Bacterial communities' association with environmental factors in classroom floor dust

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Video Byte

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Abstract

Microbes are all around us. With around the same number of bacteria as cells in each human body, our microbiomes are constantly interacting with microbes in the surrounding environment. And indoor environmental microbes can influence our health, affecting allergies, asthma, and other health conditions. To better characterize indoor microbial communities, researchers conducted an environmental assessment as part of an epidemiologic study of 50 elementary schools in a large city in the United States. They identified more than 2,000 bacterial species in floor dust collected from 500 classrooms. The most abundant bacterial phyla were Firmicutes and Proteobacteria, and interestingly, the genus *Halospirulina* was reported for the first time in a classroom sample. Outdoor-associated and gram-negative bacteria were more abundant in classroom floor dust compared to homes, where human-associated and gram-positive bacteria are more abundant. And bacterial microbiome in classroom floor dust was relatively stable from a variety of environmental stresses. The characteristics of the microbiomes identified in this study indicate that health implications of exposure to the microbiome in classroom floor dust may be different from those in homes for school staff and students.