

Supplementary Materials

Table S1: Characteristics of study participants

| | All participants recruited | | All participants who returned sample | | Participants in IgG-S analyses | | Participants in IgG-N analyses | |
|---|----------------------------|------|--------------------------------------|-----|--------------------------------|-----|--------------------------------|-----|
| | N | % | N | % | N | % | N | % |
| Age, years | | | | | | | | |
| <30 | 2 291 | 11.3 | 2049 | 11 | 228 | 15 | 126 | 7 |
| 30-39 | 3 169 | 15.7 | 2898 | 15 | 243 | 16 | 168 | 10 |
| 40-49 | 2 514 | 12.4 | 2340 | 12 | 181 | 12 | 143 | 8 |
| 50-59 | 3 928 | 19.5 | 3721 | 20 | 338 | 22 | 505 | 29 |
| 60-69 | 4 071 | 20.2 | 3881 | 21 | 279 | 18 | 460 | 26 |
| 70+ | 4 222 | 20.9 | 3998 | 21 | 245 | 16 | 347 | 20 |
| | | | | | | | | |
| Gender | | | | | | | | |
| Men | 8 877 | 44 | 8217 | 44 | 636 | 42 | 764 | 44 |
| Women | 11 318 | 56 | 10670 | 57 | 878 | 58 | 985 | 56 |
| | | | | | | | | |
| Ethnicity^a | | | | | | | | |
| White | 17 626 | 87.5 | 16476 | 87 | 1 241 | 82 | 1 391 | 80 |
| Other ethnicity | 2 526 | 12.5 | 2372 | 13 | 271 | 18 | 354 | 20 |
| | | | | | | | | |
| Townsend Deprivation Index^b | | | | | | | | |
| Less Deprived | 6 971 | 34.5 | 6576 | 35 | 453 | 30 | 571 | 33 |
| Average | 8 249 | 40.8 | 7728 | 41 | 590 | 39 | 715 | 41 |
| More Deprived | 4 975 | 24.6 | 4583 | 24 | 471 | 31 | 463 | 27 |
| | | | | | | | | |
| UK Region | | | | | | | | |
| East Midlands | 1 201 | 5.9 | 1133 | 6 | 76 | 5 | 90 | 5 |
| East of England | 938 | 4.6 | 889 | 5 | 53 | 4 | 60 | 3 |
| London | 6 059 | 30 | 5631 | 30 | 637 | 42 | 663 | 38 |
| North East | 832 | 4.1 | 780 | 4 | 44 | 3 | 63 | 4 |
| North West | 2 175 | 10.8 | 2035 | 11 | 167 | 11 | 205 | 12 |
| Scotland | 1 227 | 6.1 | 1168 | 6 | 60 | 4 | 70 | 4 |
| South East | 2 604 | 12.9 | 2441 | 13 | 166 | 11 | 193 | 11 |
| South West | 1 379 | 6.8 | 1301 | 7 | 65 | 4 | 87 | 5 |
| Wales | 791 | 3.9 | 742 | 4 | 37 | 2 | 56 | 3 |
| West Midlands | 1 407 | 7 | 1301 | 7 | 113 | 8 | 123 | 7 |
| Yorkshire and The Humber | 1 582 | 7.8 | 1466 | 8 | 96 | 6 | 139 | 8 |
| | | | | | | | | |
| All | 20 195 | 100 | 18 887 | 100 | 1514 | 100 | 1 749 | 100 |

IgG-S antibody analyses restricted to SARS-CoV-2 cases with one or more IgG-S tests following diagnosis. IgG-N antibody analyses restricted to SARS-CoV-2 cases with IgG-N test following diagnosis. ^aExcludes participants of unknown ethnicity. ^bArea-level derived measure of socio-economic deprivation (categories are defined as: <-2 (less deprived), -2 to <2

Table S2: Proportion of SARS-CoV-2 cases seropositive for IgG-S antibodies at 6 months following infection

| | SARS-CoV-2 cases, n | Positive for IgG-S antibodies, n | Proportion positive for IgG-S antibodies, % (95% CI) | χ^2 |
|---|---------------------|----------------------------------|--|----------|
| Age, years | | | | |
| <30 | 140 | 125 | 89.3% (82.9% - 93.9%) | |
| 30-39 | 181 | 169 | 93.4% (88.7% - 96.5%) | |
| 40-49 | 138 | 123 | 89.1% (82.7% - 93.8%) | |
| 50-59 | 256 | 239 | 93.4% (89.6% - 96.1%) | |
| 60-69 | 210 | 194 | 92.4% (87.9% - 95.6%) | |
| 70+ | 175 | 157 | 89.7% (84.2% - 93.8%) | 0.44 |
| Gender | | | | |
| Female | 646 | 599 | 92.7% (90.4% - 94.6%) | |
| Male | 454 | 408 | 89.9% (86.7% - 92.5%) | 0.09 |
| Ethnicity^a | | | | |
| White | 890 | 812 | 91.2% (89.2% - 93.0%) | |
| Other ethnicity | 208 | 193 | 92.8% (88.4% - 95.9%) | 0.47 |
| Townsend Deprivation Index^b | | | | |
| Less deprived | 338 | 314 | 92.9% (89.6% - 95.4%) | |
| Average | 422 | 386 | 91.5% (88.4% - 94.0%) | |
| More deprived | 340 | 307 | 90.3% (86.6% - 93.2%) | 0.47 |
| All | 1 100 | 1 007 | 91.5% (89.7% - 93.1%) | |

Analyses among 1100 SARS-CoV-2 cases who had an IgG-S antibody test between 150-180 days following infection (mean 164 days; see Figure 2). ^aExcludes 2 participants of unknown ethnicity. ^bArea-level derived measure of socio-economic deprivation (categories are defined as: <-2 (less deprived), -2 to <2 (average), 2+ (more deprived)).

Table S3: Proportion of SARS-CoV-2 cases seropositive for IgG-N antibodies at 18 months after infection

| | SARS-CoV-2 cases, n | Positive for IgG-N antibodies, n | Proportion positive for IgG-N antibodies, % (95% CI) | χ^2 |
|---|---------------------|----------------------------------|--|----------|
| Age, years | | | | |
| <30 | 101 | 66 | 65.3% (55.2% - 74.5%) | |
| 30-39 | 149 | 107 | 71.8% (63.9% - 78.9%) | |
| 40-49 | 132 | 94 | 71.2% (62.7% - 78.8%) | |
| 50-59 | 236 | 178 | 75.4% (69.4% - 80.8%) | |
| 60-69 | 213 | 158 | 74.2% (67.8% - 79.9%) | |
| 70+ | 191 | 139 | 72.8% (65.9% - 79.0%) | 0.54 |
| Gender | | | | |
| Female | 598 | 434 | 72.6% (68.8% - 76.1%) | |
| Male | 433 | 311 | 71.8% (67.3% - 76.0%) | 0.79 |
| Ethnicity^a | | | | |
| White | 833 | 591 | 70.9% (67.7% - 74.0%) | |
| Other ethnicity | 196 | 152 | 77.6% (71.1% - 83.2%) | 0.06 |
| Townsend Deprivation Index^b | | | | |
| Less deprived | 322 | 232 | 72.0% (66.8% - 76.9%) | |
| Average | 415 | 295 | 71.1% (66.5% - 75.4%) | |
| More deprived | 294 | 218 | 74.1% (68.7% - 79.1%) | 0.66 |
| All | 1 031 | 745 | 72.3% (69.4% - 75.0%) | |

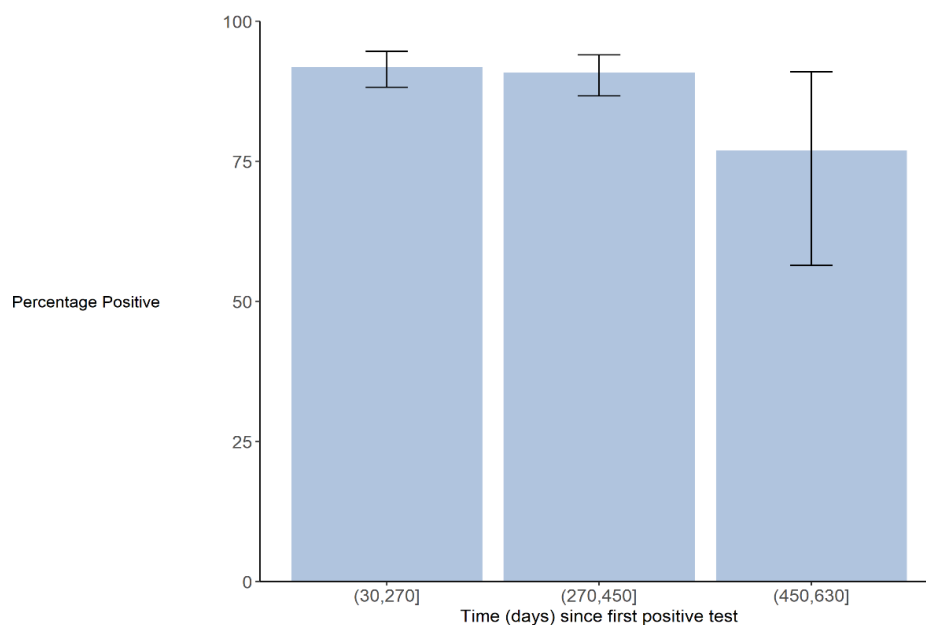
Analyses among 1031 SARS-CoV-2 cases who had an IgG-N antibody test between 450-630

days following infection (i.e. the last time period analysed; see Figure 2) ^aExcludes 2

participants of unknown ethnicity. ^bArea-level derived measure of socio-economic

deprivation (categories are defined as: <-2 (less deprived), -2 to <2 (average), 2+ (more deprived)).

Figure S1: Antibody persistence to the N antigen over an 18 month period in days since the first positive PCR test



| | | | |
|-------------|-------------|-------------|-------------|
| Total, n | 306 | 262 | 26 |
| Positive, n | 281 | 238 | 20 |
| % | 91.8% | 90.8% | 76.9% |
| 95% CI | 88.2%-94.6% | 86.7%-94.0% | 56.4%-91.0% |
| Mean, days | 92 | 362 | 540 |

Analyses among 674 SARS-CoV-2 cases with IgG-N test following diagnosis (78 individuals are omitted from the plot as they have a duration of follow up less than 30 days and a further 2 individuals are omitted from the plot as they exceed 630 days follow up post infection). Proportions are % (95% CI) of IgG-N seropositive cases among participants that returned a valid test during each period; participants provided one IgG-N test only. Figure shows the observed proportion with 95% confidence interval. The table below the figure shows the

number of participants in each bar, as well as the number positive and the % positive with 95% confidence interval. Date of infection was determined by PCR test. (30-270) represents upto 9 months, (270-450) represents 9 to 15 months, and (450-630] represents 15 to 21 months.