

## India reports first proven case of breakthrough reinfection in COVID-19

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### A 61-year-old doctor contracted both the Alpha and Delta variants at various stages



The Heart Care Foundation of India (HCFI) Dr KK Aggarwal Research Fund has documented severe SARS-CoV-2 breakthrough reinfection with Delta variant after recovery from a breakthrough infection by Alpha variant in a fully vaccinated healthcare worker. C

urrently under study, the case in point is that of a 61-year-old doctor from Delhi in whom the Delta variant infection resulted in hypoxia, hospitalisation, and illness lasting seven weeks.

The second and third infections occurred after the doctor had taken both the vaccine shots and developed antibodies. The term “breakthrough reinfection” has been specifically coined for this, and it is also the first proven case of the same. The doctor was first infected in August 2020.

The study done on this case will soon be published in an international peer reviewed medical journal called *Frontiers in Medicine*.

Speaking about this, Dr Veena Aggarwal, Trustee HCFI and co-author of the study said, “The study conducted identifies a rare breakthrough infection that was also confirmed as a reinfection. The breakthrough reinfection was severe enough to result in hypoxia and hospitalization and was contracted from a fully vaccinated family member. The Ct values in the Delta variant breakthrough reinfection were low enough to suggest transmission potential. This reinforces the recommendation that fully vaccinated individuals should continue to take precautions to protect themselves and others.”

There is no definite data on reinfections currently since whole-genome sequencing is not accessible and expensive. Labs also do not have much access to samples. As per the study conducted, post-infection and post-vaccination immunity both confer protection against COVID-19. However, there have been many whole-genome sequencing proven and breakthrough infections. Both are most often mild and caused by variants of concern (VOC).