

Immunologists convinced Santa has a great immune system

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Immunologists from Trinity are convinced that Santa and his sleigh-pulling reindeer are in excellent health as Christmas Eve

approaches—and that their immune systems are all showing wonderful signs of being ready to tackle COVID-19 in the unlikely event they encounter the virus.

Fears are mounting that stockings might be unfilled across the globe should Santa, Rudolf and Blitzen et al come down with a virus infection. But after extensive studies, the Trinity immunologists are convinced that Santa and his [reindeer](#) have super duper immune systems that are protecting them against infection.

The Trinity team, led by Professor of Comparative Immunology, Cliona O'Farrelly, have been thinking about Santa's [immune system](#) for some time. Even though he is quite portly, the team is convinced that Santa's immune system is particularly robust and able to withstand any negative effects of his overweight. We know that a proportion of overweight people remain metabolically and immunologically healthy even if overweight—and the Trinity team thinks Santa is one of these people.

We also know that some people do not become infected with COVID-19 even if they are exposed to the virus several times. The Trinity team is convinced that they have a super duper innate immune system, which includes the defense mechanisms that kick into action at the moment a virus enters the body. The team is studying this in people who have resisted HCV infection and SARSCoV2, and believe Santa is one of these people.

While the team would love to study Santa's innate immune system, they don't think he should be interrupted, even for such an important research study, as he is so busy at this time of the year.

Professor O'Farrelly said: "We have been thinking about Santa and COVID for quite some time, knowing that many children might be worried that he might catch the virus on his huge journey on Christmas

Eve. And we are very confident that Santa has an amazing immune system that is able to resist dozens of viruses, as one might expect for a man that has made the seemingly impossible possible for hundreds of years.

"All this time, he has remained very fit, healthy and jolly. We would expect him to have lots of little helpers inside as well as outside—these would be helper T cells which help his immune system make lots of "Santibodies," which bind on to viruses and prevent them from infecting Santa. And we are very excited by the idea that Santa may be one of the people with a special innate immune system that is able to fend off the [virus](#) even if he is exposed to it."

Being the Comparative Immunology group, the Trinity team has also been very interested in the immune systems of Santa's reindeer. Reindeer, like all animals including ourselves are susceptible to lots of viruses, but—like us—they have evolved really complicated immune systems to protect them from viruses.

Jamie Sugrue, Ph.D. Candidate in the Comparative Immunology group, based in the Trinity Biomedical Sciences Institute, said:

"Scientists from the Arctic University in Norway are working on antler asymmetry and immunity in reindeer, and it seems that reindeer with bigger, more elaborate antlers, also have better immune systems. We all know that Santa's reindeer have the best antlers of all, so we are very confident that they have excellent immune systems which will protect them against any infection

"Santa—the wise man that he is—also made sure that his reindeer all rested well, fed well, and exercised lots over their 11-month break, so that their immune systems are in really good shape. They have been getting plenty of Arctic Sun, too, so their Vitamin D levels are high,

which is really important for a healthy immune system for everyone."

In a further boost, Dr. Tony Holohan, chief medical officer, has confirmed that Santa is exempt from all restrictions, and is allowed to visit all homes across the globe.

More Santa research news

Last year, quantum physicists from Trinity helped solve the riddle of how Santa manages to deliver presents to the world's children in a single night. [You can find out how here.](#)

Provided by Trinity College Dublin

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