10.1093/cid/ciaa955> (Peer reviewed; published 10 July)**

A study of an outbreak of SARS-CoV-2 in a large school community in Chile and the role that staff and students played in it. 52 cases were identified on 12 March 2020 and the school closed the next day with the community also being placed in quarantine. The study used self-administered antibody tests to explore the dynamics of transmission. 1009 students (38 per cent of the student body) and 235 staff (74 per cent of all school staff) were included in the analysis. The positive antibody test rates were 9.9 per cent for students and 16.6 per cent for staff. The authors point out that these rates are higher than reported community settings which are about 5%. Among the students testing positive, the rates were higher for younger children and pre-high school students. In adults, the rates were higher among teaching staff compared to non-teaching staff. The authors suggest that the higher positivity rates among younger children was most likely due to the index case being a preschool child. They hypothesise that adults were mainly infected through adult-to-adult contact and that students were mostly likely infected by adults (either a teacher or parent). They conclude

that when reopening schools in areas of low community transmission, the focus should be on avoiding new cases among teachers. They recommend maximising the distance between people, reducing the number of students and hours within classrooms, limiting group activities and “rapid identification and isolation of symptomatic cases”.

## Mitigating Measures for Music Education by Country (Updated guidance)

### Australia

**Bunbury Cathedral Grammar School, Western Australia <https://www.bcgs.wa.edu.au/covid-19-update/> (Easing of restrictions effective 29 June 2020)**

Music ensembles have resumed practice with protocols in place including handwashing, cleaning of instruments in common use such as pianos, hand sanitiser provision, physical distancing of 2m<sup>2</sup> per person, no sharing of sheet music and applying local rules for gatherings to rehearsals and performances.

### Canada

**Restoring Safe Schools: 13 August – School Settings Practice Guidance and Protocols Government of Manitoba <https://www.gov.mb.ca/covid19/restoring/rss-practice-guidance.html> (13 August)**

Updated, school-specific guidance for September 2020 including physical distancing, good hygiene practices and the optional wearing of masks. Schools are instructed to carefully assess their ability to continue with choral and music extracurricular activities. For choir and band practices, room ventilation and the distance between performers should be considered. Instruments should not be shared. Schools may consider cancelling choral and wind group activities for the first term until further evidence regarding risks is available. Schools who wish to continue must follow Manitoba’s Guidelines for Vocalists and Instrumentalist available here: <https://www.gov.mb.ca/covid19/restoring/music-guidelines.html>

**A Framework for The Return to Music Classes in 2020/2021 Ontario Music Educators' Association** [https://www.omea.on.ca/wp-content/uploads/2020/08/Framework-for-Music-Classes-During-Covid-19\\_v4.pdf](https://www.omea.on.ca/wp-content/uploads/2020/08/Framework-for-Music-Classes-During-Covid-19_v4.pdf) (Version 4, updated 11 August)

The Ontario Ministry of Education provided specific guidance for music education in its Guidance to reopening Ontario's Schools (published July 30th, updated 13 August). The guidance states that "most overall expectations for the Music strand can be met without the use of instruments in both the elementary and secondary Arts curriculum". It suggests a variety of delivery options for music including fully distanced learning, in-person teaching in larger spaces or with restricted types of instruments, or in-person teaching with no live performances. Temporary recommendations for education boards include pausing choir and band practices and performances (unless virtual) and pausing face-to-face instruction for wind, brass and singing.

**COVID-19 guidance for schools Kindergarten to Grade 12 Government of Canada** <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/guidance-schools-childcare-programs.html> (Last updated 12 August)

Canadian Government guidance for school administrators from kindergarten to grade 12 and local public health authorities. Schools choosing to resume activities involving wind and brass instruments must carry out a thorough risk assessment and consult with their local public health authority. Mitigation measures include physical distancing, not sharing instruments, mouthpieces, reeds or other accessories, cleaning of spit valves at least 2 metres away from others. For singing and choirs, the same risk assessment requirements are in place and mitigation measures include signing outdoors, social distancing of at least 2 metres (more if possible), choir formation to avoid face to face singing, fewer singers and grouping members of the same household together so they can distance from others.

**COVID-19: Guidance for School Reopening Sick Kids Hospital, Toronto** <https://www.sickkids.ca/PDFs/About-SickKids/81407-COVID19-Recommendations-for-School-Reopening-SickKids.pdf> (Updated 29th July)

Updated guidance document for general school reopening. The document now recommends cancelling choir practices/performances and band practices/performances involving wind instruments for the immediate future. When allowed to safely resume, it is recommended that instruments should not be shared between students.

## Germany

**Third Ordinance Amending the SARS-CoV-2 Infection Protection Ordinance The Governing Mayor of Berlin – State Chancellery** <https://www.berlin.de/corona/en/measures/directive/> (Updated 4 August)

This updated guidance no longer makes reference to music education. Singing together in 'closed rooms' is only allowed if guidelines from the Senate Department for hygiene and infection protection are followed.

## The Netherlands

**Branch-specific additional guidelines for the Protocol Sector for Cultural Education Cultuurconnectie** <https://www.cultuurconnectie.nl/actueel/nieuws/covid-19-pandemie/branchespecifiek/protocollen-per-branche-discipline> (Updated 3rd July)

Updated recommendations created by a working group of arts and education organisations in the Netherlands. Guidance for individual lessons remains the same. For ensembles, social distancing of 1.5 metres must be followed taking into consideration the maximum room occupancy. Students should not move around the room and the room and instruments should be disinfected before and after rehearsals. Instruments and music should not be shared. Groups of wind players are allowed to play together as long as follow appropriate protocols, as are choirs. Chanting, singing along or shouting in groups is still not allowed.

## Scotland

**Additional Guidance on Managing Risks of Covid 19 for Instrumental Music Teachers The Educational Institute of Scotland (Education Union) <https://www.eis.org.uk/Coronavirus/GuidanceIMTCovid> (Updated 13 August)**

Updated guidance for peripatetic instrumental music teachers including a Covid secure workplace checklist. The document now includes reference to singing and wind/brass instruments following updated Scottish government guidance which states that “these activities should be avoided during the initial return to schools.” The union guidance now says that no provision for practical teaching of singing, wind and brass should be made until the government decides they can be managed safely.

## Singapore

**Sustaining the Arts During Covid 19: Phase 2 of re-opening for arts and culture stakeholders National Arts Singapore <https://www.nac.gov.sg/whatwedo/support/sustaining-the-arts-during-covid-19/Arts-and-Culture-Sector-Advisories.html> (Updated 3 August)**

Updated guidance allowing for singing, voice training, wind and brass instrument classes to resume from 3 August under controlled conditions. Singing classes are limited to one student and one teacher with at least 2 metres between them. Singers should sing away from each other and masks and/or face shields should be worn when not singing. For wind and brass instruments, teachers must wear masks when singing or humming a passage for demonstrations. The whole instrument should be played (no mouthpiece buzzing for example) to avoid droplet transmission. No instruments, mouthpieces or reeds should be shared. Spit valves should be emptied and disposed of hygienically. Venues should be well ventilated, cleaned between classes and equipment such as microphones, mutes and sheet music should not be shared.

## United States

**Aerosol Study FAQ’s Blog International Coalition on Aerosol Study <https://www.nfhs.org/articles/aerosol-study-faq-s-blog/> (13 August) [https://www.nfhs.org/media/4119362/artsted\\_safeschool\\_nfhs\\_infograph.png](https://www.nfhs.org/media/4119362/artsted_safeschool_nfhs_infograph.png) (6 August)**

Updated advice from the University of Colorado Boulder and University of Maryland study into aerosol transmission, singing and instruments. Recommendations are made including the wearing of 2 layer, well-fitting masks for singers, instrumentalists and teachers as well as bell coverings for wind and brass instruments. Social distancing of 6 feet should take place in addition to masks, and there should be good ventilation and air change rate for the rehearsal/teaching space. Hygiene procedures should be in place for instruments, classrooms and staff and students. Finally, lessons and rehearsals should only take place in 30 minute blocks with a 5-minute pause between blocks for outdoor settings and a minimum of one air change between classes in indoor settings.

## Additional Sources

**Shapiro, E., McDonell Nieto del Rio, G., Hubler, S. (1 August 2020). A School Reopens, and the Coronavirus Creeps In. New York Times. <https://www.nytimes.com/2020/08/01/us/schools-reopening-indiana-coronavirus.html>**

**Fausset, R. (12 August 2020). 1,193 Quarantined for Covid. Is This a Successful School Reopening? New York Times. <https://www.nytimes.com/2020/08/12/us/georgia-school-coronavirus.html>**

# About

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To find out more about the ISM contact us at [membership@ism.org](mailto:membership@ism.org) or call **020 7221 3499**.

## About the authors

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**Dr Jodie Underhill** holds a PhD in psychology from Keele University where her research focussed on musical culture and participation within different school settings and is a qualified music teacher with over 18 years' experience. She has been a Head of Music, Head of Drama and Head of Performing Arts and has taught across all Key Stages in state and independent schools and weekend performing arts schools. She has run her own private teaching business in addition to having been an examiner for both GCSE music and A Level drama. She is the current Chair of Brizen Young People's Centre in Cheltenham.



