

Musical instruments and Covid-19

WIND INSTRUMENTS: GENERAL FINDINGS AND RECOMMENDATIONS - February 2021

At the beginning of the health crisis, wind instruments raised a number of questions about the particular health risks they could generate, as well as the measures to be taken to ensure their safe practice. The following is a short summary of general elements and recommendations, which are based both on the analysis of the scientific literature and on our own measurement campaigns.

To begin with, contrary to the fears that may have been expressed at the beginning of the epidemic, the playing of wind instruments does not involve the projection of large quantities of particles over great distances in a way that is superior to ordinary speech. It is therefore general health protocols that must be implemented with adaptations due to the specificities of this activity.

THE FOLLOWING RECOMMENDATIONS CONCERN MUSICAL PRACTICE IN GENERAL

- **PREVENTION OF RISK BY FOMITES**

For the practice of wind instruments, the risk of transmission of CoViD-19 by a musician is mainly related to the formation of fluids inside the instrument. Indeed, When the musician plays a wind instrument, condensation is created as well as droplets that settle and accumulate on the internal walls. For instruments of the Brass family, fluids must be evacuated frequently by emptying the keys or the slides in a suitable container. For all instruments of the Woodwind family, the droplets tend to settle on the walls of the instrument creating fluids which will run off and fall under the effect of gravity. Hands and fingers can also be contaminated when playing or handling (disassembly, cleaning, etc.). This is why it is important to clean and disinfect hands regularly to avoid any risk of surface contamination. Finally, all surfaces that may have been contaminated must be disinfected, as well as surfaces located nearby (floor, seat, desk...). It is therefore recommended to carry out regular disinfection of the surrounding surfaces.

The risk by contact can be considerably reduced by the application of adequate measures: disinfection of hands, surfaces, and instruments. For the specific disinfection of musical instruments and their accessories, the CSFI and the ITEMm have published downloadable practical guides - indicating effective protocols on SARS-CoV-2 virus - validated by our work and compatible with the materials of each type of instrument.

Concerning the disinfection of reeds - which raised questions since no technical solution had yet been validated - laboratory tests have validated the effectiveness of a 0.05% water-based active electrolyzed chlorine solution (@RiegerClean @RAFILythe). The reeds must be immersed for 3 minutes and then rinsed before use.

- **POSITIONS OF THE MUSICIANS:**

- **AEROSOLS EMISSION**

Wind instruments emit aerosols mainly from the bell and in a lesser way from the tone holes. Due to the deposits inside the instruments, the concentration of emitted aerosols is lower at the instrument output than at the input. The average size of the particles at the bell is slightly smaller than the size of those emitted by a singer. The practice of wind instruments does not involve air flow which could promote the spread of aerosols. Their dispersion is therefore strongly dependent on ambient air flows, just as for breathing or speaking.

○ DIFFERENCES BETWEEN WIND INSTRUMENTS:

It is not relevant at this time to rank or discriminate the different wind instruments. Indeed, given the very high variability between individuals, and for an individual depending on what is played, and the limited panels of musicians in experimental works, it is not possible at this stage to draw significant conclusions. We will thus treat all wind instruments as a single activity in terms of sanitary protocols.

The flute was presented as presenting a particular risk. Indeed, it generates a larger outward jet of air at the mouthpiece. However, this jet of air contains almost no of few aerosols. The practice of this instrument therefore does not represent a significantly greater risk than that of others wind instruments.

○ DISTANCES

In the current health context (high epidemic risk), we recommend maintaining a distance of 2 meters (head to head) between the wind players and to favor a staggered arrangement. Indeed, if the actual practice of the instruments does not project very large quantities of particles, the removal of the masks by the musicians requires increased vigilance, in particular during times when they are not playing (strong exhalation, speech, and accidental sneezing or coughing).

○ PLEXIGLAS PROTECTIONS

The use of plexiglass walls placed between or around the wind musicians had been presented as a possible means of prevention against projections between musicians. This method is effective against the projection of large droplets. However, these walls have no effect for aerosols (small diameter particles) generated that are carried by surrounding air streams. They can even present an additional risk: in fact, their presence can interfere with the renewal of air by the ventilation systems and create inaccessible "dead zones" in which aerosols can accumulate. Plexiglas screens are therefore not recommended in this context.

● USE OF PERSONAL PROTECTION:

○ MASKS

As with any activity bringing people together in a confined environment, wearing a mask is strongly recommended, or even mandatory, depending on the context of the practice. The effectiveness of the mask is no longer to be demonstrated, whether it is against transmission by large droplets or against the accumulation of aerosols in a room. It is strongly recommended that wind musicians wear their masks when they have a significant period without playing.

○ PROTECTION ON INSTRUMENTS

The effectiveness of "bell covers" (woven tissue covering the bell of the instrument) is now demonstrated for particle filtration at the bell of an instrument (like a mask on the face). This emission reduction measure is not essential when the other measures are respected (distancing, significant air renewal) but offers additional protection when the conditions are not optimal, without negative counterparts.

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PIC PIV Project

Protocols for Instruments against Coronavirus Instrumental and Vocal Practices

Since 1890, the Chambre Syndicale de la Facture Instrumentale has brought together companies and craftsmen who make, repair, distribute and export musical instruments and associated accessories. It also hosts dealers and four professional associations of luthiers (Aladfi, Glaaf, Aplg, Unfi), the trade union chamber of dealers (CSMM) and the professional organization of piano technicians (Europiano). The professional union Les Forces Musicales, which was created in September 2015, brings together permanent staff of operas and French orchestra. Through the structures represented, Les Forces Musicales is the second largest performing arts employer organization in terms of payroll and the first in terms of permanent artistic jobs.

The PIC PIV project is the third part of the PIC project initiated and carried out by the (CSFI) and the European Technological Institute for Music Professions (ITEMM).

The ITEMME is a training center labeled Higher Education Culture which trains in the art of instrument making, sound management and specialized trade professions. The ITEMME, labeled as an innovation pole, is based in Le Mans.

DESIGN AND MANAGEMENT OF THE RESEARCH PROGRAM



OUR PARTNERS

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