

# We're surrounded! House dust is a rich source of bacteria

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If you've always suspected there are unknown things living in the dark and dusty corners of your home and office, we are now one step closer to cataloguing exactly what might be lurking in your indoor environment. Buildings have their own pattern of bacteria in indoor dust, which includes species normally found in the human gut, according research published in *BMC Microbiology*.

The microbial flora from indoor dust samples from two buildings was complex and dominated by bacterial groups originating from users of the buildings. The Finnish-based research team investigated the species level diversity and seasonal dynamics of bacterial flora in indoor dust by sequencing DNA from the dust samples collected.

“People spend most of their lives in different indoor environments: homes, schools, workplaces” explained microbiologist and lead researcher Helena Rintala. “And as such we are constantly challenged by airborne microbes. It is important then to understand the exact nature of this exposure and to be able to understand how it affects our health.”

Indoor dust samples were taken in 2003 from two nursing homes located in small towns in central Finland, 100 km apart. Both buildings were similar in age, building frame, ventilation, use and rural location. Offices in the two buildings were sampled at different times during 1 year to obtain four samples per building, one for each season

By examining dust samples taken from hard surfaces such as tables and

floors using a vacuum cleaner, Rintala and her colleagues found that Gram-positive bacteria dominated. This group includes Staphylococcus and Streptococcus species that belong to the normal bacteria in humans. Approximately five hundred bacterial species were estimated to be present in the dust, which is relatively easy to collect and reveals a good picture of the total microbial exposure in indoor environments. Although the diversity of the bacteria differed according to seasons, the difference between the buildings was greater than the variation observed throughout the year within a particular building.

“So far most of our information about microbes in indoor environments has concentrated on fungi. Our results show basic information on bacteria. Although our findings are significant, we do need more research to find out where the microbes are coming from for instance, “ concluded Rintala.

Source: BioMed Central

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