

Germs spread fast at work, study finds

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(Medical Xpress)—When someone comes to work sick, about half of the commonly touched surfaces in the office will become infected with the virus by lunchtime, according to a new study at the UA.

Anyone who has worked in an office knows what happens when a colleague comes to work sick – it isn't long before the hacking and

sneezing starts to spread. New research from the University of Arizona shows how quickly those germs travel through an office environment when just one person comes to work sick.

Completed just in time for [flu season](#), the study finds that more than half of commonly touched surfaces in an office – like doorknobs, copy machine buttons, the office refrigerator – can become infected with a virus when a single person in the office is ill. Some of the likeliest germ hotspots include the coffee pot handle in the break room, telephones, desktops and tabletops.

The study also revealed that simple interventions, such as [hand washing](#) and the use of [hand sanitizer](#) or wipes, can drastically reduce employees' risk of infection.

Conducted in an office on the UA campus, the study included about 80 participants, some of whom received droplets on their hands at the start of a normal work day. While most of those [droplets](#) were plain water, one person unknowingly received a droplet containing artificial viruses mimicking the cold, the flu and a [stomach bug](#).

Employees were instructed to go about their day as usual. After about four hours, researchers sampled commonly touched surfaces in the office, as well as employees' hands, and found that more than 50 percent of surfaces and employees were infected with at least one of the viruses.

"We were actually quite surprised by how effectively everything spread," said Kelly Reynolds, UA associate professor of public health and co-principal investigator on the study. "I didn't expect to find it as much as I did."

And that was in an office environment where people work primarily in isolated spaces, she noted.

"There weren't a lot of people roaming around," Reynolds said. "They basically go in their offices, sit in their chairs and are on their computers. They may go to the bathroom, and they have a common kitchen area they share and a photocopy machine, but that's about it."

Researchers swabbed surfaces and hands again at the end of the work day. By then, the cold and flu viruses, known for their short survival time, had dissipated, but the stomach virus had continued to spread, infecting up to 70 percent of surfaces tested.

"We really felt that the hand was quicker than the sneeze in the spread of disease," said Charles Gerba, UA professor of soil, water and environmental science and co-principal investigator on the study. "Most people think it's coughing and sneezing that spreads germs, but the number of objects you touch is incredible, especially in this push-button generation. We push more buttons than any other generation in history."

Although the cold and flu germs had died off by the day's end, risk to employees was still high since little exposure is necessary to make someone sick, Reynolds said.

The researchers calculated that employees faced a 40 to 90 percent chance of infection with one of the three viruses.

The same study then was repeated with a "Healthy Workplace Intervention" in place. Employees were provided free tissues, disinfecting wipes and a bottle of hand sanitizer and were instructed to wash their hands before eating lunch and after meeting with a large number of people.

With those simple interventions in place, risk of infection dropped below 10 percent.

"The take-home message here is that very simple interventions that we all kind of know about have great efficacy," Reynolds said. "Using tissues to wipe your face, using hand sanitizer or having it available for use, and washing your hands before lunch and after a big meeting resulted in an 80 percent reduction across the board, for all three viruses, in their risk of infection."

Another important message, Gerba says: Stay home when illness strikes.

On average, 80 percent of people say they will go to work sick, and when they do, they not only spread germs to others but can cost a company about \$280 in lost productivity, Gerba said.

Office health and hygiene has become an increasingly important area of study, with roughly 80 percent of the population working in offices today, he added.

"One hundred years ago, most of us lived on a farm and went into town once a week for a couple of hours. Today, we go into buildings containing hundreds, if not thousands, of people," he said. "We put more people in bigger facilities, so we have more opportunities for trading [germs](#) than ever before."

Provided by University of Arizona

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