



The implications of immunity certification

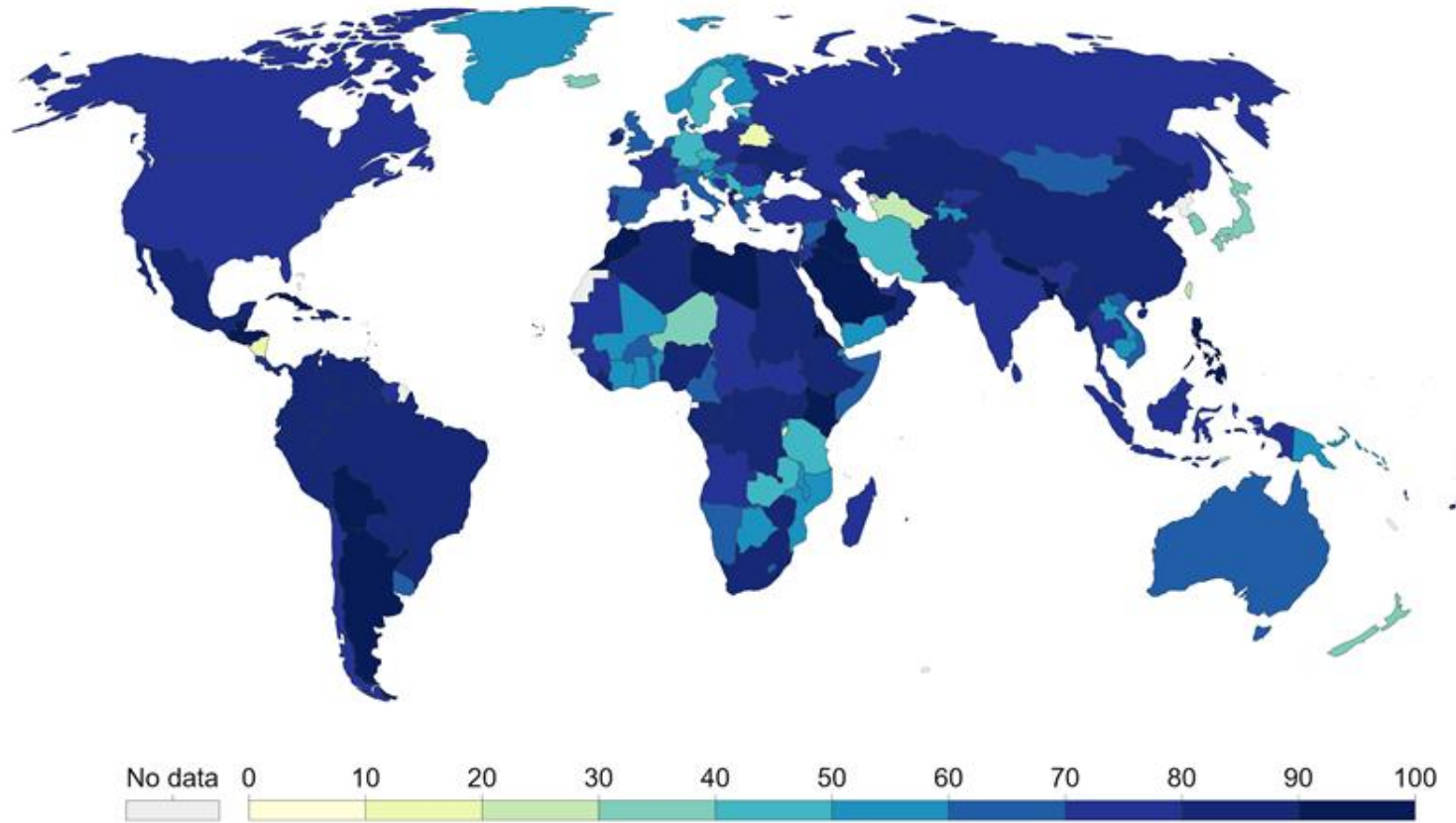
Dr Richard Milne
richard.milne@wgc.org.uk

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COVID-19: Government Response Stringency Index, May 27, 2020



The Government Response Stringency Index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest response).



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last Updated 7th July.
Note: This index simply records the number and strictness of government policies, and should not be interpreted as 'scoring' the appropriateness or effectiveness of a country's response.
OurWorldInData.org/coronavirus • CC BY

Cambridgeshire

Retail and recreation

-54% compared to baseline



Supermarket and pharmacy

-16% compared to baseline



Parks

+44% compared to baseline



Public transport

-48% compared to baseline



Workplaces

-51% compared to baseline



Residential

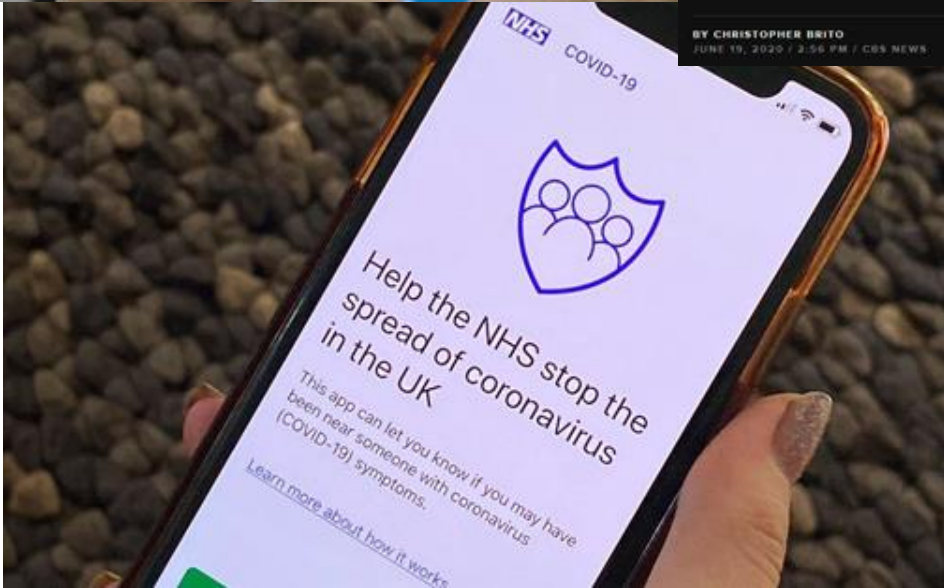
+20% compared to baseline





NBA players can wear smart rings to detect COVID-19 symptoms when season returns

BY CHRISTOPHER BRITO
JUNE 19, 2020 / 2:56 PM / CBS NEWS



CORONAVIRUS

NHS not ready to begin mass testing

Chris Smyth

Wednesday March 18 2020, 12:01am, The Times



CORONAVIRUS TESTS FOR ESSENTIAL WORKERS

Find more information and how to book a test at gov.uk/coronavirus

**STAY HOME
PROTECT THE NHS
SAVE LIVES**

World Health Organization

Dr Tedros Adhanom Ghebreyesus
WHO DIRECTOR GENERAL

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Coronavirus: Boris Johnson vows more virus tests as UK deaths exceed 2,000

1 April 2020

f [messenger] [twitter] [email] [share]



Coronavirus : NHS to ramp up testing capacity

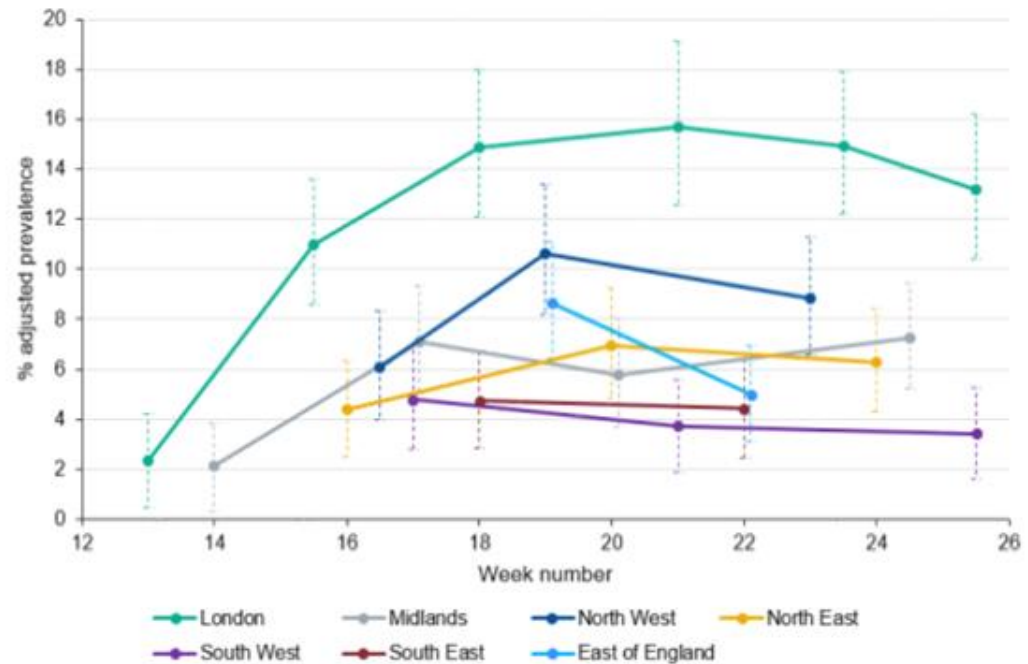
11 March 2020

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6.3%

Sero-prevalence epidemiology, England

Figure 34: Overall SARS-CoV-2 antibody seroprevalence (%) in blood donors by PHE centres, using Euroimmun test adjusted for sensitivity (82.5%) and specificity (99.1%) and 95% confidence intervals (dashed lines)



ONS Coronavirus infection survey P1d <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/datasets/coronaviruscovid19infectionsurveydata>

PHE Weekly Coronavirus Disease 2019 (COVID-19) Surveillance Report

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897199/Weekly_COVID19_Surveillance_report_-_week_27.pdf

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"We are looking at an immunity certificate - how people who have had the disease, have got the antibodies and therefore have the immunity, can show that and so get back, as much as possible, to normal life,"
(Matt Hancock 2/4/20)



<https://www.adalovelaceinstitute.org/our-work/identities-liberties/international-public-health-identity-systems-monitor/>

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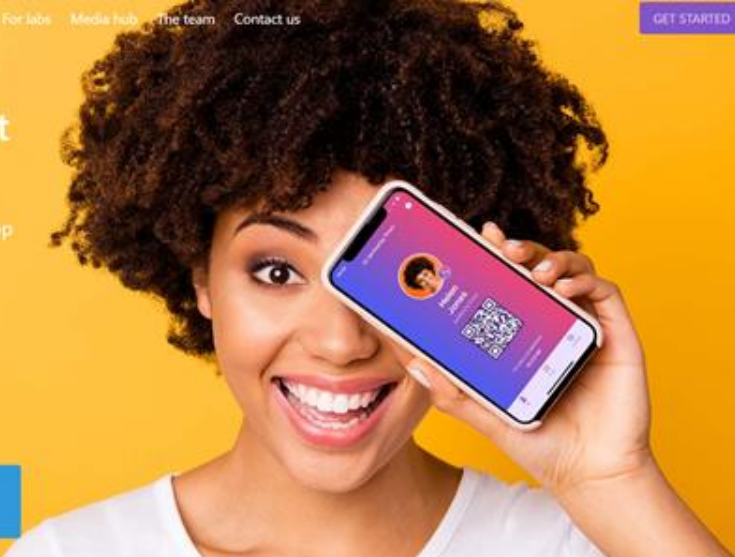
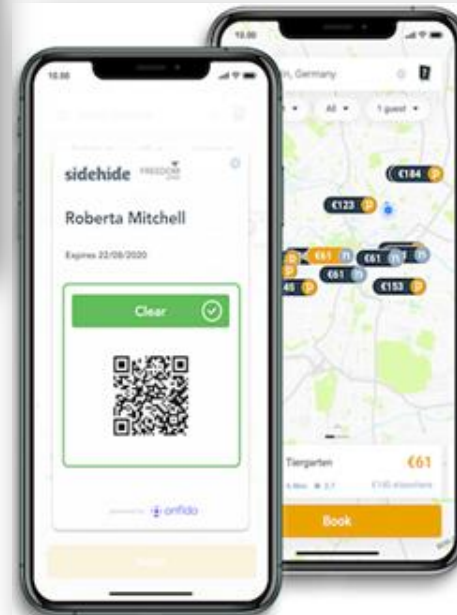
Prova Immunity Passport and Health Pass

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News: YourGene Health selects Prova app to deliver Coronavirus test results

The value of immunity certification

Economic

Social

Ethical





“Victory had perched upon my banner; I was an acclimated citizen, and as such, received into full favor in the good city of New-Orleans, where they distrust every body, and call them non-residents, until they become *endorsed* by the yellow fever.”

(Roanoke in Olivarius)

“If a man intends to make himself a citizen of New Orleans, his first duty is to become acclimated. **He owes it to himself and to society.**”

(*Picayune* 1841 in Olivarius 2019)

Olivarius, Kathryn. 2019. “Immunity, Capital, and Power in Antebellum New Orleans.” *The American Historical Review* 124 (2): 425–55.
<https://doi.org/10.1093/ahr/rhz176>.

Discrimination

Equity

Perverse
incentives

Evidence



Covid-19 antibody testing

Diagnostic accuracy of three serological tests

Summary

Current evidence does not support the continued use of existing point-of-care covid-19 serology tests with the LFIA method. Only two studies evaluated performance at the point of care

Study design



Systematic review and meta-analysis

Sensitivity estimated from people with confirmed covid-19

Specificity estimated mostly using pre-epidemic samples, or low risk individuals

Data sources



40 studies



29 842 tests

More than one sample may have originated from the same participant

Comparison

ELISA



Enzyme Linked Immunosorbent Assays

LFIA



Lateral Flow Immunoassays

CLIA



Chemiluminescent Immunoassays

Results

Under 10% prevalence

TRUE result

FALSE result

Patients covid-19

Patients covid-19

Evidence

Evidence quality

Evidence about the diagnostic accuracy of covid-19 serology tests is characterised by high risks of bias, heterogeneity, and limited generalisability to point-of-care testing and to outpatient populations

generalisability to point-of-care testing and to outpatient populations

Bastos et al. 2020. "Diagnostic Accuracy of Serological Tests for Covid-19: Systematic Review and Meta-Analysis." *BMJ* 370 (July). <https://doi.org/10.1136/bmj.m2516>.

At this point in the pandemic, there is not enough evidence about the effectiveness of antibody-mediated immunity to guarantee the accuracy of an “immunity passport” or “risk-free certificate.”

(WHO, 24 April)

“I know we all want it to be true that if we have antibodies it will then mean we are free to do things others are not...but at the moment ... if we have an antibody test, what it tells you is that you have antibodies.”

(Dido Harding, 11/6/20)



**World Health
Organization**

Conclusions

- Immunity passports are one a range of approaches being considered by governments and companies
- May enable restoration of economic and social freedoms
- May exacerbate existing inequalities, and present risks to individuals and to public health efforts
- Accuracy and implications of antibody testing are not fully understood
- Despite this, there may nevertheless be a market for testing if any privilege is seen to be associated with it

Further reading

- Ada Lovelace Institute (2020) International Monitor: Public Health Identity Systems <https://www.adalovelaceinstitute.org/our-work/identities-liberties/international-public-health-identity-systems-monitor/>
- Nuffield Council on Bioethics (2020) COVID-19 antibody testing and ‘immunity certification’: Rapid Policy Briefing <https://www.nuffieldbioethics.org/assets/pdfs/Immunity-certificates-rapid-policy-briefing.pdf>
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- Phelan, Alexandra L. 2020. “COVID-19 Immunity Passports and Vaccination Certificates: Scientific, Equitable, and Legal Challenges.” *The Lancet* 395 (10237): 1595–98. [https://doi.org/10.1016/S0140-6736\(20\)31034-5](https://doi.org/10.1016/S0140-6736(20)31034-5).
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- Weinstein, Milton C., Kenneth A. Freedberg, Emily P. Hyle, and A. David Paltiel. 2020. “Waiting for Certainty on Covid-19 Antibody Tests — At What Cost?” *New England Journal of Medicine* <https://doi.org/10.1056/NEJMp2017739>.