Social contacts in the UK from the CoMix social contact survey
Report for survey week 59

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Summary

- The increases in mean contacts for adults seen towards the end of the third lockdown appeared to have levelled off with mean contacts at just above 3 people per person per day, though note that the data were collected before the most recent easing of restrictions on May 17th.
- This is still lower than seen during August 2020, and much lower than pre-pandemic levels.
- The levelling of the reported contacts is broadly consistent across ages, we see a steady increase in "other" contacts across ages with fluctuations mostly driven by work contacts and in 18-29 year olds by educational contacts.
- Children's contact levels remain consistent with those seen during previous periods when schools have been open. The increase in contacts outside of school settings for school-aged children has been sustained over the previous two weeks.
- The increases in contacts appear to have levelled in the majority of regions and nations of the UK, though discerning any differences by region is difficult due to small sample sizes.

Results

Mean adult contact rates have been increasing steadily since March, except for a small reduction around the Easter holidays. Contact rates have remained relative stable since mid April (Figure 1). Mean contacts reported since the 16th of April for adults only is clearly above that seen during lockdown 3, is similar to the levels of contacts reported after lifting the second lockdown (December 2020), but lower than those seen during August 2020 when restrictions were most relaxed (Figure 2). Adult contacts look steady amongst all age groups with the greatest variability in the 18-30 (Figure 3), which appears to be driven by fluctuations in education setting contacts (Figure S1). Mean levels of contacts for adults remain lower than those seen during August 2020 and it is worth stressing that the increases in contacts that have been recorded are still relatively small and the overall level of contacts is low compared with pre-pandemic levels [2].

Mean contacts for children remain consistent with levels recorded during previous periods of school opening. The small increase in non-school contacts for school-aged children over the last few weeks is still present and the slight change in work related contacts for 12-17 was present during the easter break though the absolute value of contacts for work is very low (Figure 5, 6, and S2).

Discerning clear trends in regional contact patterns is difficult due to the smaller sample sizes. The English regions and the UK nations continued upward trend appears to have levelled off over the past few weeks (Figure 7).
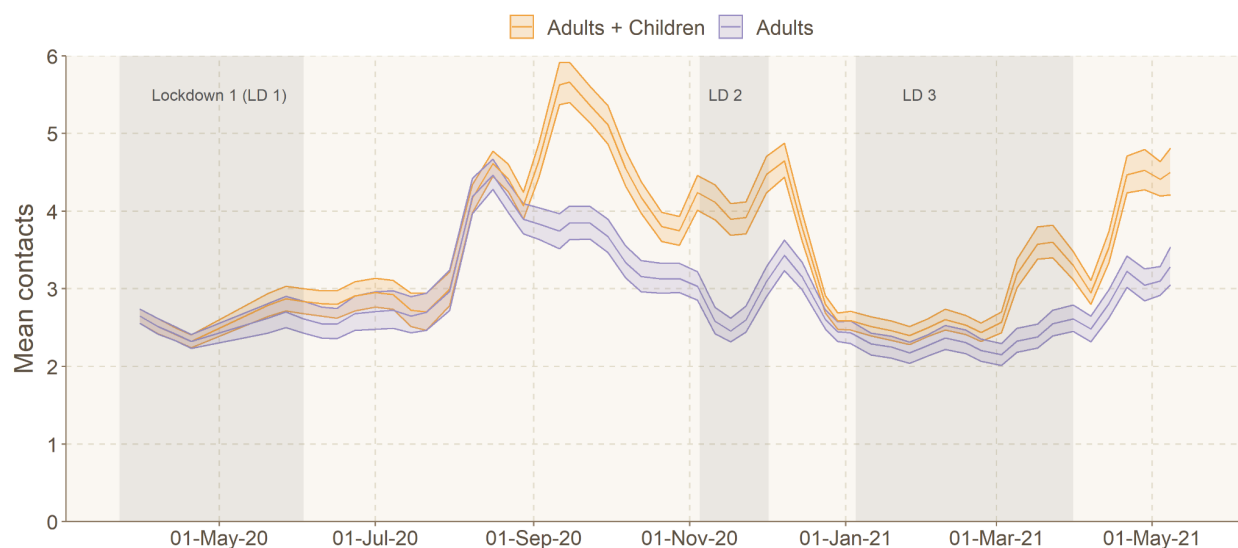

Figure 1: Mean contacts in the UK since the 23rd March 2020 for adults and children (all participants) and adults only (18 year +). Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.
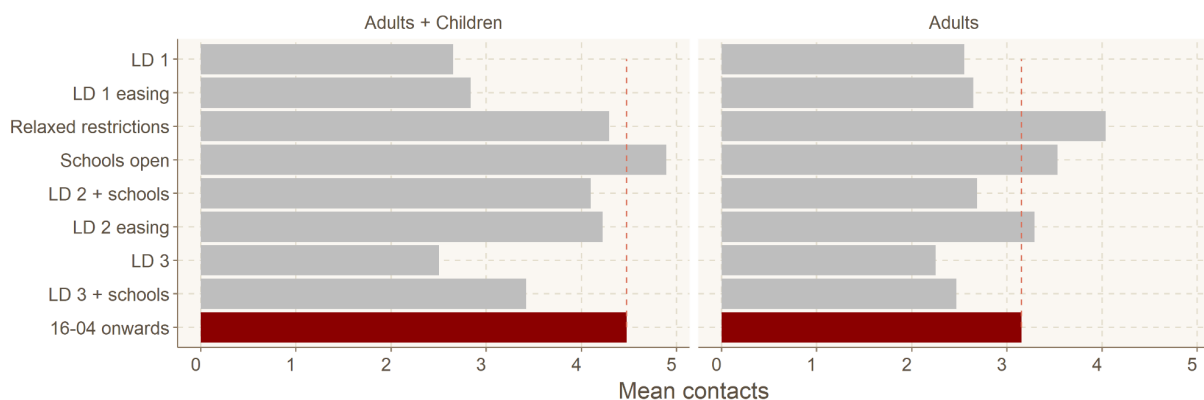
Figure 2: Comparison of mean contacts from the 16th of April to 11th of May to eight time periods of different restrictions for adults and children (all participants) and adults only (18 year +). Current period highlighted in red with dashed line for easier comparison to previous periods.

Table 1. Time periods based on different level of lockdowns and restrictions in England over the previous year

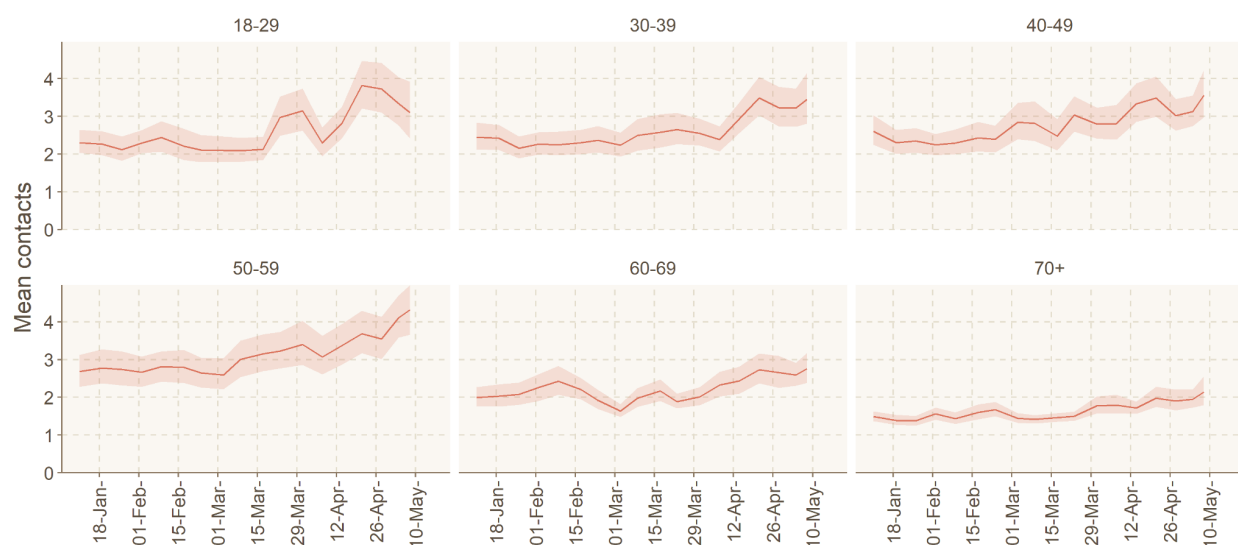| Period	Date	Period	Date
1. Lockdown 1 (LD 1)	24 Mar 2020 - 03 Jun 2020	5. Lockdown 2	05 Nov 2020 - 02 Dec 2020
2. Lockdown 1 easing	04 Jun 2020 - 29 Jul 2020	6. Lockdown 2 easing	03 Dec 2020 - 19 Dec 2020
3. Relaxed restrictions	30 Jul 2020 - 03 Sep 2020	7. Lockdown 3	05 Jan 2021 - 07 Mar 2021
4. School reopening	04 Sep 2020 - 24 Oct 2020	8. Lockdown 3 + schools	08 Mar 2021 - 31 Mar 2021

Figure 3: Mean contacts in all settings by age-group for adults over time. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.
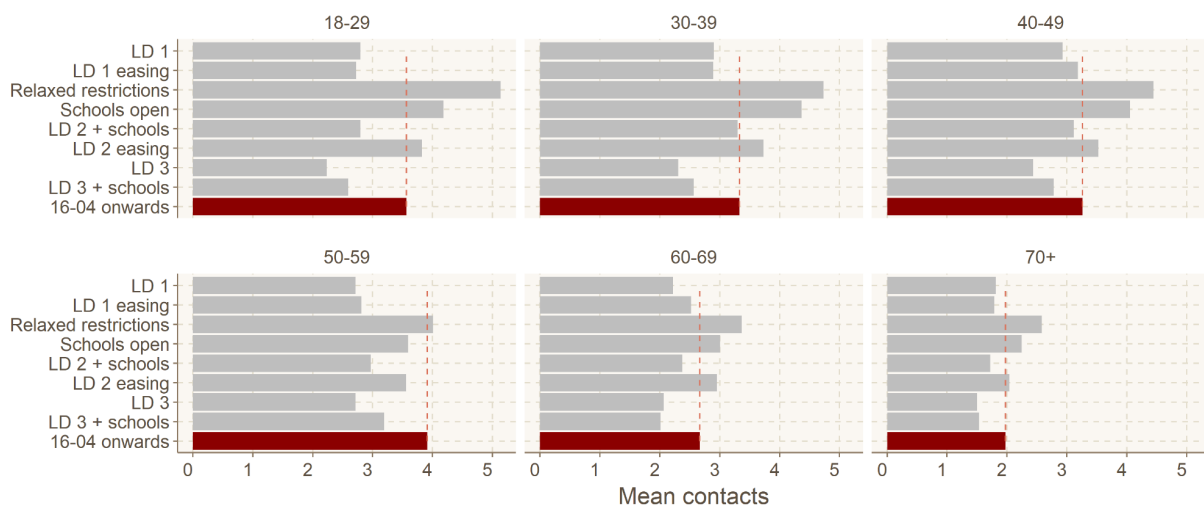

Figure 4: Comparison of mean contacts from the 16th of April to 11th of May to eight time periods of different restrictions by age. Current period highlighted in red with dashed line for easier comparison to previous periods.
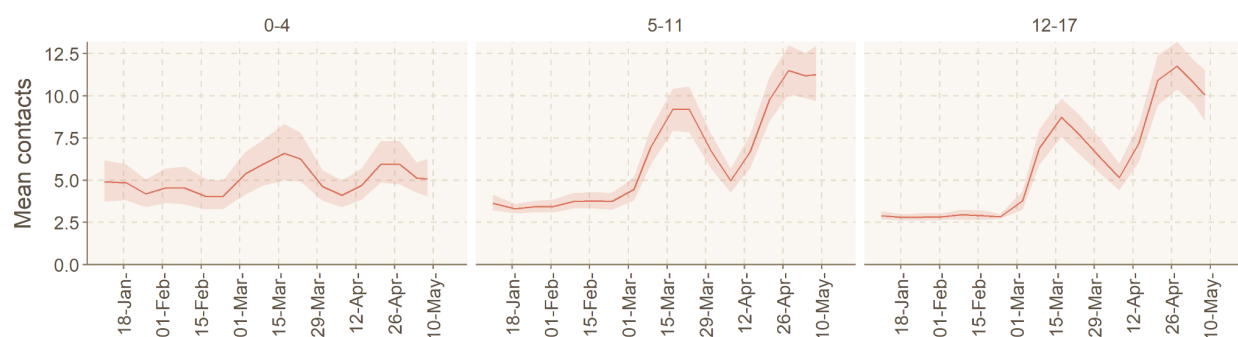
Figure 5: Mean contacts in all settings by age-group for children over time. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.
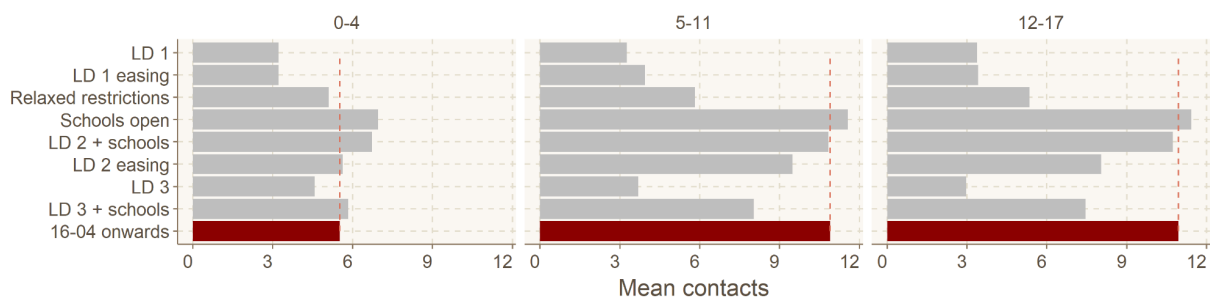

Figure 6: Comparison of mean contacts from the 16th of April to 11th of May to eight time periods of different restrictions by age. Current period highlighted in red with dashed line for easier comparison to previous periods.
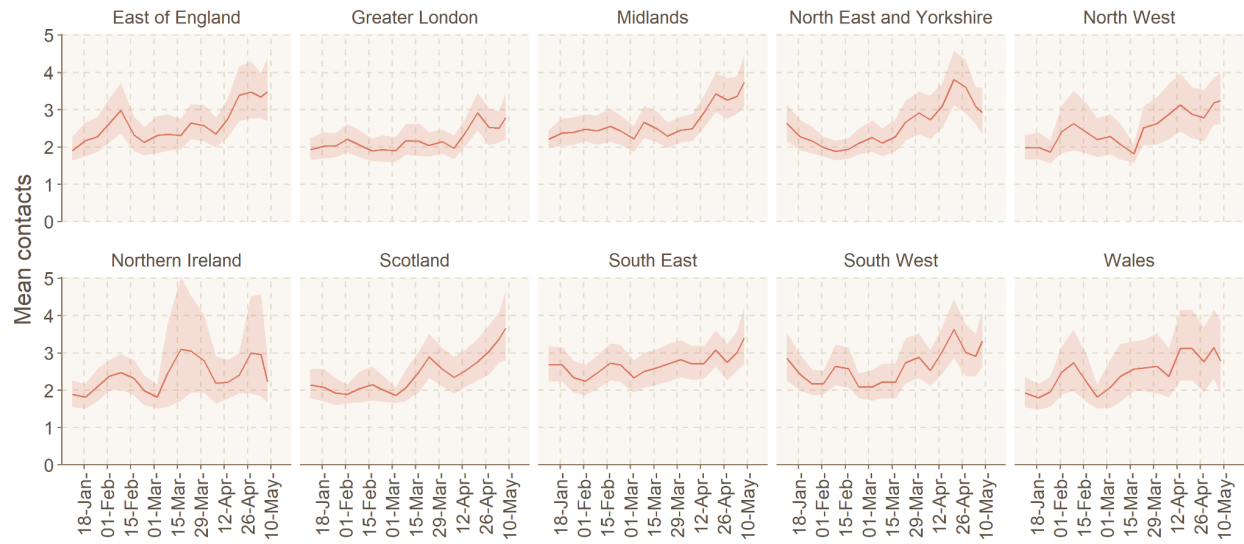
Figure 7: Mean contacts in all settings in adults for UK nations and English regions over time. Uncertainty calculated using bootstrapped. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.

Methods

CoMix is a behavioural survey, launched on 24th of March 2020. The sample is broadly representative of the UK adult population. Participant's are invited to respond to the survey once every two weeks. We collect weekly data by running two alternating panels. Parents complete the survey on behalf of children (17 years old or younger). Participants record direct, face-to-face contacts made on the previous day, specifying certain characteristics for each contact including the age and sex of the contact, whether contact was physical (skin-to-skin contact), and where contact occurred (e.g. at home, work, while undertaking leisure activities, etc). Further details have been published elsewhere [1]. The contact survey is based on the POLYMOD contact survey [2].

We calculated the mean contacts using 1000 bootstrap samples. Bootstrap samples were calculated at the participant level, then all observations for those participants are included in a sample to respect the correlation structure of the data. We collect data in two panels which alternate weekly, therefore we calculated the mean smoothed over the 2 week intervals to give a larger number of participants per estimate and account for panel effects. We calculated the mean number of contacts in the settings home, work and school (including all educational establishments, including childcare, nurseries and universities and colleges), and "other" (mostly leisure and social contacts, but includes shopping). We look at the mean contacts by age, country, and region of England. The mean number of contacts is influenced by a few individuals who report very high numbers of contacts (often in a work context). The means shown here are calculated based on truncating the maximum number of contacts recorded at 50 per individual per day.

We compared the mean reported contacts for the most recent two weeks of the survey to the mean contacts reported during eight time periods over the previous year which represent different levels of restrictions.

References

1. Jarvis CI, Van Zandvoort K, Gimma A, Prem K, CMMID COVID-19 working group, Klepac P, et al. Quantifying the impact of physical distance measures on the transmission of COVID-19 in the UK. BMC Med. 2020;18: 124.

2. Mossong J, Hens N, Jit M, Beutels P, Auranen K, Mikolajczyk R, et al. Social contacts and mixing patterns relevant to the spread of infectious diseases. PLoS Med. 2008;5: e74.
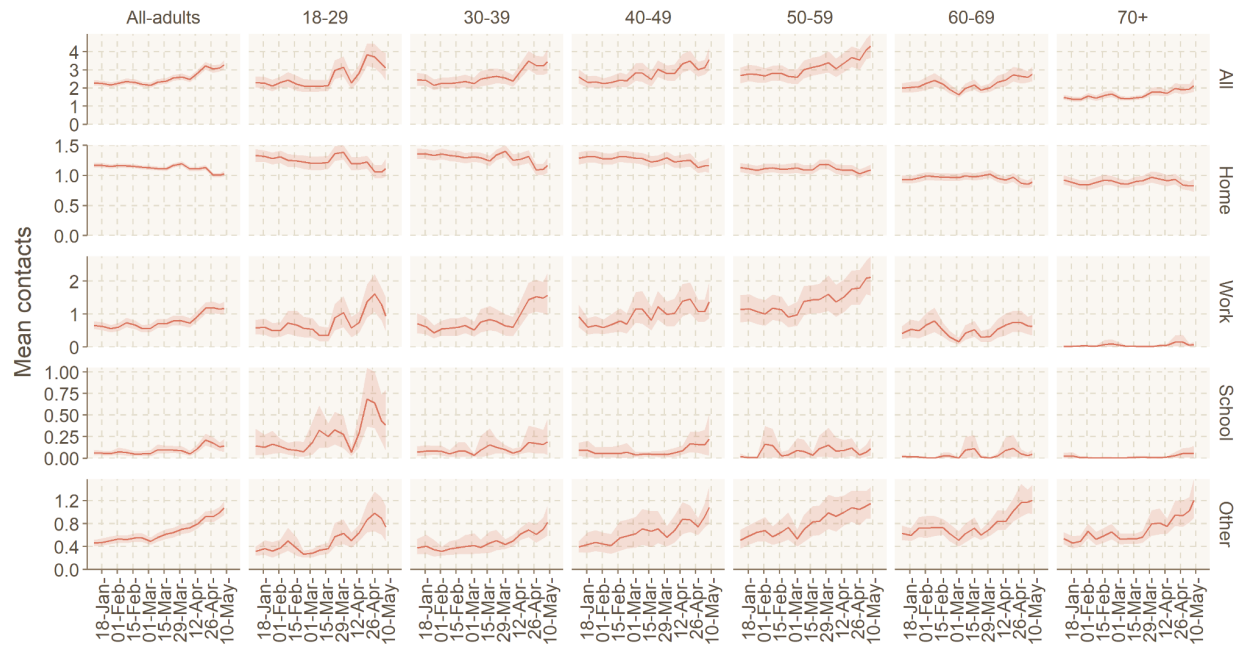
Appendix

Figure S1: Setting-specific mean contacts by age-group for adults over time. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects.. Date on x axis refers to the midpoint of the survey period.
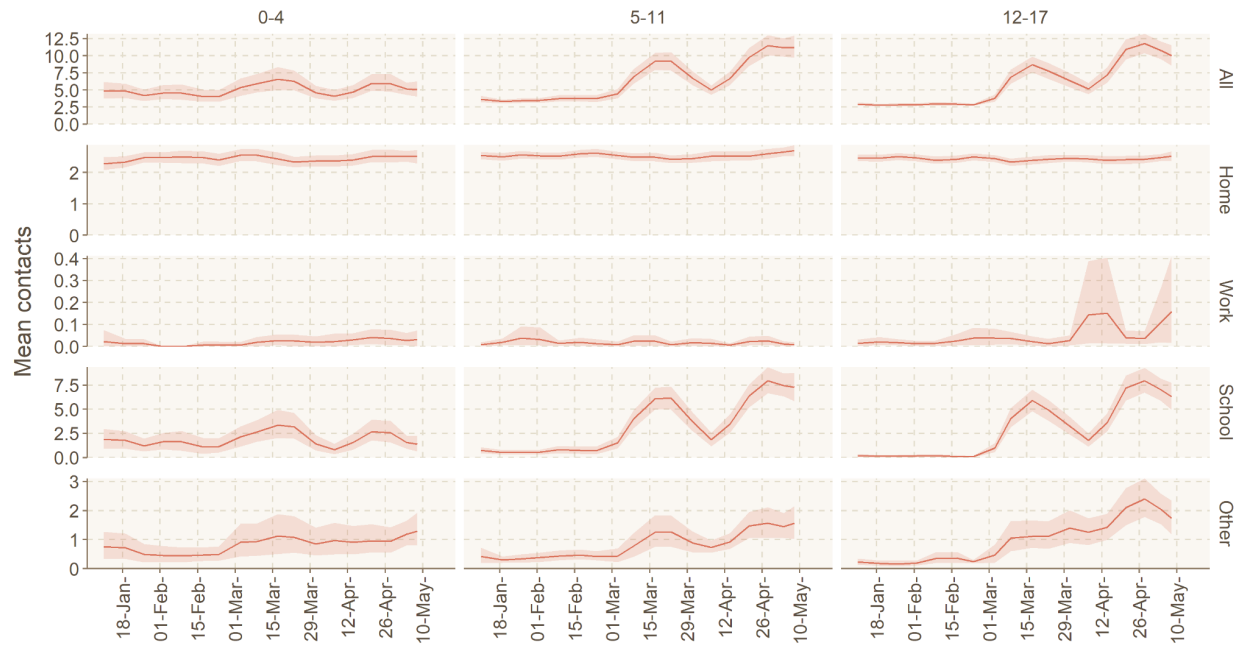
Figure S2: Setting-specific mean contacts by age-group for children over time.
Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.