

Researchers develop realistic system to study impact of residential mold on health

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Feb. 26, 2016 - Residential mold has increased in recent years, due to water damage from a rising frequency of flooding. But there is scant information on the impact of residential mold on human health. But now a team of Danish investigators has developed a modeling system that actually mimics indoor fungal aerosols. The research is published ahead of print Feb. 26, 2016 in *Applied and Environmental Microbiology*, a journal of the American Society for Microbiology.

In the past, systems for modeling indoor mold have used a single species of [fungus](#), grown on agar, in petri dishes. But the investigators, led by Anne Mette Madsen, PhD, created a much more realistic model. First, they sampled dust from 27 homes, for [fungus species](#). The aerosols contained at least eleven species, nine of which were associated with water damage in homes, said Madsen, Senior Researcher at The National Research Centre for the Working Environment, Copenhagen, Denmark. They then inoculated gypsum board with that dust, in order to grow the fungus.

Once fungi were growing on the gypsum boards, Madsen and her collaborators blew air onto the gypsum boards, to aerosolize the fungus. They then placed the aerosols into a special chamber used to expose mice to the aerosolized fungus.

"We generated realistic aerosols in terms of the species composition, the concentration, and particle sizes," said Madsen. "The variation we measured in exposure level we measured during the 60 minutes of

aerosol generation was similar to the variation we measured in the homes. We also showed that many of the fungal [species](#) found in Danish homes have also been found in US buildings, and are associated with water damage."

The system can be used to study how mice respond to indoor fungi associated with [water damage](#), Madsen noted. Human reactions to the fungus can be extrapolated, to some extent, from those of the mice.

For most people, mold is not a substantial health hazard, according to the Centers for Disease Control and Prevention. But those with [weakened immune systems](#) or mold allergies are vulnerable. The agency recommends that such people avoid areas with obvious mold contamination, and should "keep hands, skin, and clothing clean and free from mold-contaminated dust."

Provided by American Society for Microbiology

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