Face Coverings: Which are Friends, and Which Are Foes?

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The COVID-19 pandemic has caused a significant debate about the correct and most efficient type of face-covering to wear, and research on this topic could save hundreds if not thousands of lives. As such, the research question for this project was: What type of face covering reduces the greatest amount of speed of the simulated exhalation airflow? The hypothesis for this question is: If an N95 respirator is used to hinder the airflow of the simulated exhalation, then the airspeed after encountering the mask will be reduced the most, because the specialized fibers are specifically designed to hinder the movement of the greatest amount of air particles. A total of seven face coverings were tested, with them being a surgical mask, cotton mask, N95 mask, N95 respirator, valve mask, bandana, and a polyester T-shirt. Each face covering was secured over the fan, and an anemometer was used to measure the airspeed after the air passed through the face covering. Each face covering was tested five times. Without the funding and resources necessary to complete a full particle observation, the conclusion was based solely on the airspeed measured with each face covering. The face covering offering the least protection was the polyester shirt, followed by the bandana. The other face coverings all provided enough protection to where the registered airspeed was zero meters per second. With this research, individuals will be able to correctly select a form of face-covering that will protect themselves and others from airborne viruses.

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