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When Does the Flu Hit Harder?

At 25-35% humidity, 5°C

Everybody knows that flu hits hardest in winter, but what aspects favor the virus? A new research shows that lower temperatures and humidity are the main responsible factors. Many causes had been enumerated for explaining the infection's boom during the winter months, like people's tendency to reunite for more time indoors or a decrease in the activity of the immune system during the winter, but all these are just suggestions, since they haven't been scientifically proven. But the team led by virologist Peter Palese of Mount Sinai School of Medicine in New York City checked the role played by temperature and humidity in spreading the disease. Four guinea pigs diseased with a human flu virus were placed in cages close to four healthy animals. The temperature was kept constant by the researchers, who varied just the humidity level; the results showed that a low relative humidity of 25 - 35% caused the highest infection rate amongst the healthy individuals (75 - 100%). When humidity increased to 50%, only 25 % of the healthy individuals got the flu and the transmission was completely stopped by humidity values bypassing 80%, signaled the team in the October issue of PLoS Pathogens. 5°C was the thermal optimum for the viral transmission, when all the animals got sick; over 30°C, the infection's transmission was stopped. "This offers a nice explanation for why we have more flu in the winter, because it gets transmitted better in the cold. The findings need to be confirmed in people, but a possible reason for the increased transmission is that the flu virus is more stable at colder temperatures and lower humidity.", said Palese. The human body's functions as anatomical barriers against germs (ex. the nasal mucous membrane) could fail at these values of temperature and humidity. "The findings indicate that raising the humidity in buildings, such as hospitals and nursing homes, could help prevent transmission of flu. Still, this strategy could be tricky, because higher humidity could encourage the growth of other pathogens, such as mold or the bacteria that cause Legionnaires' disease. You don't want to reduce one infectious disease only to increase another", said Raymond Tellier, a microbiologist at the Hospital for Sick Children in Toronto, Canada.