

# Social contacts in the UK from the CoMix social contact survey

## Report for survey week 61

*Christopher Jarvis, James Munday, Amy Gimma, Kerry Wong, Kevin Van Zandvoort, Sebastian Funk, John Edmunds on behalf of CMMID COVID-19 Working Group, London School of Hygiene and Tropical Medicine.*

*Report for SPI-M-O and SAGE, 1st June 2021  
Data up to 25th May 2021*

### **Summary**

- The latest data confirm early indications from last week's report that contacts appear to have increased since the 17th of May and are now at similar levels to those observed during August 2020.
- Physical (skin-to-skin) contacts remain low compared with historical levels. However, adults are reporting fewer contacts outdoors, which could be reflecting a change in the risk of contacts.
- Children's contact levels (measured before the half-term break) are at the highest level observed over the whole pandemic, driven by contact patterns in school and a continued increase in leisure and social contacts.
- It appears as if similar patterns of contact are occurring across the regions of England and nations of the UK, though discerning differences by region is difficult due to small sample sizes.

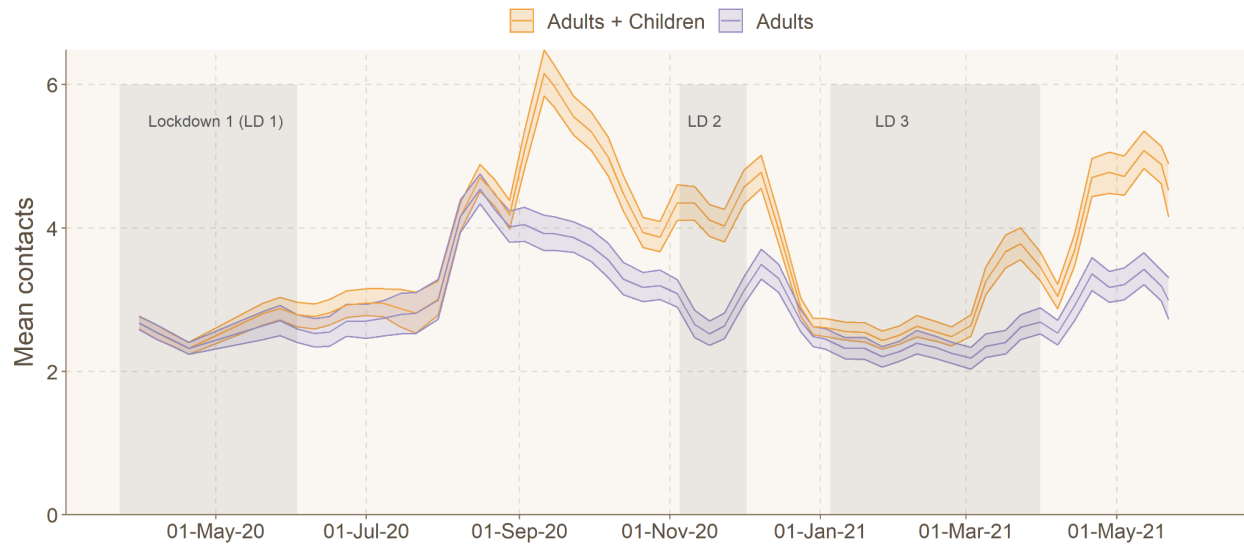
## Main

This week's data confirm early indications from last week: adult contacts appear to have increased since May 17th and are now at a comparable level to those observed during August 2020, i.e. the highest level observed during the pandemic (Figure 1). For working aged adults (18-59) contacts in the work setting have driven most of the rise in overall mean levels of contact over recent weeks, though contacts in "other" settings (mainly leisure and social contacts) have occurred across all ages of adults over recent weeks (Figure S1). As August 2020 was a holiday period we have also compared weekday contacts over the year (Figure 2). This confirms that weekday adult contacts are broadly similar to those observed last August, but that children's mean rates of reported contacts are higher. The increase in mean recorded adult contact rates has occurred across all ages of adults (Figure 3).

Mean contact rates reported for school-aged children (5-17 years) have continued to rise since the Easter holidays (Figure 4), primarily due to continued increases in contacts in "other" settings (primarily leisure and social contacts) as shown in Figure S2. School-aged children report higher levels of contacts than pre-school-aged children and are reporting the highest levels of weekday contacts seen over the period of the pandemic (Figure 5).

Reported levels of skin-to-skin physical contacts (which may be taken as a proxy for higher risk contacts) remain at low levels compared with pre-pandemic studies [1] for both adults and children (Figure 6). They have not changed appreciably over the duration of the pandemic. Whether contacts occur indoors or outdoors is another measure of risk. Children's contacts appear to have increased in both settings since the Easter Holidays (Figure 7). However, adult outdoor mean rates of contact appear to have fallen somewhat since mid-April (Figure 8). A pattern that may indicate a shift towards more risky contacts.

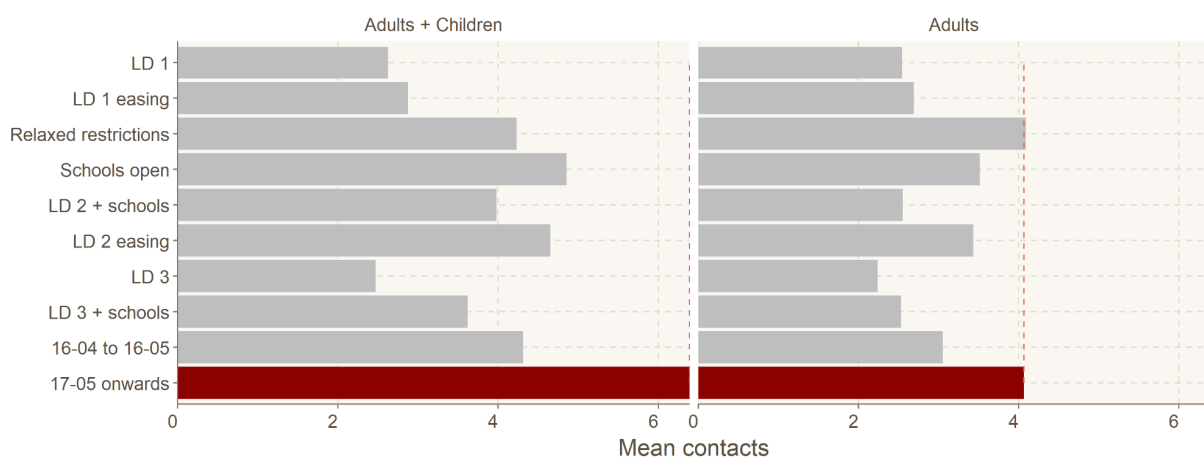
Discerning clear trends in regional contact patterns is difficult due to the smaller sample sizes. The English regions and the UK nations continued upward trend appears to have levelled off over the past few weeks (Figure 9).



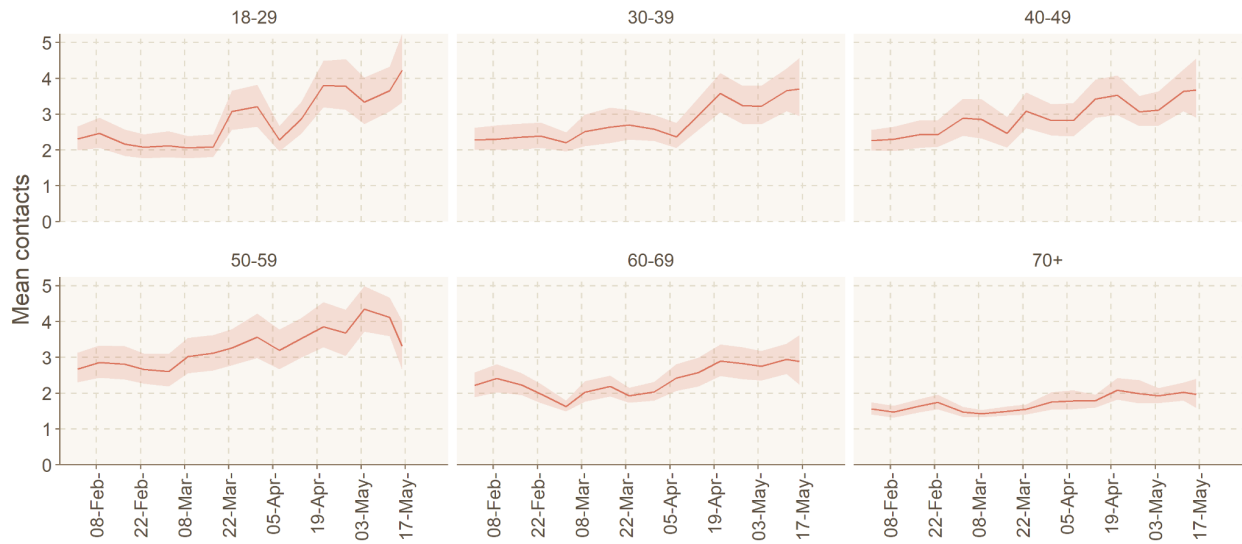
**Figure 1: Mean contacts in the UK since the 23rd March 2020 for adults and children (all participants) and adults only (18 year +).** Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.

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

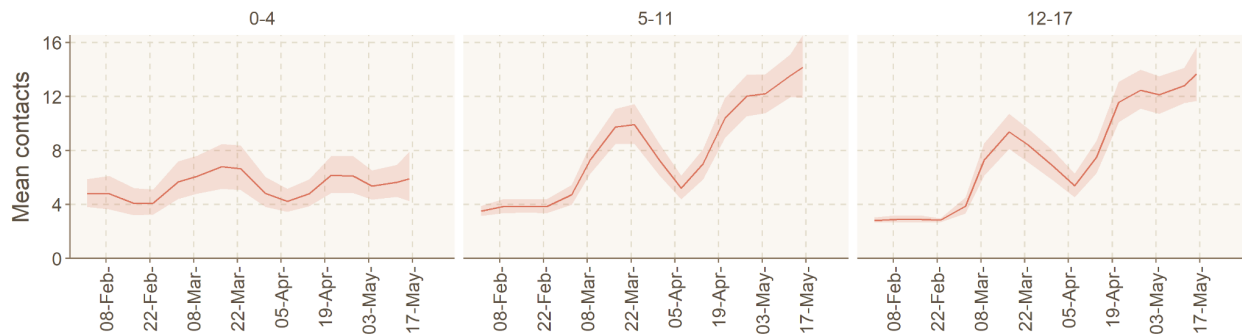
Period	Date	Period	Date
1. Lockdown 1 (LD 1)	24 Mar 2020 - 03 Jun 2020	6. Lockdown 2 easing	03 Dec 2020 - 19 Dec 2020
2. Lockdown 1 easing	04 Jun 2020 - 29 Jul 2020	7. Lockdown 3	05 Jan 2021 - 07 Mar 2021
3. Relaxed restrictions	30 Jul 2020 - 03 Sep 2020	8. Lockdown 3 + schools	08 Mar 2021 - 31 Mar 2021
4. School reopening	04 Sep 2020 - 24 Oct 2020	9. Step 2 + schools	16 Apr 2021 - 16 May 2021
5. Lockdown 2	05 Nov 2020 - 02 Dec 2020	10. Step 3	17 May 2021 - 25 May 2021



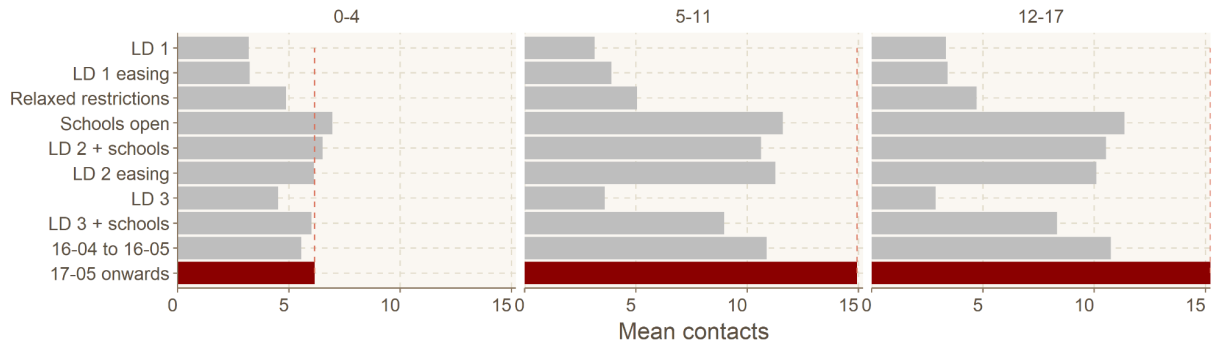
**Figure 2: Comparison of mean weekday contacts from the 17th of May to 25th of May to nine previous time periods of different restrictions for adults and children (all participants) and adults only (18 year +).** Current period highlighted in red with dashed line for easier comparison to previous periods.



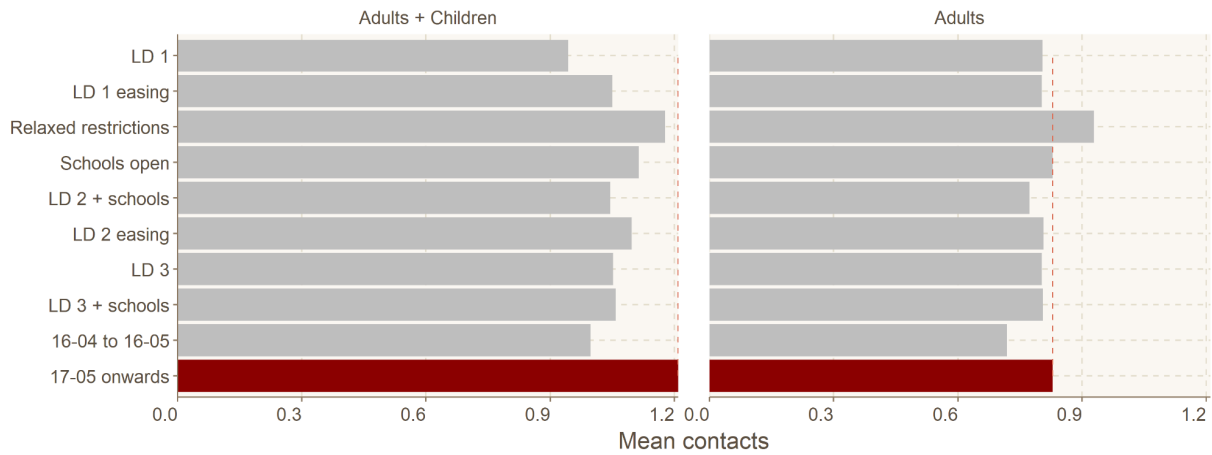
**Figure 3: Mean contacts in all settings by age-group for adults over time.** Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.



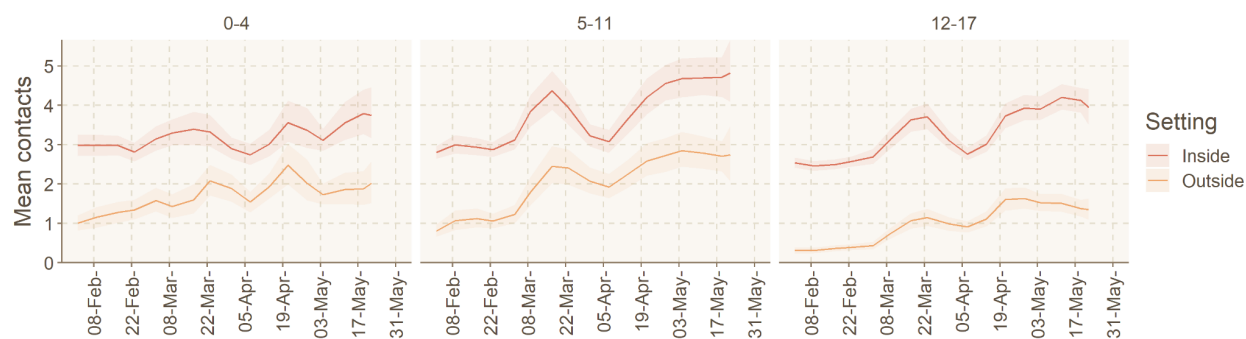
**Figure 4: Mean contacts in all settings by age-group for children over time.** Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.



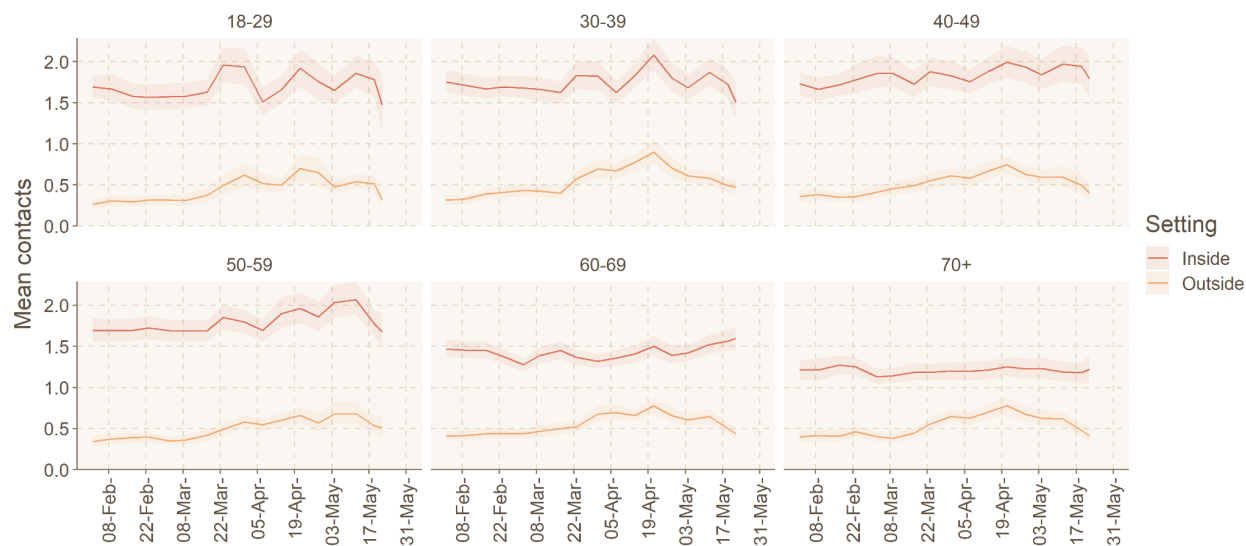
**Figure 5: Comparison of mean weekday contacts from the 17th of May to 25th of May to nine previous time periods of different restrictions by age for children.** Current period highlighted in red with dashed line for easier comparison to previous periods.



**Figure 6: Comparison of mean weekday physical contacts from the 17th of May to 20th of May to nine previous 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.



**Figure 7: Mean contacts indoors versus outdoors in all settings by age-groups for children 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. Note information on a contact being inside or outside is only available for individually reported contacts, i.e. is not present for all contacts, and a contact can be selected as inside and outside.



**Figure 8: Mean contacts indoors versus outdoors in all settings by age-groups 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. Note information on a contact being inside or outside is only available for individually reported contacts, i.e. is not available for all contacts, and a contact can be selected as inside and outside.



**Figure 9: Mean contacts in all settings in adults for UK nations and English regions 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.



## Methods

CoMix is a behavioural survey, launched on 24<sup>th</sup> of March 2020. The sample is broadly representative of the UK adult population. Participants 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 [2]. The contact survey is based on the POLYMOD contact survey [1].

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 data of the survey to the mean contacts reported during nine time periods over the previous year which represent different levels of restrictions.

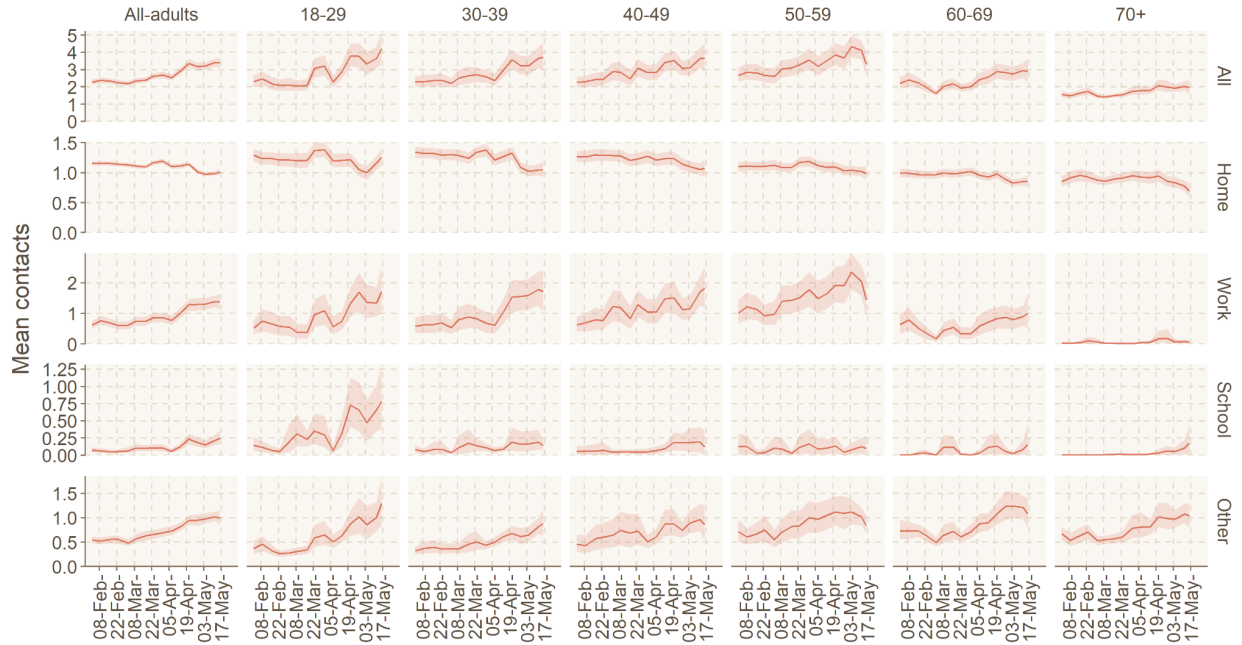
## Funding

Medical Research Council (MC\_PC\_19065), the European Commission (EpiPose 101003688) and the NIHR (CV220-088 - COMIX) and HPRU in Modelling & Health Economics (NIHR200908).

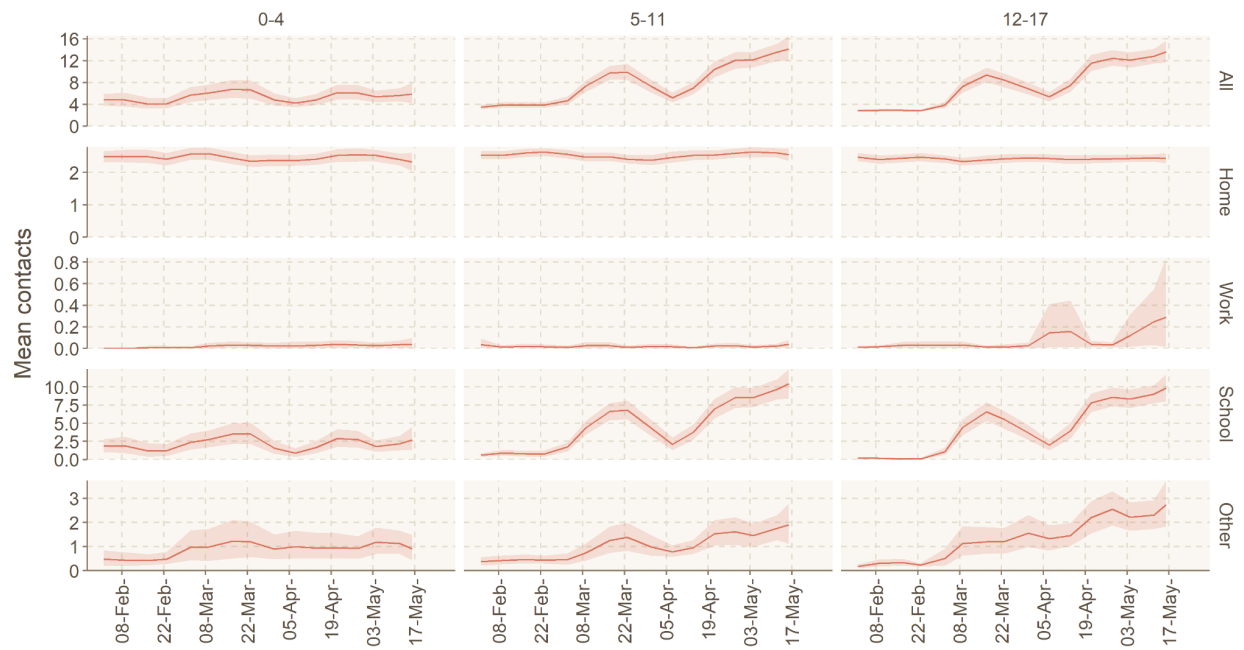
## References

1. 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.
2. 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.

## 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.