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Four ways to make your house germier – but in a good way

The world around us, including our homes, is full of micro-organisms such as bacteria, viruses and fungi, and many are good for us. By Amanda Morris.

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With many of us madly cleaning our homes, here's advice from experts – protect your house's microbiome for your health. The world is full of micro-organisms such as bacteria, viruses and fungi. Some bacteria and viruses are bad for our health, but the vast majority of these microbes are harmless or actually beneficial, says Jack Gilbert, a pediatrics professor at the University of California at San Diego.



The micro-organisms in our homes, where we spend a large amount of time, can play an important role in our health, Gilbert says.

Research suggests that being exposed to a diversity of microbes results in a better-functioning immune system and lower rates of asthma or allergies.

We still don't understand much about the microbiome in homes, Gilbert adds, but there is one emerging trend: urbanisation appears to be associated with a loss of microbiome diversity in our environment and our bodies, which has probably contributed to a rise in disease.

But he and other experts say there are a few easy ways to support a more diverse microbiome in your home.

Open your windows

If you live in an area with good air quality,

opening the windows can help diversify your home's microbiome by allowing in more micro-organisms, Gilbert explains.

This is especially true if your home is within roughly 500 metres of diverse plants. Plants and soil release microorganisms, and exposure to diverse micro-organisms can help train the immune system to better regulate itself, Gilbert says.

Without this type of exposure, the immune system can over-react to non-harmful allergens and organisms, which could lead to autoimmune conditions or allergies, he adds.

"What we're exposed to in the world can shape how our body reacts."

Graham Rook, emeritus professor of medical microbiology at University College London (UCL), suggests that some microbes in the natural world are like

“old friends” that evolve alongside us and benefit our health by strengthening our immune system’s ability to regulate itself and avoid harmful over-reactions.

However, if you have allergies to spring pollen, allergists recommend keeping your windows closed to avoid exacerbating your symptoms.

Keep houseplants

Studies suggest that living in urban settings can reduce microbiome diversity in our homes and hinder the development of a varied microbiome in our bodies.

“In urban areas, there is a lot of asphalt or concrete and we don’t have as much connection to the soil or plants, so we don’t get as much microbial exposure,” says Juulia Manninen, a doctoral researcher at the University of Helsinki who focuses on microbial diversity in urban environments.

But interacting with plants increases exposure to beneficial microbes, which are often limited in indoor and urban environments.

For example, one study from the Nature-Based Solutions Research Group at the University of Helsinki and the Natural Resources Institute in Finland found that people who worked in offices with vegetated “green walls” (vertical structures with plants growing on them) had increased levels of anti-inflammatory proteins in their blood than workers who did not get this intervention.

Another study found that adults living in urban areas who did indoor gardening using microbially diverse soil had increased levels of anti-inflammatory proteins in their blood after one month, compared with those who gardened using soil with lower microbial diversity.

Indoor gardening – growing, repotting or even harvesting herbs or vegetables indoors – is one way to increase our interaction with plants, but simply being exposed to a variety of potted plants in the home will still be beneficial, Gilbert says.

Clean strategically

When cleaning your home, don’t overuse harsh chemical disinfectants because they can kill too many beneficial micro-organisms, says Erica

M Hartmann, an associate professor of civil and environmental engineering at Northwestern University.

Instead, when cleaning, ask yourself: “What problem do I want to solve?”

Focus on disinfecting areas where you know there may be harmful micro-organisms, such as the kitchen countertop, where bacteria such as E. coli can spread from handling raw meat, or the bathroom, where potentially harmful molds can grow, she says.

When cleaning with chemical disinfectants, wear a mask and open a window to avoid breathing in chemicals, Hartmann recommends.

To remove debris such as dust or dirt from floors and shelves, skip disinfectants and use a damp cloth instead.

Consider getting a pet

Exposure to animals in or around the home, such as by growing up on a farm or having a pet, is associated with a reduced risk for asthma and allergies, as well as some inflammatory diseases.

Dogs, in particular, have been shown to alter and diversify the microbiome inside a home. Rook and Gilbert attributed this to dogs running around outside and getting dirty, then tracking micro-organisms into the house. Also, humans have a long history of living with dogs, which may mean that our immune system responds well to dog-associated microbes. "Allow your dogs to come into the house, even if they're a little dirty," Rook suggests.

If all else fails – visit nature regularly

Not everyone is able to get a pet or keep houseplants in their home, and if they live in an area with significant air pollution, opening windows can do more harm than good, Gilbert says. If you face any such restriction, or even if you don't, try to get outdoors as much as possible to increase your exposure to more diverse micro-organisms.