Supplementary Information for
Extremely high SARS-CoV-2 seroprevalence in a strictly-Orthodox Jewish community in the UK

Authors: Katherine M Gaskell[1], Marina Johnson[2], Victoria Gould[1], Adam Hunt[2], Neil RH Stone[1,3], William Waites[4], Ben Kasstan[5], Tracey Chantler[6], Sham Lal[1], Chrissy h. Roberts[1], David Goldblatt[2], Rosalind M Eggo[4] and Michael Marks[1,3]
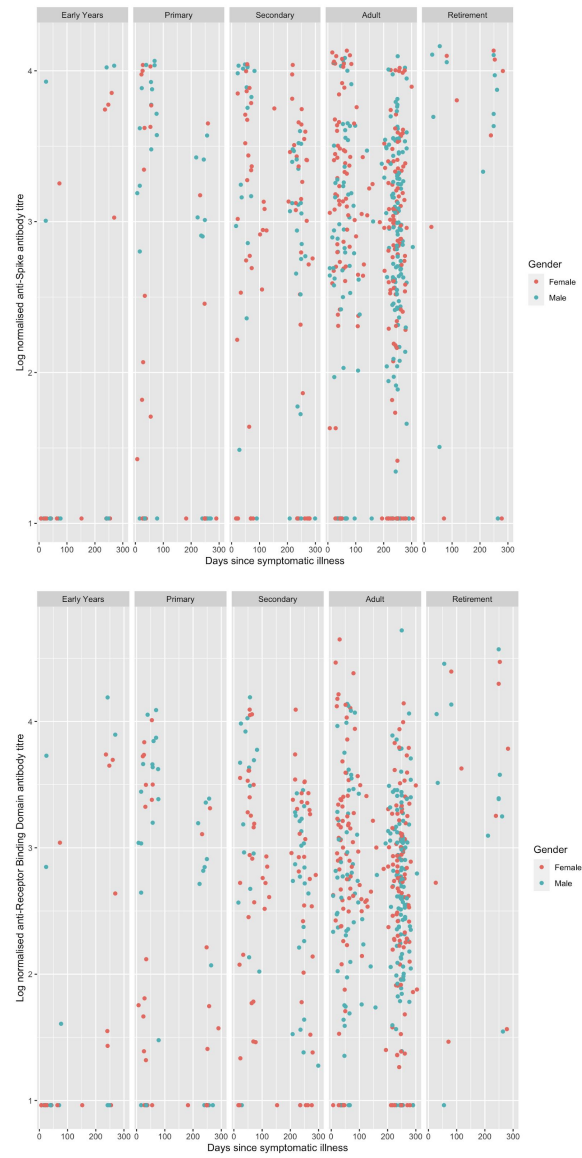
1. Department of Clinical Research, London School of Hygiene & Tropical Medicine, Keppel Street, London. WC1E 7HT UK
2. Great Ormond Street Institute of Child Health Biomedical Research Centre, University College London
3. Hospital for Tropical Diseases, University College London Hospital NHS Foundation Trust, London
4. Centre for Mathematical Modelling of Infectious Diseases, London School of Hygiene & Tropical Medicine, Keppel Street, London. WC1E 7HT UK
5. Centre for Health, Law and Society, University of Bristol Law School, Bristol. BS1 1RJ
6. Department of Global Health and Development, London School of Hygiene & Tropical Medicine, Keppel Street, London. WC1E 7HT UK
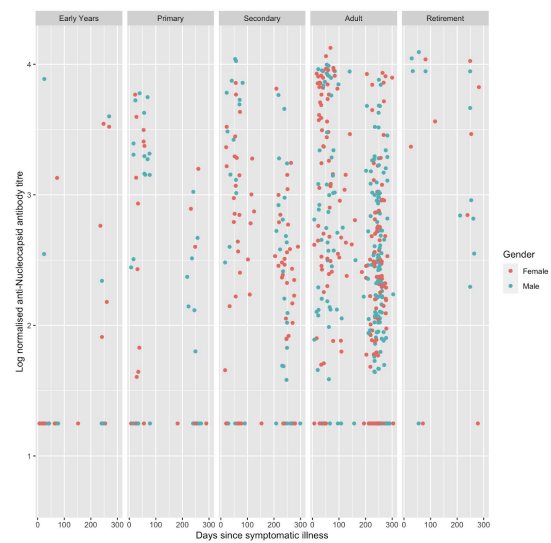
1. Demographics

Supplementary Table 1: Survey respondent demographics

Variable		Frequency
Gender	Male	853 (48.5%)
	Female	906 (51.5%)
Age	Median (IQR)	14 years (7-33)
Age Group	Early Years (0-4 years)	307 (17.5%)
	Primary School (5-10 years)	357 (20.3%)
	Secondary School (11-18 years)	360 (20.5%)
	Adults (19-66 years)	684 (38.9%)
	Retirement Age Adults (67+)	51 (2.9%)
Education and Employment	In formal education	776 (44.1%)
	Working from home	238 (13.5%)
	Working outside home	133 (7.6%)
	Neither in education or formal employment	612 (34.8%)
Self Reported Comorbidities	Asthma	11 (0.6%)
	COPD	2 (0.1%)
	Hypertension	31 (1.8%)
	Diabetes	21 (1.2%)
	Cardiovascular Disease	9 (0.5%)
	Chronic Kidney Disease	1 (0.1%)
	Dementia	0 (0%)

2. Antibody Titres and time since self-reported COVID-19-like symptoms

Supplementary Figure 1. Log normalised antibody titres against spike, receptor binding domain and nucleocapsid antigens by time since self-reported COVID-19 symptoms. Values are shown stratified by age (panels) and gender (colour).

3. Antibody Seroprevalence by antibody target and age group

Supplementary Table 2: Age stratified seroprevalence.

Age Group	anti-Spike SARS-CoV-2 antibodies	anti-Receptor Binding Domain antibodies	anti-Nucleocapsid SARS-CoV-2 antibodies
Early Years (0-4 years)	27.6% (20.8-35.6%)	22.4% (16.2 - 30.0%)	18.4% (12.8 - 25.7%)
Primary School (5-10 years)	56.4% (49.8-62.7%)	43.8% (41.8 - 54.9%)	42.8% (36.4-49.4%)
Secondary School (11-18 years)	73.8% (68.2-78.8%)	65.6% (59.7 - 71.1%)	50.9% (44.9-56.9%)
Adults (19-66 years)	74% (70.0-77.6%)	57.8% (53.5-62.0%)	45.4% (41.1-49.7%)
Retirement Age Adults (67+)	54.8 (38.8-69.8%)	40.5% (26.0-56.7%)	45.2% (30.2-61.2%)

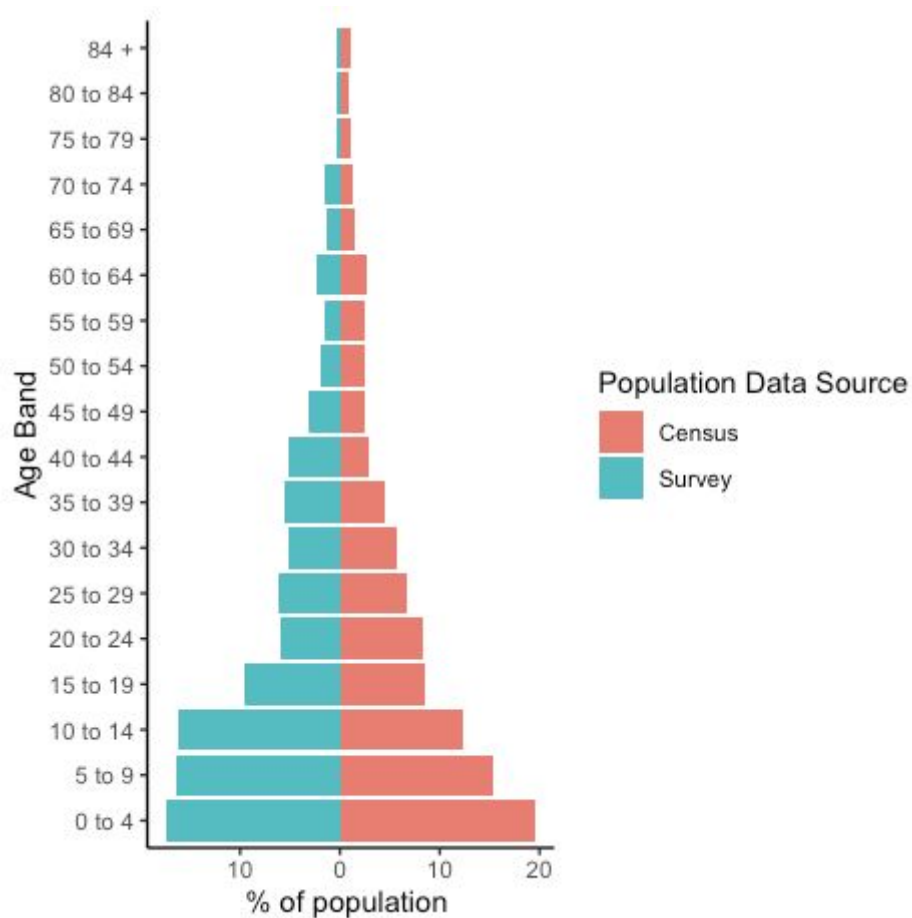### 4. Positive and negative predictive value of symptoms by age group

Supplementary Table 2: Positive and negative predictive values stratified by age for symptoms reported as COVID-19-like illness. PPV = positive predictive value, NPV = negative predictive value.

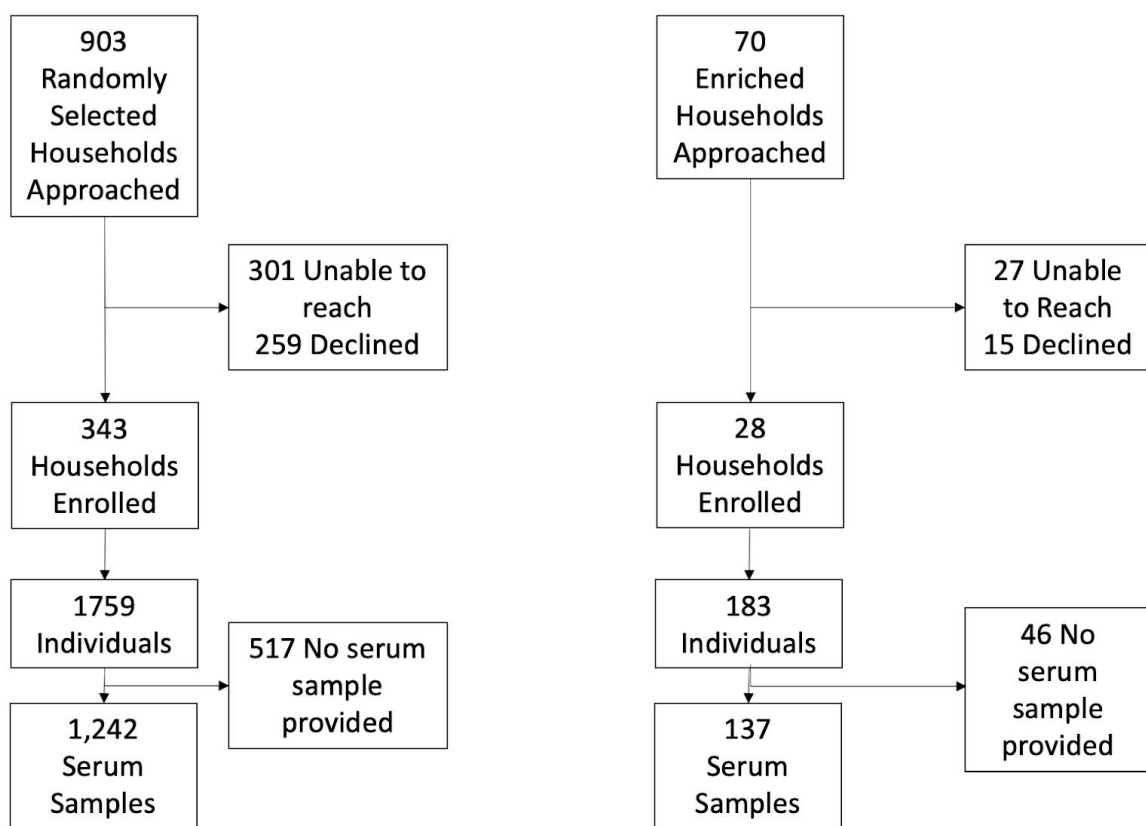| Age Group	Fever		Cough		Loss of Smell or Taste	
	PPV	NPV	PPV	NPV	PPV	NPV
Overall	79.0%	38.3%	81.6%	43.6%	94.1%	42.7%
Early Years (0-4 years)	33.3%	68.2%	36.4%	76.1%	33.3%	68.1%
Primary School (5-10 years)	57.1%	42.9%	65.2%	48.3%	100%	44.6%
Secondary School (11-18 years)	63.0%	25.0%	73.0%	28.0%	88.9%	29.1%
Adults (19-66 years)	90.9%	31.0%	91.4%	35.9%	96.6%	37.1%
Retirement Age Adults (67+)	77.8%	51.5%	90.0%	56.3%	80.0%	48.6%

5. Sensitivity Analysis

In a sensitivity analysis in which the threshold for spike positivity was doubled, seroprevalence was 49.7%.

6. Population Structure

Supplementary Figure 2. Population age structure for survey respondents compared to the overall Haredi population. Census data is from 2011.

7. Consort Diagram

Supplementary Figure 3. Consort diagram showing enrollment of both the randomly selected and the enriched households into the study