

Abstract Submitted
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Singing, Dust, and Airborne Disease Transmission¹ WILLIAM D. RISTENPART, University of California, Davis — Much attention has focused on the role of droplets generated by coughing and sneezing for transmitting infectious disease through the air. The relative importance of these expiratory activities to airborne transmission, however, has never been definitively established. Here, we discuss recent experimental evidence implicating two less-considered but potentially significant mechanisms for airborne disease transmission. (1) In people, we demonstrate that the number of micron-scale expiratory particles emitted during vocalization, such as speaking or singing, increases dramatically with loudness, and can greatly exceed those generated by coughing. Theoretical calculations suggest that vocalizing less often and more quietly yields substantial decreases in transmission probability. (2) In guinea pig experiments, we establish that influenza is transmitted via “aerosolized fomites,” which are virus-contaminated dust particulates released from the fur and cage environment of the animals, not from their expiration. We further establish that aerosolized fomites can be emitted from sources widely used by people, such as paper tissues. Our results suggest that researchers should expand their focus beyond coughing and sneezing as the presumed mechanism for airborne disease transmission.

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