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Controlling aerosolisation of mucous & vaccination help prevent COVID-19 infection outcomes: Study

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Researchers all over the world have been trying to understand how the COVID-19 virus spreads from the nose and throat to the lungs



Researchers from the Indian Institute of Technology Madras (IIT-M), Jadavpur University and Northwestern University (US) have shown a plausible mechanism for how COVID-19 infection could become lethal. They performed simulation studies to understand the mechanism of transmission of the COVID-19 virus from the nose and throat to the lower respiratory tract.

The researchers used mathematical models to show how these viruses that infect the mucous lining of the respiratory tract spread as droplets into the lungs, thereby causing serious illnesses and recommend ways to prevent such spread.

The transport of virus-laden mucous droplets can be reduced by preventing activities that result in the generation of these droplets in the first place. For example, sneezing or coughing can dislodge the infected mucous in the nose and throat in the form of droplets.

One strategy to control such droplet formation is by administering cough syrups or expectorants. This would not only curtail spread to others but will also prevent an additional source of self-aerosolized droplets which could be inhaled into the lower respiratory tract.

Elaborating further, Dr Aranyak Chakravarty, Assistant Professor, School of Nuclear Studies and Application, Jadavpur University, said, “There was another important finding of this work. Our studies also show that while the transport of infected mucous droplets in the airway plays an important role, the infection growth and seriousness also depend upon the immune response of the infected person.”

The results of this study provide two important lessons- Medicines to control sneezing and coughing can help prevent the formation of infected mucous droplets in the nose and throat and their transmission into deep lungs, and Vaccination can help in preventing the development of pneumonia and other such serious lung diseases.