



# CoMix social contact survey: Report for Malta rounds 1 to 4

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**Survey dates:** 27 April 2021 to 17 October 2021

## Introduction & Methods

CoMix is a behavioural survey, first launched on 24th of March 2020 in the UK, and launched in Malta on 27 of April 2021. The sample is broadly representative of the adult population in Malta. Participant's are invited to respond to the survey approximately once every two weeks. In two waves, parents will complete the survey on behalf of a child in their household (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). Participants are instructed to report contacts individually, but are also given the opportunity to report aggregated estimates of contacts by age group and setting in case they did not list all contacts individually. Further details have been published elsewhere[1,2]. The contact survey is based on the POLYMOD contact survey[3].

We calculated and plotted the crude mean number of contacts by setting, duration, and participant to contact age groups. We used 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), and report . We look at the mean contacts by age and survey wave. The mean number of contacts is influenced by a few individuals who report very high numbers of contacts (often in a work context). We show means for all contacts and means number of contacts after truncating the maximum number of contacts recorded at 50 per individual per day.

We calculated the mean contacts for the contact matrices by using the socialmixr R package [4], with 50 bootstrapped samples. We used the World Population Prospect data from 2015 for country specific population estimates by age and gender, which is the latest available data in the socialmixr package. We constructed age-stratified contact matrices for nine age-groups (0-4, 5-11, 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, and 70+). For contacts, we do not have exact ages and therefore sampled from the reported age-group. The first round of data collected for children's contacts (Panel C, Wave 1) has been used to complete symmetric contact matrices in all previous waves. Children's contacts may have changed over time, especially depending on school attendance status, so this should be considered if there have been changes throughout the survey period.

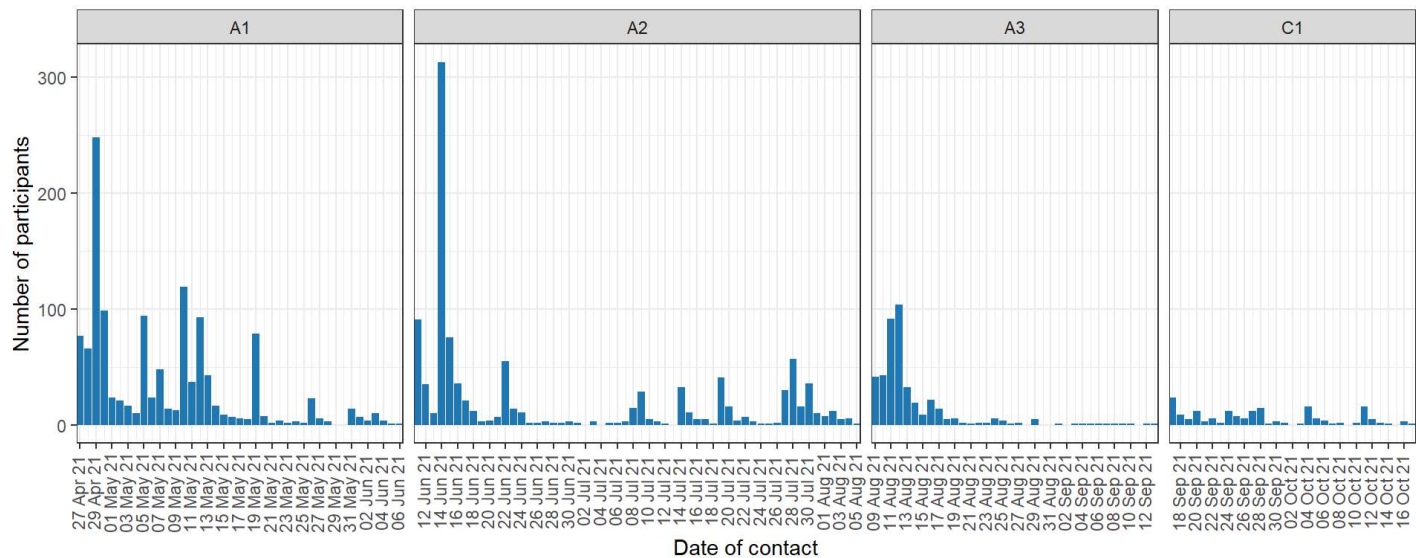
Timeline

The CoMix survey in Malta has had 3 waves of data collection covering from the period 27 of April 2021 to 17 of October 2021. Figure 1 shows survey response by date.

Wave	A1	A2	A3	C1
Start date	27 Apr 21	11 Jun 21	09 Aug 21	17 Sep 21
End date	06 Jun 21	05 Aug 21	13 Sep 21	17 Oct 21
Participants	1264	1078	425	180
Contacts	12223	8557	2192	1225

**Table 1. Survey wave summary.** Survey wave start and end dates, number of participants, and number of contacts.

**Figure 1: Survey responses by date.**



Participant demographics

Category	Group	Wave A1	Wave A2	Wave A3	Wave C1
All		1264	1078	425	180
Age	0-4	NA	NA	NA	53 (29.4%)
	5-17	NA	NA	NA	127 (70.6%)
	18-29	240 (19.0%)	185 (17.2%)	52 (12.2%)	NA
	30-39	306 (24.2%)	286 (26.5%)	95 (22.4%)	NA

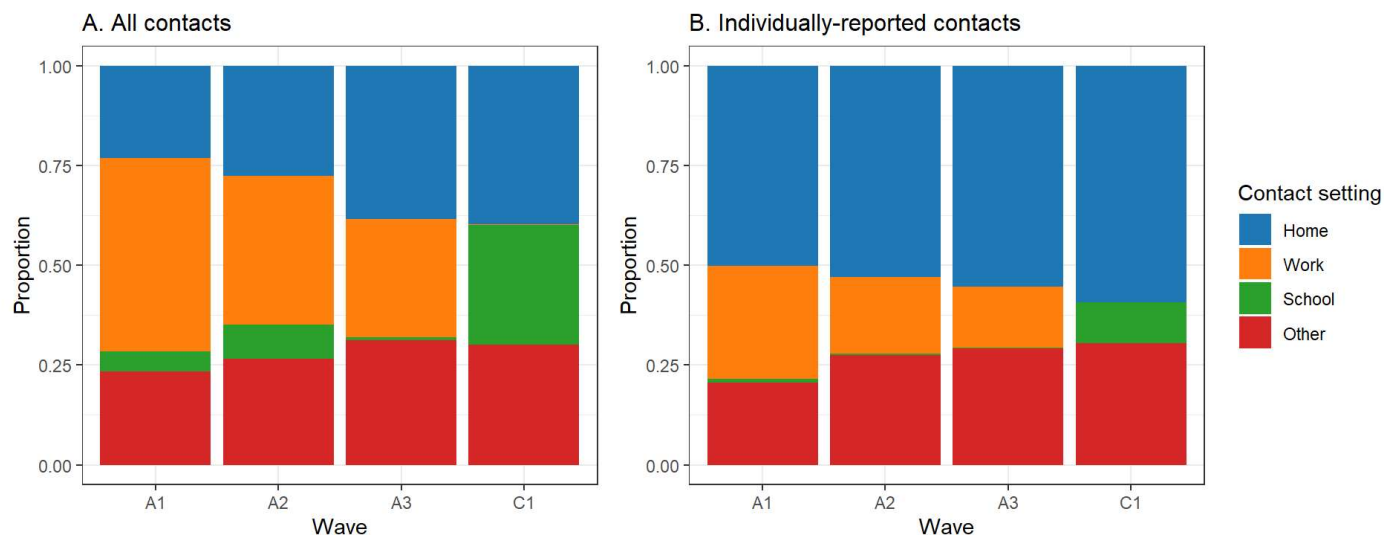
Category	Group	Wave A1	Wave A2	Wave A3	Wave C1
	40-49	262 (20.7%)	234 (21.7%)	81 (19.1%)	NA
	50-59	193 (15.3%)	166 (15.4%)	89 (20.9%)	NA
	60-69	178 (14.1%)	148 (13.7%)	74 (17.4%)	NA
	70+	85 (6.7%)	59 (5.5%)	34 (8.0%)	NA
Gender	Female	725 (57.4%)	636 (59.0%)	233 (54.8%)	123 (68.3%)
	Male	535 (42.3%)	438 (40.6%)	192 (45.2%)	57 (31.7%)
	Other or Missing	4 (0.3%)	4 (0.4%)	NA	NA
Household size	1	121 (9.6%)	90 (8.3%)	49 (11.5%)	NA
	2	323 (25.6%)	292 (27.1%)	132 (31.1%)	4 (2.2%)
	3-5	796 (63.0%)	672 (62.3%)	231 (54.4%)	169 (93.9%)
	6+	24 (1.9%)	24 (2.2%)	13 (3.1%)	7 (3.9%)

**Table 2. Participant demographics by wave for age, gender, and household size.**

## Contact characteristics

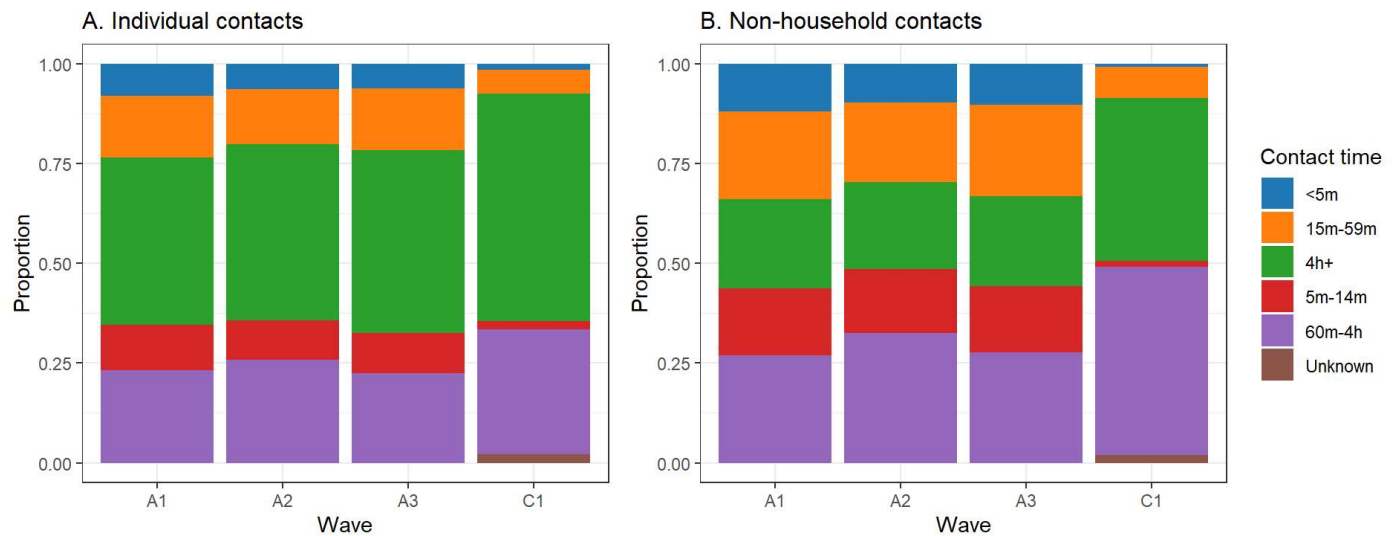
### Contact setting

**Figure 2. Proportion of contacts by setting and wave.** A) All contacts (both individually-reported and reported in aggregated contact questions); B) individually-reported contacts only.



## Contact duration

**Figure 3. Proportion of contacts by duration of contact and wave.** A) All individually-reported contacts; B) individually-reported contacts, excluding the participant's household members.

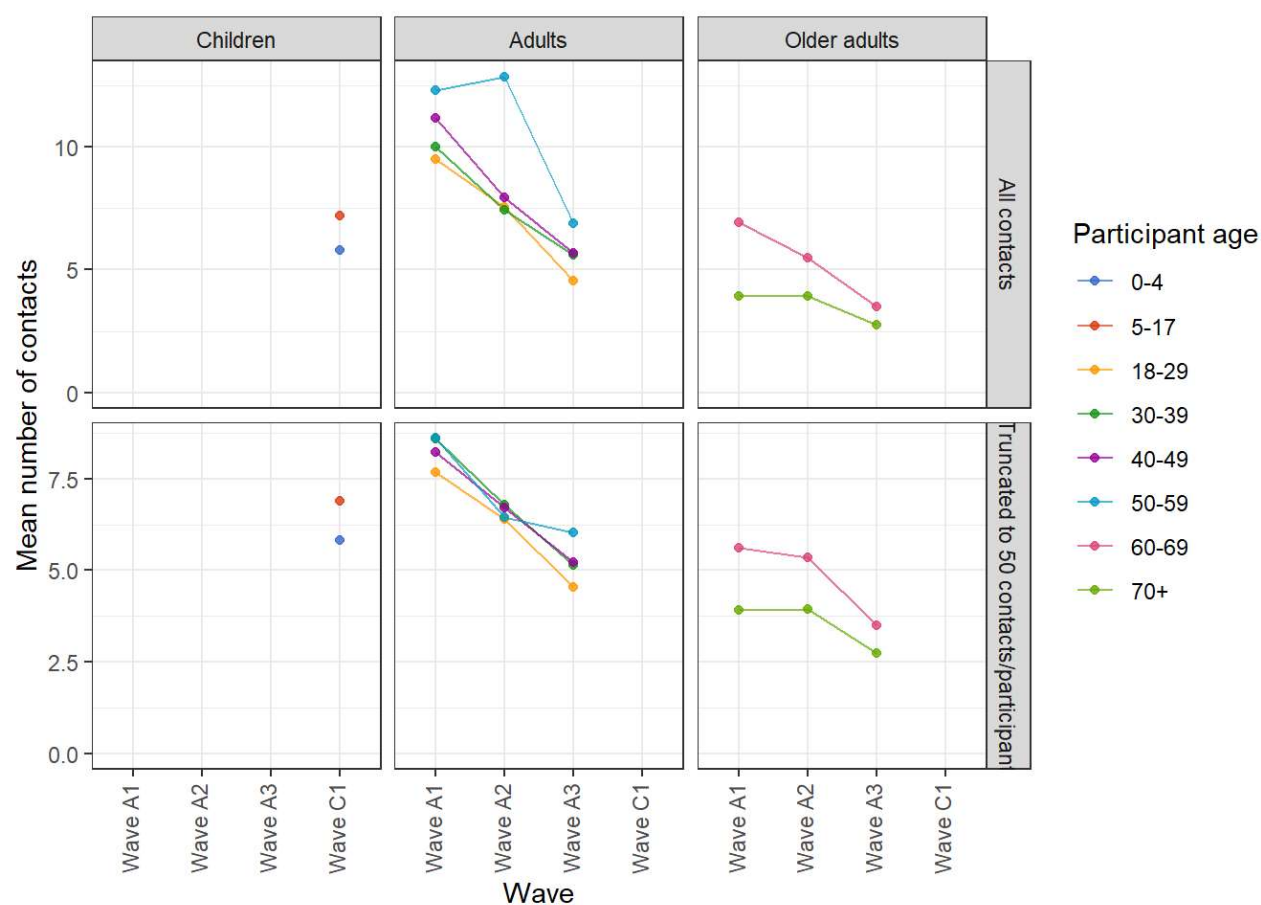


Category	Group	Wave A1	Wave A2	Wave A3	Wave C1
Contact setting	Home	2843 (23.3%)	2359 (27.6%)	843 (38.5%)	488 (39.8%)
	Work	5905 (48.3%)	3194 (37.3%)	650 (29.7%)	1 (0.1%)
	School	611 (5.0%)	726 (8.5%)	16 (0.7%)	368 (30.0%)
	Other	2864 (23.4%)	2278 (26.6%)	683 (31.2%)	368 (30.0%)
Contact time	<5m	462 (8.2%)	289 (6.5%)	96 (6.3%)	13 (1.6%)
	15m-59m	873 (15.4%)	610 (13.7%)	234 (15.4%)	49 (5.9%)
	4h+	2373 (41.9%)	1962 (44.1%)	699 (45.9%)	469 (56.9%)
	5m-14m	645 (11.4%)	437 (9.8%)	153 (10.0%)	17 (2.1%)
	60m-4h	1312 (23.2%)	1150 (25.9%)	342 (22.4%)	258 (31.3%)
	Unknown	NA	NA	NA	18 (2.2%)

**Table 3. Contacts by setting and duration of contact and wave.** Number and percentage of contacts by category for all contacts (individually-reported and reported in aggregated contact questions).

## Contact means

**Figure 4. Crude mean contacts by participant age group and wave.** Reported by all contacts and contacts truncated to 50 per participant per day.



Contacts	Participant age	Wave A1	Wave A2	Wave A3	Wave C1
All	All	9.67	7.94	5.16	6.81
Truncated to 50 contacts per participant	All	7.61	6.30	4.79	6.57
All contacts	18-29	9.50	7.54	4.54	NA
	30-39	10.03	7.44	5.59	NA
	40-49	11.20	7.95	5.70	NA
	50-59	12.30	12.86	6.88	NA
	60-69	6.93	5.47	3.49	NA
	70+	3.91	3.93	2.74	NA
	0-4	NA	NA	NA	5.81
	5-17	NA	NA	NA	7.22

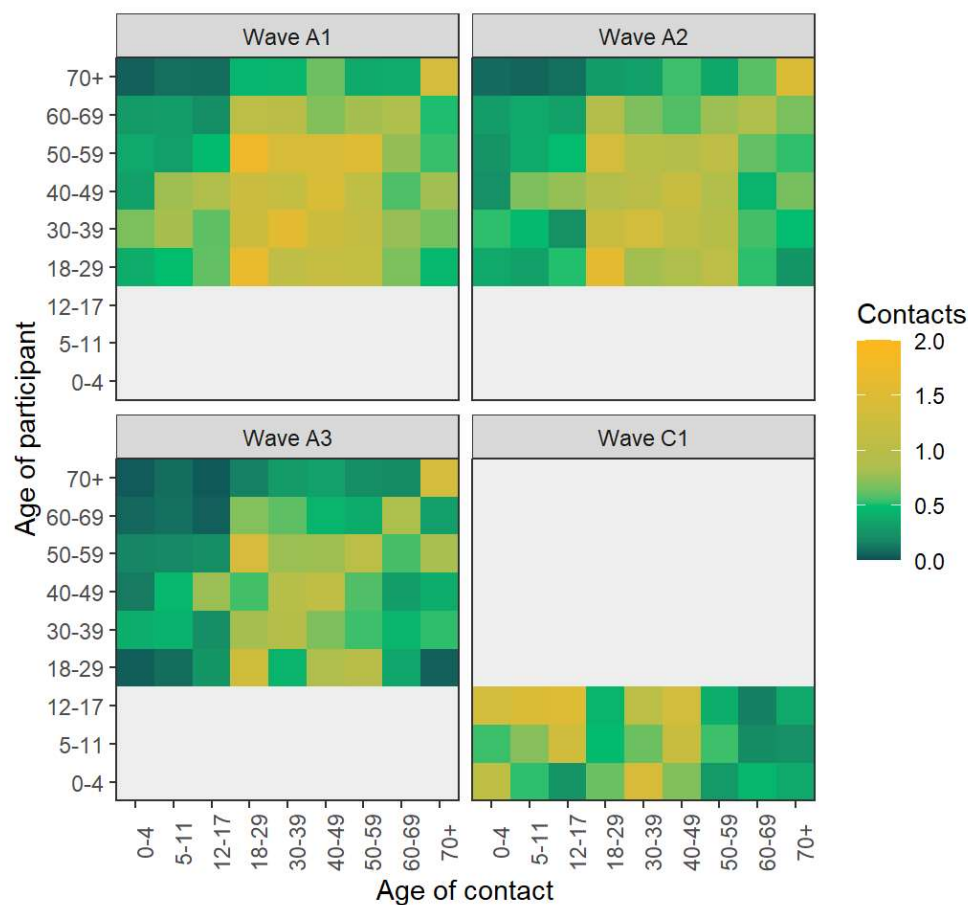
Contacts	Participant age	Wave A1	Wave A2	Wave A3	Wave C1
Truncated to 50 contacts/participant	18-29	7.68	6.39	4.54	NA
	30-39	8.58	6.79	5.15	NA
	40-49	8.23	6.70	5.23	NA
	50-59	8.61	6.45	6.02	NA
	60-69	5.61	5.36	3.49	NA
	70+	3.91	3.93	2.74	NA
	0-4	NA	NA	NA	5.81
	5-17	NA	NA	NA	6.88

**Table 4. Crude mean contacts by participant age group for each wave.**

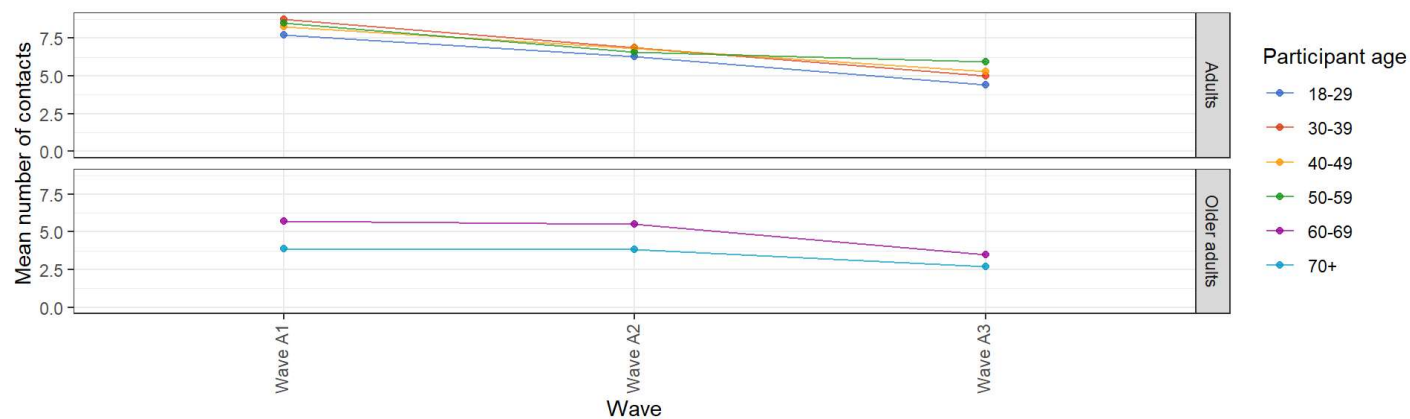
## Contact Matrices

All contacts

**Figure 5. Contact matrices by wave.** Contacts truncated to 50 per participant per day, adjusted for day of week.



**Figure 6. Adjusted contact means by participant age group.** Contacts truncated to 50 per participant per day, adjusted for day of week.



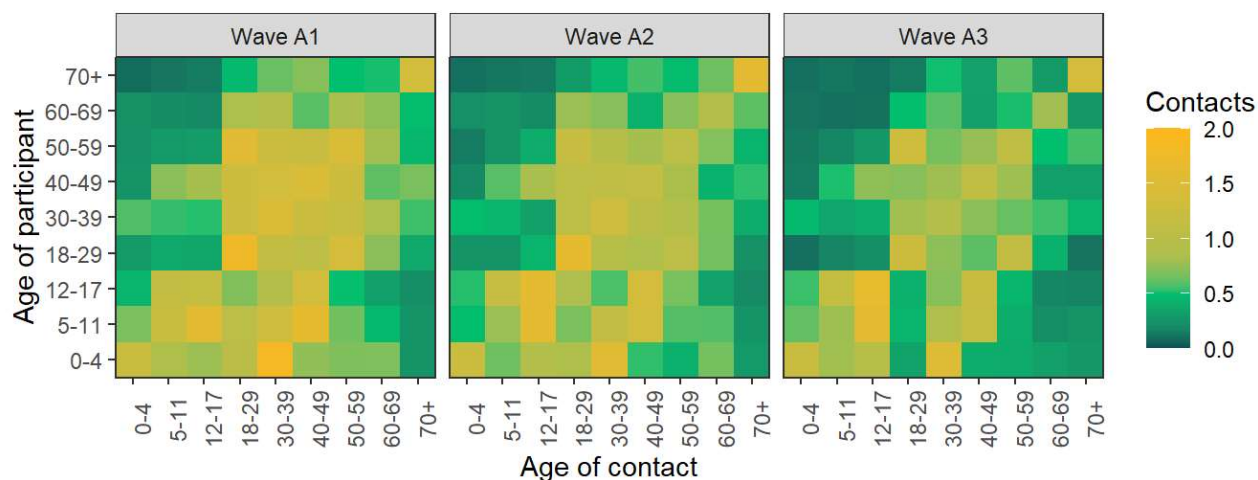
**Table 5. Adjusted contact means by participant age group.** Contacts truncated to 50 per participant per day, adjusted for day of week.

Participant age	Wave A1	Wave A2	Wave A3	Wave C1
0-4	NA	NA	NA	5.71
5-11	NA	NA	NA	5.86

Participant age	Wave A1	Wave A2	Wave A3	Wave C1
12-17	NA	NA	NA	8.10
18-29	7.71	6.31	4.40	NA
30-39	8.76	6.86	5.00	NA
40-49	8.24	6.81	5.28	NA
50-59	8.52	6.57	5.93	NA
60-69	5.73	5.54	3.50	NA
70+	3.90	3.85	2.71	NA

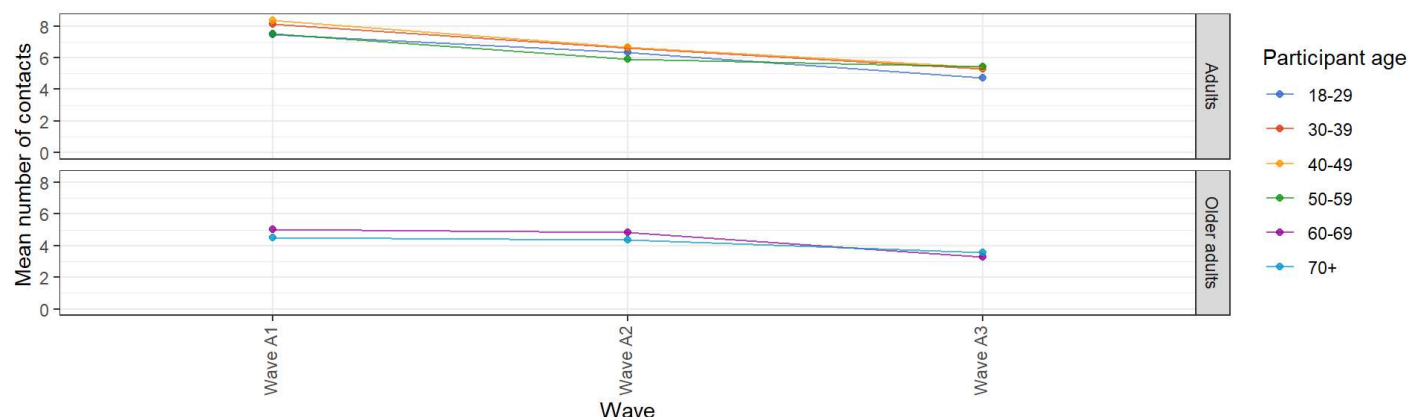
## Combined contacts

**Figure 7. Symmetric combined matrices by wave.** Adult survey waves each combined with the single round of data collection for children's contacts (wave C1) to provide an estimate of overall contacts. Children's contacts may have changed over time, especially depending on school attendance status. Contacts truncated to 50 per participant per day, adjusted for day of week and country population by age using the World Population Prospects population data.





**Figure 8. Combined contact means by wave.** Contact means as calculated from symmetric, combined symmetric matrices. Adult survey waves each combined with the single round of data collection for children's contacts (wave C1) to provide an estimate of overall contacts. Children's contacts may have changed over time, especially depending on school attendance status. Contacts truncated to 50 per participant per day, adjusted for day of week and country population by age using the World Population Prospect population data.



**Table 6. Participant contact means by wave.** Contact means as calculated from symmetric, participant to contact symmetric matrices. Adult survey waves each combined with the single round of data collection for children's contacts (wave C1) to provide an estimate of overall contacts. Children's contacts may have changed over time, especially depending on school attendance status. Contacts truncated to 50 per participant per day, adjusted for day of week and country population by age using the World Population Prospect population data.

Participant age	Wave A1	Wave A2	Wave A3
0-4	8.09	7.10	6.19
5-11	8.79	7.42	6.34
12-17	6.70	7.26	6.48
18-29	7.44	6.35	4.74
30-39	8.13	6.61	5.30
40-49	8.36	6.67	5.41
50-59	7.50	5.92	5.45
60-69	5.01	4.85	3.30
70+	4.50	4.37	3.54

## 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.
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3. 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.
4. Sebastian Funk (2020). socialmixr: Social Mixing Matrices for Infectious Disease Modelling. R package version 0.1.7.