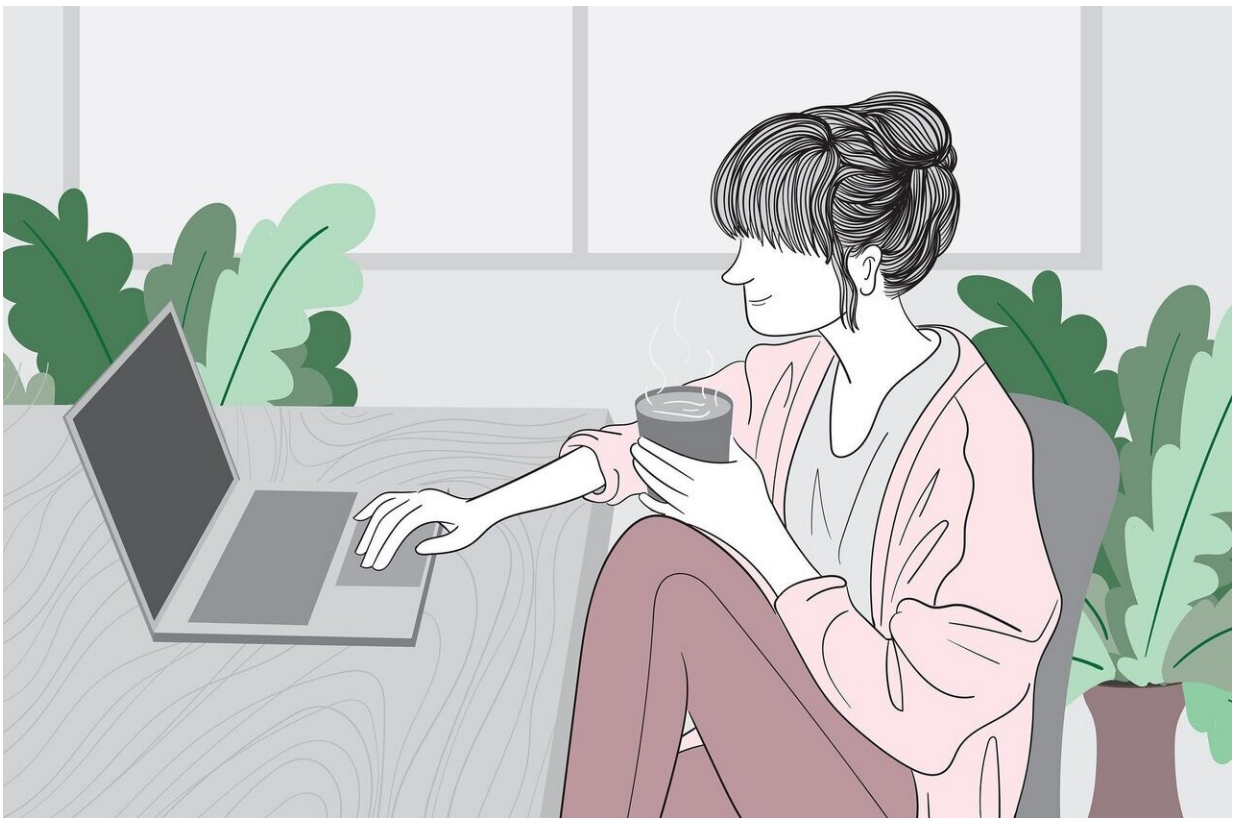


COVID-19: Compliance to household mixing restrictions in England decreased with each lockdown

November 25 2021



Credit: Pixabay/CC0 Public Domain

Household mixing significantly decreased in the first lockdown in England and remained relatively low in the second lockdown, but

increased during the third lockdown, reports a study published in *Scientific Reports*. The authors observed that the increase in household mixing by mid-February 2021 during the third lockdown coincided with the wider COVID-19 vaccine rollout across England.

Professor Ed Manley and colleagues used GDPR-compliant mobile phone data from over one million anonymous users who provided consent for their data to be used for research purposes. The authors compared household mixing across the pandemic to baseline levels, calculated from average household visits eight weeks before the pandemic began in England. The authors observed the largest decrease of 54.4% in household mixing during the first [lockdown](#) (starting in March 2020) which gradually increased across 2020 as restrictions were lifted. The authors also observed household mixing reduced by 15.28% in the second lockdown (starting in November 2020) and the initial month of the third lockdown by 26.22% (January 2021). Household mixing varied across regions, with some [urbanized areas](#) including London, Manchester and Cambridge associated with increased household mixing.

The significant increase in household mixing by mid-February 2021 rose above baseline levels by between 1.4% and 23.3% during the third lockdown, despite national restrictions remaining in place. The increase in household mixing coincided with the announcement that the most vulnerable had been vaccinated, and the wider rollout of the vaccination program across England. The authors propose this significant increase in household mixing during the third lockdown may reflect the widespread perception of safety from vaccinations. The authors also suggest that "lockdown fatigue" contributed to higher levels of household mixing in later lockdowns.

The authors conclude their study of mobile phone data may provide a useful privacy-preserving tool in helping assess the effectiveness of

COVID-19 public health policies at local and national scales. The authors did not predict any associations between potential future restrictions or booster vaccinations and household mixing.

More information: Ed Manley, Household visitation during the COVID-19 pandemic, *Scientific Reports* (2021). [DOI: 10.1038/s41598-021-02092-7](https://doi.org/10.1038/s41598-021-02092-7).
www.nature.com/articles/s41598-021-02092-7

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