

## Kinetics and seroprevalence of SARS-CoV-2 antibodies in children

To the best of our knowledge, no longitudinal study has reported the kinetics of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antibody responses in children. Here we report the results of the second round of antibody testing in children from a prospective multicentre cohort study in the UK. The protocol and initial results are available elsewhere.<sup>1,2</sup> Recruitment took place between April 16, and July 3, 2020, at five UK sites (Belfast, Cardiff, Glasgow, London, and Manchester) and included healthy children aged 2–15 years. Follow-up visits at all five UK sites took place between June 26, and Aug 15, 2020.

Of the 992 participants in the first round, 849 (86%) returned. Seroprevalence was measured with the Elecsys Anti-SARS-CoV-2 Total Antibody assay (Roche, Basel, Switzerland) and the LIAISON SARS-CoV-2 S1/S2 IgG assay (DiaSorin, Saluggia, Italy). The median time between initial and follow-up visits was 62 days (IQR 52–70; range 43–81).

65 (7.66%, 95% CI 6.05–9.64) of 849 tests were reactive based on the manufacturers' suggested cutoffs. This proportion was not substantially different to the seroprevalence (6.9% 95% CI 5.4 to 8.6; 68 of 992) reported during recruitment. The median age of participants with reactive antibody tests during the second round was 10 years (IQR 7–14; range 3–16). As with the baseline results, there was variation in seroprevalence between sites (appendix p 3).

45 participants with reactive antibody tests in the first round who attended the follow-up visit had reactive antibody tests in the second round. In these individuals, we observed increases in antibody titres from the first round to the second round with both assays: with Roche's Elecsys assay, mean antibody titres increased from 84.7 cutoff index (COI) to 115.8 COI (difference 31.08, 95% CI 13.82–48.34,  $p=0.0007$ ), and with DiaSorin's LIAISON assay, mean antibody titres increased from 67.5 AU/mL to 81.4 AU/mL (13.89, 0.31–27.46;  $p=0.0452$ ).

These results indicate that antibody titres in children exposed to SARS-CoV-2 remain at a detectable level for at least 62 days, and that

in this cohort mean antibody titres increased over time. This finding is consistent with available data on antibody titres in adults.<sup>3,4</sup>

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- 2 Corr M, Christie S, Watson C, et al. Seroprevalence of SARS-CoV-2 antibodies in children of healthcare workers—a prospective multicentre cohort study protocol. *BMJ Open* (in press).
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See Online for appendix