A note on COVID-19 and singing:

How does the human voice work?

When we sing, air is expelled from the lungs, through the diaphragm, and out of the mouth. This entire passageway, from nose/mouth to lungs, is covered in a mucosal lining. The purpose of this lining is to trap foreign particles -- germs, pollen, pollution in the air, etc -- anything that should not be making its way deep into the lungs. As we sing, air moves through this passageway at a much faster speed with a higher amount of pressure than when we speak or breathe. This causes the air to pick up these particles that have been trapped in this lining, and because of the vibrations of the vocal folds while singing, these particles can be chopped into extremely small pieces. This creates particles much smaller than the droplets expelled into the air when a person coughs or sneezes. These particles are called aerosols.

What makes aerosoles dangerous, and what does that have to do with singing?

The CDC has warned us about larger droplets from coughs and sneezes since the beginning. These particles tend to travel no more than six feet, and stay in the air only a few minutes before gravity forces them to the ground or other surfaces. The true danger in singing and vocal projection lies in aerosols. Aerosols are so small that they can potentially stay in the air for hours and travel much farther than six feet. Although aerosols are also expelled through speaking or even breathing, because of the additional pressure and airspeed involved in singing this action is unfortunately particularly dangerous. If you imagine an entire choir or musical cast rehearsing for two hours, each person expelling a mixture of both droplets and aerosols into the air, I’m sure you can see why this might be a potential “super-spreading event” as scientists have warned us. Aerosol clouds build up over time, and are even capable of “riding an airstream” all the way to the other side of a room. Adding poor ventilation into the mix, even with masks this could potentially result in a truly dangerous situation. There have been numerous events that prove this, including choir rehearsals and church services throughout the world.

What *can* we do?

This all sounds very scary, but scientists have been hard at work in the field of the performing arts. There are numerous studies in the works as we speak, which is very encouraging. One study taking place in Colorado at UC Boulder is of particular interest, because they are testing hundreds of singers, instrumentalists and actors while figuring out best practices for singing and theater moving forward based on their findings. This will be an extensive study that tests many people of different ages, ability levels, voice parts, and styles of singing. In August, preliminary guidelines were released for the start of school, but with the disclaimer that the findings are *preliminary.* These guidelines consist of singing for no more than thirty minutes, ideally outdoors, followed by a 100% air exchange. If rehearsing in an indoor space, the amount of time an air exchange takes depends on the ventilation system of the building. According to the study’s findings singing should never take place unmasked, even outdoors, and the quality of the mask has much to do with how protected the singers are. Unfortunately, face shields (without the additional protection of masks) are not an option for singing, since aerosols can come out through the sides and bottom. Plexiglass is also something that does not help, and can actually make the situation worse since it creates “dead zones” where aerosols can get trapped and not filtered out by ventilation.

The preliminary findings were based on data collected from only one singer, and all recommendations apply to one solo singer. They have yet to address ensemble singing of any kind, but will get there. The study should be complete by December, which will allow us to move forward with communal music-making in a much more knowledgeable and safe manner. In a world of uncertainty, knowledge truly is power.

The Mount Musical staff wants nothing more than to give the cast an incredible and fulfilling musical theater experience. We have been bouncing ideas around for months, but in the end decided what’s safest for cast members is to hold off until May of 2021. When rehearsals begin, there will be much more scientific data that will allow us to approach the rehearsal process in a safe manner.