

Ditching distancing could risk vaccine-resistant virus strains

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Maintaining social distancing policies as vaccines are being rolled out may prevent the evolution of vaccine-resistant strains of SARS-CoV-2, suggests a mathematical biology study published in *Nature Human*

Behaviour.

As the COVID-19 pandemic continues, focus has been placed on worldwide vaccination, with the hope that social and [economic activities](#)—and the relaxation of associated [social distancing measures](#)—can gradually resume as a result of vaccine uptake. Recently, however, partially vaccine-resistant variants of SARS-CoV-2 (such as delta and omicron) have emerged, causing large outbreaks of disease.

Using vaccination and [infection data](#) from six countries (Israel, U.S., UK, Brazil, France and Germany), Yitzhak Pilpel and colleagues studied the evolution of SARS-CoV-2 in response to vaccination rates and social distancing measures, such as lockdowns. The authors reveal that when vaccination rates are slow, resistant strains are likely to emerge even if lockdown policies are maintained. However, if vaccine uptake is fast—as seen in Israel—the study predicts that resistance can be prevented if social distancing measures are maintained until most people are vaccinated. As such, limiting the number of new infections through contact reduction during mass vaccination programs is crucial to prevent the evolution of vaccine-resistant variants of SARS-CoV-2.

These findings highlight that to prevent the evolution of vaccine-resistant variants, social distancing is necessary until herd immunity is achieved. The authors recommend that policy-makers encourage social distancing or contact reducing measures—such as lockdowns or guidance on homeworking—together with fast mass vaccination.

More information: Gabriela Lobinska et al, Evolution of resistance to COVID-19 vaccination with dynamic social distancing, *Nature Human Behaviour* (2022). [DOI: 10.1038/s41562-021-01281-8](https://doi.org/10.1038/s41562-021-01281-8)

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