



RESEARCH ARTICLE

Behavioural responses to SARS-CoV-2 antibody testing in England: REACT-2 study [version 1; peer review: awaiting peer review]

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Abstract

Background: This study assesses the behavioural responses to SARS-CoV-2 antibody test results as part of the REal-time Assessment of Community Transmission-2 (REACT-2) research programme, a large community-based surveillance study of antibody prevalence in England.

Methods: A follow-up survey was conducted six weeks after the SARS-CoV-2 antibody test. The follow-up survey included 4500 people with a positive result and 4039 with a negative result. Reported changes in behaviour were assessed using difference-in-differences models. A nested interview study was conducted with 40 people to explore how they thought through their behavioural decisions.

Results: While respondents reduced their protective behaviours over

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the six weeks, we did not find evidence that positive test results changed participant behaviour trajectories in relation to the number of contacts the respondents had, for leaving the house to go to work, or for leaving the house to socialise in a personal place. The qualitative findings supported these results. Most people did not think that they had changed their behaviours because of their test results, however they did allude to some changes in their attitudes and perceptions around risk, susceptibility, and potential severity of symptoms.

Conclusions: We found limited evidence that knowing your antibody status leads to behaviour change in the context of a research study. While this finding should not be generalised to widespread self-testing in other contexts, it is reassuring given the importance of large prevalence studies, and the practicalities of doing these at scale using self-testing with lateral flow immunoassay (LFIA).

Keywords

SARS-CoV-2, COVID-19, lateral flow immunoassay, behavioural change

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Introduction

As part of the national response to the novel coronavirus (SARS-CoV-2), the REal-time Assessment of Community Transmission-2 (REACT-2) study has been conducting large community-based surveillance of antibody prevalence¹. From June to November 2020, these cross-sectional studies have involved antibody tests on 526,641 people. These are home-based tests using lateral flow devices with participants reading their own results and reporting them via an online or telephone questionnaire.

There is limited evidence about how people respond to learning their SARS-CoV-2 antibody test results. Early findings from an online survey among frontline healthcare workers in England who had previously tested positive for infection suggested that some changed their behaviour to disregard social distancing and hand washing guidelines². Framing and communication of the result affects how people respond, with one survey indicating that referring to 'immunity' rather than 'antibody' increased the likelihood that people would interpret a positive result as meaning they were at lower risk of catching coronavirus in the future³.

Here, we assessed people's responses to SARS-CoV-2 antibody test results as part of the REACT-2 research programme. In a quantitative survey we measured reported behaviour change following testing, and in a nested interview study explored how participants thought through their behavioural decisions. The findings provide some of the earliest evidence of how SARS-CoV-2 antibody tests might impact individual's adherence to protective behaviour.

Methods

Ethics statement

This REACT programme study obtained research ethics approval from the South Central-Berkshire B Research Ethics Committee (IRAS ID: 283787). Participants provided informed consent when they registered for the study (via electronic consent), for participation in the follow-up survey (via electronic consent) and for interviews (via verbal consent). Verbal consent was sought as this was proportionate to the level of engagement we had with participants and was less burdensome for participants given the research was conducted remotely rather than face-to-face. Participants received an advance information leaflet and the terms of participation were explained to participants/ reiterated at the start of the interview. Once consent was given, recording equipment was turned on and participants asked to confirm that they had given consent to take part. This verbal consent was captured in both transcripts (where used) and fieldnotes. Electronic consent was recorded by a tick box. These methods of consent were approved by the ethics committee. All data were handled securely in accordance with a detailed privacy statement.

Behavioural survey

Study design. This study is a follow-up survey among a sample of participants from round 1 of the national REACT-2 survey of SARS-CoV-2 antibody prevalence in England. Methods

for REACT-2 are published elsewhere^{1,4}. Briefly, round 1 took place between 20 June and 13 July 2020; a random population sample of 315,000 adults in England from the National Health Service (NHS) patient list was invited to register until approximately 125,000 had signed up. Those who registered (126,143) were sent a test kit and asked to carry out the test at home. They then completed a short online questionnaire and reported the test result and uploaded a photo of the test.

In the study materials for REACT-2, participants were informed that the lateral flow immunoassay (LFIA) test used (Fortress Diagnostics) was not approved for individual use but approved for research only⁵. They were advised that they should not rely on the results and continue to follow government recommendations on social distancing and other preventive measures. These instructions were developed with person-centred design methods and patient involvement aiming to reduce behavioural change following knowledge of antibody test results⁶.

A total of 99,908 people from round 1 completed the test and reported a positive or negative result; 92% consented to being recontacted for research. For the follow-up behavioural survey, we invited all those who reported a positive IgG antibody test (N= 4500) and a similarly sized random sample of those who reported a negative test (N=4039). They completed the follow-up survey between 4 and 14 August 2020, i.e. 6-7 weeks after their test. Participants registered for the follow-up study via an online portal which directed them to an online survey or by telephone to complete the survey over the phone. This included repeat key behavioural questions from the main seroprevalence study, with additional questions on their recollection of the result, what result they were expecting and reactions to their test result. The survey instruments are available on the Imperial College London REACT-2 resources webpage and as *Extended data*^{7,8}. In both the round 1 and follow-up surveys participants were asked about previous behaviour. Questions related to behaviour change were as follows:

1. Did you leave home for any reason in the last 7 days (and for what reasons)?
2. Not including members of your household, how many different people did you have contact with yesterday?
3. Since you completed the antibody test for the study, did you change your behaviour by doing any of the following? (Table 1, follow-up survey only)

Data analysis. During the six-week period from the round 1 test (t1) to follow-up (t2) there was relaxation in lockdown measures in England, and therefore we expected to observe changes in behaviours independent of the result of the test. People who tested positive for antibodies differed from those who tested negative in relation to sociodemographic, behavioural, and clinical characteristics⁴. We first compared responses to questions about behaviour change following the test

Table 1. Recall of antibody test result by actual antibody test result.

	Positive ¹ N=4,500 (%)	Negative N=4,039 (%)
Result recalled		
Positive	4,227 (93.9)	12 (0.3)
Negative	48 (1.1)	3,967 (98.2)
Other ²	225 (5.0)	60 (1.5)

¹ IgG antibody positive² Other includes invalid, don't recall, unsure

between those with positive and negative antibody results using chi square tests of independence and confidence intervals. We then used regression analysis to quantify changes in reported behaviour from t1 to t2 using a quasi-experimental research design, difference-in-differences (DID)⁹. This method enables us to show whether knowledge of antibody test results influences behaviour among the REACT-2 study participants. DID models are commonly used in public health research to understand policy impacts where randomised control trials are not feasible by showing whether there is a treatment effect when treatment assignment is not random⁷. In this study, the intervention was performing a self-test to find out antibody status for SARS-CoV-2, and the treatment was exposure to the test result. The method enabled us to capture time-invariant systematic differences between those who test negative and those who test positive (group effect); the effect of unmeasured combined covariates that change in the same way for both groups over time (time trend), and the effect of a treatment*time interaction (treatment effect) on a dependent variable⁹. We use the method to show whether the trajectory of groups over time are different in the “exposed” (antibody positive test result) and “unexposed” (antibody negative test result) groups.

We looked at two forms of behaviour: the number of contacts a person has had the previous day and leaving the house for specific reasons in the previous week. For the analysis we used a count variable of the number of people that someone reports having contact with the previous day (not including members of their household) and negative binomial regression models for the DID models. The minimum number of contacts was 0 and the maximum was 500 in these rounds (Table 4). For those with more than 100 reported contacts (N=14), we recoded their number of contacts to 100. For leaving the house in the last 7 days, we used three dichotomous measures: leaving for work, leaving to socialise in a public place, and leaving to socialise in a personal place. We use logistic regression models to estimate the DID models.

DID models were fitted using regression, where there is a dummy variable for treatment group (Tg), and Tg=0 where antibody tests were negative, and Tg= 1 where antibody tests were

positive. There is a dummy variable for time period (Pt), where Pt = 0 in round 1 and Pt = 1 in round 2b. Finally, there is an interaction term for treatment group and time period (Tg x Pt) that we estimate to measure the interaction, which is the treatment effect.

Negative Binomial Difference in Difference:

$$\ln(\mu_{gt}) = \beta_0 + \beta_1 T_g + \beta_2 P_t + \beta_3 (T_g \times P_t)$$

Logistic Difference in Difference:

$$\ln\left(\frac{\rho_{gt}}{1-\rho_{gt}}\right) = \beta_0 + \beta_1 T_g + \beta_2 P_t + \beta_3 (T_g \times P_t)$$

Statistical analyses were carried out in Stata V15 and R 4.0.5^{10,11}.

Interview study

Study design. We conducted a nested interview study from 17 August to 11 September 2020 to explore in depth participants’ understanding of and responses to the antibody test and results. Detailed methods are in an online report produced by Ipsos MORI¹². A total of 40 individuals were purposively recruited from the behavioural survey participants to ensure a mix of characteristics (including test result, age, gender, ethnicity, and work status) and interviewed by telephone for up to an hour, using a semi-structured discussion guide. Nineteen interviews were conducted with those reporting a positive result, 11 with a negative result, and 10 reporting an invalid result. One-hour interviews were carried out over the phone using a structured discussion guide which drew on the COM-B (capability, opportunity and motivation) behavioural research framework¹³. These interviews explored attitudes and perceptions in relation to COVID-19, the antibody test and meaning of the results, their personal test result, the impact on their own behaviours and intentions, and reflections on the implications for public health. The discussion guide is available to download (see *Extended data*). Interviews were recorded with verbal consent from the participants, and detailed notes were taken by researchers. The researchers met weekly during fieldwork to reflect on emerging themes and progress the analysis of findings. The six researchers involved were aged between 25 and 45, an even mix of both male and female. Two researchers were from (different) ethnic minority groups.

Data analysis. An inductive approach to data analysis was taken. A common coding scheme and thematic framework for data analysis were developed through collaborative discussion among research team members. This included participants’ expectations for the test result, with evidence drawn from their survey responses. The thematic framework was used to generate focused evidence summaries to support data analysis. The analysis was conducted drawing on detailed notes, summaries, audio files from all interviews and transcripts generated from selected interviews. The MAPPS framework was applied to the different influences on behaviour to unpack what was shaping participant’s behaviour both before and after taking the test. The key MAPPS categories that emerged from the analysis are highlighted in the full report and were

used to make recommendations for future intervention development (See online report for further details¹²).

Results

Follow-up surveys were completed by 4500 people with a positive result, and 4039 people with a negative result; 40 interviews took place: 20 with a positive result, 10 with a negative result and 10 with an invalid antibody result.

Survey results

At follow-up (t2) almost all respondents correctly recalled their test result (Table 1). The majority of people said they had received the result they had expected, including 58% (95% CI 57, 60) of those with a positive and 57% (95% CI 55, 58) of those with a negative result (Table 2). When asked,

“Since you completed the antibody test for the study, did you change your behaviour by doing any of the following...?”, people with a positive result were more likely than those with a negative result to report at t2 that they had resumed their usual social activities, gone out to work, used public transport and gone to restaurants/ bars/ pubs, and were less likely to report wearing a face mask outside their home (Table 3).

Between t1 and t2, there was an increase of 79% (95% CI 62, 97) in the overall number of contacts participants had. However, at t1, those with a positive test result had reported more contacts than those with a negative result (Table 4). We did not find evidence of a difference in the increase in contacts due to knowledge of their test result, as assessed by analysing the interaction between time and positive test result in the difference-in-differences regressions, which captures the “treatment effect” of exposure to a positive antibody test result (Table 4 & Table 5, Figure 1).

Compared to t1, respondents at t2 were more likely to report having left their house for work (odds ratio (OR) 1.16, 95% CI 1.06,1.28), for socialising in a public place (OR 1.70, 1.55,1.87) and for socialising in a personal space (OR 1.60,1.46,1.75), irrespective of antibody test result. However, we found little evidence that behaviour changes differed because of the antibody test results. At t1, IgG positive respondents were more likely to leave for work and to socialise in public, but the difference-in-differences coefficient reached statistical significance only for leaving the house to socialise in a public place (OR 1.15, 1.01, 1.31) (Table 6).

Table 2. Expected antibody test result by actual antibody test result.

	Positive ¹ N=4,500 (%)	Negative N=4,039 (%)
Result expected		
Positive	2611 (58.0)	645 (16.0)
Negative	720 (16.0)	2296 (56.9)
Unsure	1159 (25.8)	1094 (27.1)
Don't remember	10 (0.22)	4 (0.10)

¹ IgG antibody positive

Table 3. Reported behaviours following test by antibody test result, for those with positive and negative results.

	Positive ¹ N=4,500 (%; 95% CI)	Negative N=4,039 (%; 95% CI)	P value (chi-squared)
Question: “Since you completed the antibody test for the study, did you change your behaviour by doing any of the following?”			
I wore a face mask outside my home	1,723 (38.3; 36.9, 39.7)	1,694 (41.9; 40.4, 43.5)	<0.001
I tried to avoid physical contact with people	1,404 (31.2; 29.8, 32.6)	1,399 (34.6; 33.2, 36.1)	<0.001
I followed handwashing recommendations	1,916 (42.6; 41.1, 44.0)	1,649 (40.8; 39.3, 42.4)	<0.001
I resumed my usual social activities	1,292 (28.7; 27.4, 30.1)	853 (21.1; 19.9, 22.4)	<0.001
I go out to a place of work	2,084 (46.3; 44.8, 47.8)	1,443 (35.7; 34.2, 37.2)	<0.001
I go shopping for non-essential things	1,871 (41.6; 40.1, 43.0)	1,529 (37.9; 36.4, 39.4)	0.001
I go to a grocery store or pharmacy	3,323 (73.8; 72.5, 75.1)	2,865 (70.9; 69.5, 72.3)	0.001
I leave the house	3,547 (78.8; 77.8, 80.0)	3,140 (77.7; 76.4, 79.0)	0.03
I take public transport	631 (14.0; 13.0, 15.1)	364 (9.0; 8.1, 9.9)	<0.001
I go to restaurants/bars/pubs	1,879 (41.8; 40.3, 43.2)	1,320 (32.7; 31.2, 34.2)	<0.001
I go for walks or exercise outside	3,203 (71.2; 69.8, 72.5)	2,787 (69.0; 67.6, 70.4)	0.006

¹ IgG antibody positive

Table 4. Reported numbers of non-household contacts in the previous day in initial questionnaire (time 1) and at follow-up (time 2).

	N	Numbers of non-household contacts in previous day ¹			
		Time 1		Time 2	
		Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)
Positive	4500	1.51 (5.77)	0 (1)	2.65 (7.73)	0 (3)
Negative	4039	1.13 (4.17)	0 (1)	2.02 (5.10)	0 (2)

¹Question: Not including members of your household, how many different people did you have contact with yesterday? If you had contact with a person more than one time, please count them only once. By contact we mean:

- Any direct skin-to-skin physical contact (e.g. kiss/embrace/handshake)
- Being less than 2 metres from another person for over 5 minutes

Table 5. Difference-in-differences model (negative binomial regression) of change in reported non-household contacts from time 1 to time 2, by test result and interaction. Coefficients unit is expected difference in logged number of contacts.

	Coefficient Estimate	Std. Error	P Value
Intercept	0.124	0.036	<0.001
Positive Test Result	0.275	0.049	<0.001
Time 2 vs Time 1	0.581	0.050	<0.001
Positive Test* Time 2	-0.023	0.068	0.733

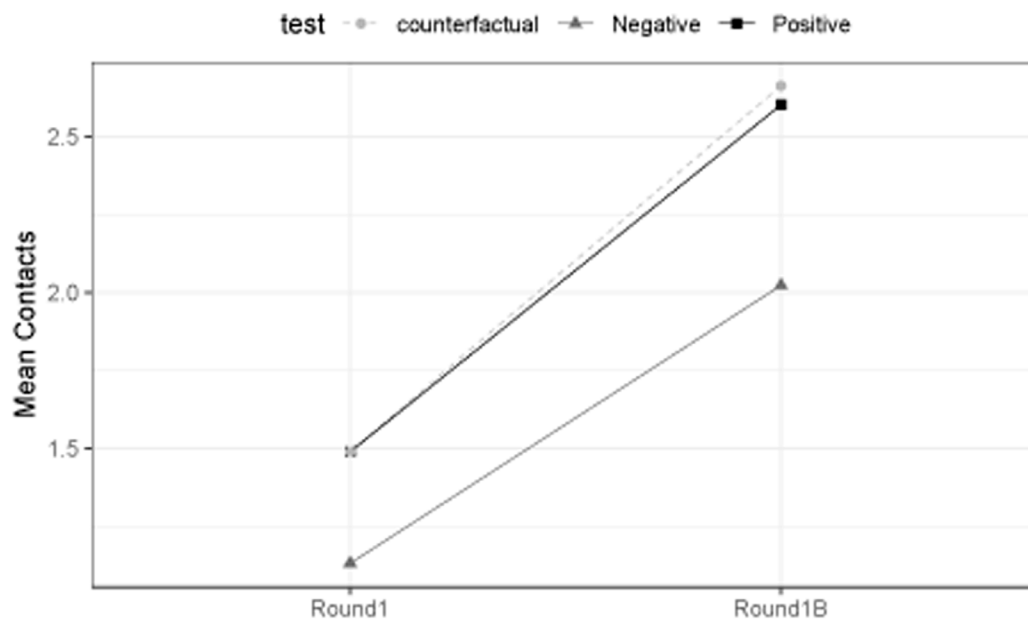


Figure 1. Difference-in-differences model of change in non-household contacts from time 1 (round 1) to time 2 (round 2B - follow-up) by test result¹. ¹This shows the results of the difference-in-differences model along with the counterfactual result. The counterfactual line shows what would have happened to IgG-positive respondents if they followed the same trajectory as the IgG-negative respondents. The data come from the model in Table 5.

Table 6. Odd ratios of leaving home in the previous week by study time, antibody result and interaction (logistic regression).

Leave home to:	Odds ratio [95% CI]		
	Time (t2 vs t1)	Result (positive vs negative)	Time x Result (difference in differences)
go to work	1.16 [1.06,1.28]	1.46 [1.34,1.60]	1.02 [0.90,1.16]
socialise in public place	1.70 [1.55,1.87]	1.14 [1.04,1.25]	1.15 [1.01,1.31]
socialise in personal place	1.60 [1.46,1.75]	0.97 [0.89,1.06]	1.05 [0.93,1.19]

Interview results

We found the antibody test results had a small but wide-ranging impact on the behaviours described by participants (See online report for extensive discussion¹²). While those who tested positive typically felt that the presence of antibodies gave them some level of protection against contracting the virus again, only a few reported actively changing their behaviour, and these varied depending on the wider context of their positive result. Despite the limited reports of actual behaviour change, the test results strongly influenced participant's perception of their personal risk of contracting COVID-19 in the context of their individual circumstances and experiences of the pandemic. The test results typically influenced three aspects of perceived risk, namely susceptibility to contracting COVID-19, validation/invalidation of previously taken protective measures, and anticipated severity of symptoms they would be likely to experience if they did contract the virus.

Susceptibility to contracting COVID-19. Participants that received a positive test tended to feel that the antibodies they had acquired gave them some degree of protection, leading them to believe they were less likely to contract the virus again. Some participants reported relaxing their behaviour as they felt more confident about taking higher risk activities such as caring for grandchildren. For example, Evelyn's* antibody test result made her feel more confident in returning to this caring role, and she felt less anxious about running this risk. *"I'm taking a risk because she still goes to nursery ... but it's been four weeks now and [the result] has made me feel that I can carry on looking after her"* (Female, 35-54, Positive)

The extent of this perceived protection was influenced by an individual's scientific understanding of the test result. For example, some used their understanding of how immunity works for other viruses (e.g. chickenpox) to inform their beliefs about the protection provided by SARS-CoV-2 antibodies: *"When you have chickenpox, they say you're very unlikely to get it again ... it's that kind of mentality really, oh I've had it and the chances were [that] I won't get it again."* (Female, 55-69, Positive)

Those who tested positive and had expected a negative result reflected that they must have been exposed to SARS-CoV-2

in the past but had asymptomatic infection. These participants had previously been confident in the measures they had put in place in accordance with government guidelines, however once they had received a positive result they began to wonder whether they should have been more careful. A few of these participants feared that they were still contagious, and they reported being more cautious since receiving their positive test result due to fear of passing the virus on to others around them who were susceptible.

Validation/invalidation of previously taken protective measures. Those who received a negative result felt that the precautions that they had taken to manage their personal risk of SARS-CoV-2 had been validated. *"At one point I thought maybe I was being overcautious, but the test just confirmed that I was keeping myself safe. It made me think why would I risk going out more when I honestly don't need to? I'll just keep doing what I've been doing"* (Female, 35-54, Negative).

Participants felt that by following the government guidelines to minimise the spread of the virus they had mitigated their personal risk. These participants planned to continue following the guidelines. Some participants felt that they had been even more cautious than the government recommended during the pandemic. For example, those with health conditions or living with vulnerable family members reported being tentative about leaving their home even as restrictions were being lifted.

Anticipated severity of symptoms they would be likely to experience if they did contract the virus. For those who tested positive and had experienced symptoms of what they thought was COVID-19, many felt that their symptoms had not been serious and were perhaps only a mild form. This view was shaped by comparisons to stories of hospitalisation they had heard of in the media. Generally, those who had experienced COVID-19 already felt reassured that if they were to contract the virus again, they would have a similarly mild response or perhaps fewer symptoms than before resulting in reduced anxiety: *"Knowing I have the antibodies; I feel more settled ... I feel that if I come into contact with the virus it might protect me ... I won't get 'full-blown' COVID ... the antibodies will fight it off."* (Female, 35-54, Positive)

Whilst most interviewees did not describe immediate behavioural changes in response to the risk perceptions described above, it is important to note that this may change over time and if messaging about test results changed.

While the aspects described above shaped individual attitudes and behaviours in responses to the test, other factors including personal circumstances, wider social influences, and their personal values also played a role. These factors were influential in different combinations and were highly personal, forming an important context for their perceptions of risk of SARS-CoV-2.

Discussion

Our main quantitative study findings suggest that, within the context of a large population-wide prevalence study, there is little evidence that testing positive for SARS-CoV-2 antibodies by at-home self-testing changes protective behaviours to the virus when instructed not to change behaviour based on the outcome of the test. Between round 1 (20 June – 13 July) and follow up (4 – 14 August), we found that overall, irrespective of antibody status, participants decreased protective behaviours, left the house to socialise more and to go to work, and had more contacts. This is not surprising given that during this period the UK Government was easing lockdown restrictions across the country. We further showed that those with positive IgG results exhibited fewer protective behaviours before being tested relative to those with negative results. Again, this is not surprising as adopting fewer protective behaviours is likely to have resulted in an increased risk of exposure. Given this difference in baseline behaviours, we used difference-in-differences models to analyse whether behaviour trajectories varied between round 1 and follow-up due to antibody test results. We did not find evidence that positive test results changed participant behaviour trajectories in relation to the number of contacts respondents had, for leaving the house to go to work or for leaving the house to socialise in a personal place. We did see a marginal difference for positive IgG respondents relative to those who tested negative with regards to going out to socialise in public: IgG positive respondents were somewhat more likely to go out to socialise in a public place at the time of the follow-up survey compared to those that tested negative.

The qualitative findings provide additional insight into how individuals may be making decisions regarding behaviours during the pandemic. Most people did not think that they had changed their behaviours because of their test results, however they did indicate some changes in their attitudes and perceptions around risk, susceptibility, and potential severity of symptoms. Participants used their personal circumstances and experience to contextualise their understanding of the antibody test results and what they thought these results meant for how they should behave. They were clear in their understanding that the instructions said that they should not change their behaviour because of their results, therefore it might be inferred that the expectation of the results impacted their current, personal protective measures.

Overall, our findings suggest that context and framing are important for how future antibody testing should be rolled out in populations. As an example, previous work has shown that healthcare workers will exhibit less protective behaviours when they find out that they have had COVID-19¹, and while we did not find strong evidence for behaviour change in our study, our findings are from a context where participants were explicitly told not to change their behaviour because of their test results and that their results were for research only. This is in line with other studies that have shown that people are less likely to change their behaviours when they are told to understand their antibody test results in terms of antibodies rather than immunity².

Strengths and limitations

This research provides some evidence of whether SARS-CoV-2 antibody tests affect adherence to preventative behaviours. One of the main strengths of this study is that it uses a quasi-experimental design in a representative sample of the population. The difference-in-differences approach enabled us to explore the potential impact of a positive IgG test result on preventative behaviours. The findings are further strengthened by our mixed methods approach. The qualitative research enabled a clearer understanding of why people might not be changing their behaviour and how context matters in decision-making for preventative behaviours during a pandemic.

The main limitations of our study include that exposure to antibody test results were not blinded and testing positive or negative depended on previous exposure risk. This means that the analysis was complicated by confounding factors associated with participant characteristics and behavioural outcomes. We attempted to mitigate the impact of this through our quasi-experimental research design, so that we were comparing changes in behaviour between the test positive and test negative groups (that is, each person acting as their own control). Moreover, respondents learnt of their test results before they recorded their behaviours so the behavioural measures were subject to potential recall and social desirability bias possibly limiting reporting of behaviour changes¹⁴. They were also given very clear messages about not changing their behaviour based on their results, which might have stopped behaviour change or limited reporting of behaviour change. A further limitation is that the study coincided with an easing of lockdown restrictions, which meant that behaviours were changing over the course of the study.

Conclusion

In summary, within the context of a large seroprevalence study using at-home self-administered LFIAs with clear information regarding the inaccuracies of the test and uncertainties around what the result means in terms of immunity, we found limited evidence that knowing your antibody status leads to behaviour change. Therefore, conducting such studies with LFIAs, which may not currently be accurate enough for individual-level clinical decisions, can be done without leading to unwanted behaviour change in study participants. Such large seroprevalence studies are vital for understanding levels

of past infection with SARS-CoV-2 in the community and have an important role to play to monitor vaccine induced protection. At-home self-sampling and self-testing with LFIA provides a practical approach to performing these studies at scale.

Data availability

Underlying data

Access to this data is restricted due to ethical and security considerations. To obtain ethics approval from the South Central Berkshire B Research Ethics Committee (REC) and Health Regulator Authority (HRA), we agreed that we will preserve the confidentiality of participants taking part in the study and fulfil transparency requirements under the General Data Protection Regulation for health and care research. We also agreed that all REACT study data is to be held securely and processed in a Secure Enclave. This is an isolated environment within Imperial College for the processing of health-related personal data. It provides a framework that satisfies Information Governance requirements that come from several sources such as

- Legislation (e.g. GDPR)
- Regulatory bodies
- Data providers (e.g. NHS Digital)
- Imperial College (e.g. ICT)

The Secure Enclaves are compliant with the requirements of major data providers (e.g. ONS, NHS Digital and NHS Trusts), as well as flexible to incorporate additional requirements a group may be subject to. The enclaves are ISO27001 certified.

These restrictions apply to all of the study data, both qualitative and quantitative. We do not allow any line list data to be taken from the secure enclave because of the risk of cross-referencing and deductive disclosure. A researcher can request access to the data held in the Secure Enclave by emailing react.access@imperial.ac.uk. Access would be granted to researchers for the purposes of further research subject to approval by the data

access committee and after signing a data access agreement to ensure no disclosure of potentially identifying details.

Extended data

Zenodo: REACT 2 Study 5 Round 2B Behaviour and Antibody Test Surveys. <https://doi.org/10.5281/zenodo.51062587>.

This project contains the following extended data:

- Round-2b-User-Follow-up-Survey---Antibody-test.pdf
- Round-2b-User-Follow-up-Survey---Behaviour.pdf

Zenodo: REACT 2 Study 5 Round 1 Registration and User Surveys. <https://doi.org/10.5281/zenodo.51638378>.

This project contains the following extended data:

- 200710-Study-5-Testing-ANTIBODY-Round-2-User-Survey.pdf
- 200710-Study-5-Testing_ANTIBODY-Round-2-Registration-Survey.pdf

Data are available under the terms of the [Creative Commons Attribution 4.0 International license](https://creativecommons.org/licenses/by/4.0/) (CC-BY 4.0).

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