



Environmental Health Safety &
Risk Management
New Mexico State University
MSC 3578, Box 30001
Las Cruces, NM 88003-8001
Office: (575) 646-3327 Fax: (575) 646-7898

Face Shield Information

This compilation of information comes from various resources found on the internet, The University Risk Management and Insurance Association, The Campus Health Safety Environmental Management Association and the CDC. Links have been provided and key points from each source of information.

1. Face Shields and Containment of COVID-19 <https://jamanetwork.com/journals/jama/fullarticle/2765525>
 - a. A face shield provides a clear plastic barrier that covers the face. Optimal protection, the shield should extend to the chin and to the ears and there should be no gap between the forehead and headpiece.
 - b. Advantages:
 - Can be reused and easily cleaned.
 - Protect portals of vital entry (eyes, mouth, nose).
 - Prevent the wearer from touching their face.
 - Ease of communication and allows visibility of mouth movement.
 - c. Face shields appear to significantly reduce the amount of inhalation exposure to influenza virus:
 - In a simulation study, face shields were shown to reduce immediate viral exposure by 96% when worn by a simulated health care worker within 18 inches of a cough.¹⁰
 - Even after 30 minutes, the protective effect exceeded 80% and face shields blocked 68% of small particle aerosols,¹⁰ which are not thought to be a dominant mode of transmission of SARS-CoV-2.
 - When the study was repeated at the currently recommended physical distancing distance of 6 feet, face shields reduced inhaled virus by 92%,¹⁰ similar to distancing alone, which reinforces the importance of physical distancing in preventing viral respiratory infections.
 - d. No studies have evaluated the effects or potential benefits of face shields on source control, i.e., containing a sneeze or cough, when worn by asymptomatic or symptomatic infected persons.
2. (CDC and NIOSH) Efficacy of Face Shields Against Cough Aerosol Droplets <https://www.cdc.gov/niosh/nioshtic-2/20043721.html>
 - a. During testing of an influenza-laden cough aerosol with a volume median diameter (VMD) of 8.5 μm , wearing a face shield reduced the inhalational exposure of the worker by 96% in the period immediately after a cough.
 - b. When a smaller cough aerosol was used (VMD = 3.4 μm), the face shield was less effective, blocking only 68% of the cough and 76% of the surface contamination.
 - In the period from 1 to 30 minutes after a cough, during which the aerosol had dispersed throughout the room and larger particles had settled, the face shield reduced aerosol inhalation by only 23%.
 - Increasing the distance between the patient and worker to 183 cm (72 inches) reduced the exposure to influenza that occurred immediately after a cough by 92%.
3. From the CDC: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html#feasibility-adaptations>
 - a. It is not known if face shields provide any benefit as source control to protect others from the spray of respiratory particles. CDC does not recommend use of face shields for normal everyday activities or as a substitute for cloth face coverings. Some people may choose to use a face shield when sustained close

Please contact EH&S for any additional assistance at (575) 646-3327 or ehs@nmsu.edu

Revised July 9, 2020

contact with other people is expected. If face shields are used without a mask, they should wrap around the sides of the wearer's face and extend to below the chin. Disposable face shields should only be worn for a single use. Reusable face shields should be cleaned and disinfected after each use.

4. Other States or Universities that are implementing face shields as an alternative control:
 - a. **California OSHA** has stated that Teachers can use face shields, in the CDPH release of Schools and School based Programs:
<https://connect.cshema.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=4f57fd13-e78c-43cf-ad0f-fb3bdf7cbad5>
Pg. 5: Teach and reinforce use of cloth face coverings, masks, or face shields. Face coverings are most essential when physical distancing is not practicable.
 - b. **Pennsylvania** : [PolicyLab-Policy-Review-School-Reopenings_0.pdf](#)
Pg. 9: Face shields may be the most well-suited facial protection option as these devices do not obstruct the mouth. Students who are deaf, hard-of-hearing, or have autism spectrum disorder must be able to see the face and mouth of their teacher.
 - c. **University of Colorado – Colorado Springs**
 - Those who need to be closer than 6 ft - lab instructors, tutors, etc. but they have to wear both a face shield and face mask
 - Our county public health epidemiologist felt that the face shield in this instance created a physical barrier just like a piece of plexiglass.
 - The instructors can only wear a face shield instead of a mask when they are within a designated "penalty box" marked off in their room - which ensures at least 6 feet of distance to the nearest student.
 - Our state Health Dept. is allowing them to lecture without a mask or shield if they are 12 feet from the closest student
 - d. **College of William & Mary – Williamsburg VA**
 - Instructors wearing face shields just for instruction,
 - We've not utilized the front row of each classroom allowing on average an 8' minimum distance between students and faculty.
 - We've tried teaching with cloth face coverings and it will not work. Besides being hard to hear, it became very stressful on the speaker after a period.
 - e. **Chapman University:**
 - We are allowing face shields, coupled with proper physical distancing for situations as you described. In a closer contact environment they should be combined with face masks, but minimally a good face shield that extends far enough, and/or extending it with a good cloth extension will improve performance.
5. Other Universities that are considering face shields:
 - a. University of Wisconsin-Parkside
 - b. University of Wisconsin-Madison – Face Shield with 10ft distance from students and assigned microphones.
 - c. Many other universities commented and many considering will all same concerns, encouragements and opinions as others.
6. Concerns (Good and Bad) brought up From CSHEMA inquiry:
 - a. From Stony Brook University:
 - I would also be concerned over the visual that is being presented in the class - some students are going to be uncomfortable as they also see that face shields are frowned upon.
 - b. From Iowa State University – Associate Director
 - For cloth face coverings, I have found those with a vertical seam in the middle and those with vertical pleats are the best for speaking.
 - For face shields, disposable ones have thin enough plastic that they don't affect speaking very much. Reusable shields, especially those that are ANSI rated for impact, dramatically impact

Please contact EH&S for any additional assistance at (575) 646-3327 or ehs@nmsu.edu

Revised July 9, 2020

sound. In addition, the curvature across the face creates a parabolic effect, both reflecting and concentrating sound back at the speaker. It is sort of like shouting at yourself! Lecturers will definitely want to practice with shields before classes begin.

- I try not to dwell on the semantics of "droplets" vs. "aerosols". It becomes a debate every time we talk about transmission of viral infections. We can agree that SARS CoV2 is an "inhalable" hazard and I agree that uncovered faces create a concerning visual. CDC has made it quite clear that they don't consider shields a substitute for cloth face coverings. (NMSU will use face shield and social distancing).
- c. Many commented on use of microphones which many NMSU departments are already acquiring. Battery pack will remain in classroom and each instructor will be given their own microphone.
 - One thing to add here is that a microphone can easily be clipped inside the face shield.
 - It allows for better voice amplification, the speaker doesn't need to shout to be heard,
 - it diminishes the parabolic impact to the speaker,
 - it facilitates better audio for a recording of the lecture,
 - students can see the speaker's lips and facial expressions thus helping with non-verbal communication, and possibly others.
 - Cloth face coverings offer none of these advantages.

Plan for NMSU for use of Face Shields for Face to Face Instruction:

- A cloth face covering must be worn when not wearing the face shield or using a Plexiglas barrier (i.e. entry and exit to classroom, set-up of classroom).
- Some classrooms will have engineered barrier protection installed for instructor to use as an alternative control.
- Face Shield with full-face coverage that wraps around the sides of the face and extends to below the chin may be used as an alternate to a cloth face covering during lecture and instruction.
- Social distancing must be applied when wearing the face shield. A minimum of six feet away from students at all times.
- If closer proximity to students is required, then a cloth face covering must be worn with the face shield.
- The face shield should not be shared, and must be cleaned and disinfected after each use.