

Research reveals impact of loneliness on COVID-19 vaccine antibody response

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Ground breaking University of Limerick, Ireland research has revealed for the first time that loneliness and social stresses can have a negative impact on our antibody response to COVID-19 vaccines.

In a world's first, a group of UL researchers have found that lower neighborhood cohesion is associated with antibody response to COVID-19 vaccines.

This is important as the more antibodies a person makes, the better the level of protection against hospitalization and death from COVID-19.

The research team have demonstrated in a study published in the prestigious journal *Brain, Behavior and Immunity* that lower [social cohesion](#) also made people feel lonelier, and this was an additional factor in reducing COVID-19 vaccine responses.

Social cohesion is the degree of social connectedness and solidarity among different community groups within a society, including levels of trust and connectedness between individuals and across community groups.

Professor Stephen Gallagher, lead author and director of the study of anxiety stress and health lab at UL, said that low social cohesion was "a social stressor and we have known for a long time that these psychosocial stressors can have damaging effects on immunity in general but also antibody responses following vaccination, which we have demonstrated previously. Thus, it made sense to explore antibody responses to COVID-19 vaccinations".

Using data from over 600 people who took part in the UK's Understanding Society COVID-19 antibody study in March 2021, the researchers examined whether factors such as social cohesion and loneliness had a negative impact on people's antibody responses to the COVID-19 vaccine.

The authors found that lower social cohesion was predictive of a lower response to a single-shot of the COVID-19 vaccine; that those who felt

less connected to their neighborhood, had lower trust in their neighbors, and felt unsupported or less similar to their neighbors, made fewer antibodies in comparison to those who reported higher social cohesion.

In addition, those who reported lower social cohesion also tended to report that they felt lonelier, and this, in turn, reduced their antibody response.

Professor Orla Muldoon, who was a member of the Irish National Public Health Emergency Team (NPHE) advisory group on behavior and communication and was a co-author of the paper, said that these results highlight once again the relevance of [public trust](#) and social cohesion to the success of our pandemic response.

"Public and neighborhood trust, social cohesion, and loneliness have all come to the fore during the pandemic," explained Professor Muldoon.

"For example, during the initial lockdowns a sense of being in it together was an oft used mantra. We had 'clap for caregivers' in the UK, Italians singing from balconies, Dubliners playing bingo in the flats, all of which increased social cohesion and public trust."

"These feelings of social cohesion and trust were short-lived; something UK researchers now call the 'Dominic Cummings effect'. Similar diminishing levels of trust were also seen in the US during these periods. Along with this, lockdowns brought social risks such as less social interaction and an increased risk of loneliness."

"As well as the findings of this study showing their role in antibody responses, trust and [cohesion](#) have also been shown to drive compliance with public health guidelines and vaccine uptake," added Professor Muldoon.

Dr. Siobhán Howard, a co-author on the study, added that loneliness was a "well-established risk factor for several health conditions, with immune suppression a likely underlying pathway. Thus, this study adds to the growing body of evidence linking loneliness to poor health."

More information: Gallagher Stephen et al, Social cohesion and loneliness are associated with the antibody response to COVID-19 vaccination, *Brain, Behavior, and Immunity* (2022). [DOI: 10.1016/j.bbi.2022.04.017](https://doi.org/10.1016/j.bbi.2022.04.017)

Provided by University of Limerick

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