

COVID-19 Daily Briefing: June 9th

DISCLAIMER: Scientists for Labour are a voluntary organisation, and collating this research takes a significant amount of time. We cannot claim that this document is comprehensive, necessarily accurate in all regards, or that it covers all developments. Expert fact checking has been performed by the Boyd Orr Centre for Population and Ecosystem Health at the University of Glasgow.

1. Summary

MEDICINE AND TREATMENTS

- **SMOKING:** A peer-reviewed study found that concentrations of the SARS-CoV-2 receptor ACE2 in the lungs did not differ with age or sex, but smokers exhibited a 100% increase in ACE2 expression. Chronic smoke exposure triggers the expansion of ACE2 secretory cells, which could explain why smokers are more susceptible to severe COVID-19. Smoking cessation reduces ACE2 expression by 40%.
- **LOW DOSE RADIATION (LDR):** An ongoing trial tests full-lung LDR in COVID-19 treatment. Interim analysis of 5 patients with COVID-19 pneumonia (aged 64-94, majority African American females) who were given a dose of the radiation for 10-15 minutes indicated that LDR was safe. Lung function improved within an average of 24 hours and 4 patients recovered within the 14-day observation period (on average within 1.5 days). The authors state that “Low-dose whole-lung radiation is safe, shows early promise of efficacy, and warrants further study in larger prospective trials”.

ANTIBODY IMMUNITY

- **ANTIBODIES (EARLY):** A study of 44 severely infected and hospitalised patients in the USA identified the presence of antibodies that bind to the SARS-CoV-2 spike (S) protein’s receptor-binding domain. These IgG antibodies were identified in 36 patients and were present from 6 days after testing positive for the virus. The blood plasma of 40 patients could neutralise the virus and indicates that a robust antibody response occurs early during severe or moderate COVID-19 infections and may offer some protection from re-infection.
- **ANTIBODIES (LATER):** A preprint study of 98 infected individuals evaluated the antibody response against the SARS-CoV-2 spike (S) protein. 65% of those studied showed a neutralising response two weeks of the onset of symptoms, with the levels of these neutralising antibodies decreasing over time (and around 40% of convalescent patients not exhibiting any neutralising activity). This finding highlights the importance of studying the persistence of neutralising antibodies in response to SARS-CoV-2 infection – it is uncertain whether this reduced level of neutralising activity would remain sufficient to protect from re-infection.
- **B CELLS:** Antibody-producing B cells which bind to the SARS-CoV-2 spike (S) protein were isolated from a COVID-19 patient 21 days after the onset of clinical disease. From these, 45 different types of antibody were produced, of which two could neutralise the virus. Such antibodies may have preventive and/or therapeutic potential.

EXITING LOCKDOWN

- **530 MILLION INFECTIONS STOPPED:** A study estimating the impact of anti-contagion policies across the globe found that the suite of measures imposed have jointly averted an estimated 530 million infections.
- **MOBILITY DURING LOCKDOWN:** A preprint study from the US found that vulnerable counties were found to social distance less than non-vulnerable counties and had a greater difference between mobility on weekdays and weekends. The possible reason for this could be higher levels of precarious employment in those areas. Sectors that often require on-site physical presence (e.g. construction, manufacturing) or customer-facing work (e.g. retail) social distanced less.

2. Quick Summaries

[COVID-19: Hydroxychloroquine does not benefit hospitalised patients, UK trial finds](#)

- **HYDROXYCHLOROQUINE:** *Journal news article.* The preliminary results of a large UK trial on the efficacy of hydroxychloroquine with over 11,000 participants involved has found that its use does not improve the outcomes of patients or reduce the risk of death.

[COVID-19: PHE review has failed ethnic minorities, leaders tell BMJ](#)

- **BAME COVID-19 REVIEW:** *Journal news article.* A summary of the criticisms of the Public Health England report into the disproportionate effects of COVID-19 on ethnic minorities from medical and equality organisations. Particular criticisms are made about the lack of focus on how structural racism and inequalities were impacting BAME communities and ten recommendations are put forward from these groups.

3. Longer Reading

[Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe](#)

- **NPI IN EUROPE:** *Pre-reviewed journal article.* A modelling study used the number of observed deaths to estimate the transmission that occurred several weeks beforehand, and to investigate the impact of non-pharmaceutical interventions in Europe (11 countries, including the UK). The model estimates that current interventions have driven R below 1 and that between 12-15 million individuals, equating to 3.2% – 4.0% of the population, have been infected by May 4.

[Broad and strong memory CD4+ and CD8+ T cells induced by SARS-CoV-2 in UK convalescent COVID-19 patients](#)

- **T-CELL IMMUNITY:** *Preprint journal article.* In this study of 42 recovered patients, the breadth, magnitude and frequency of memory T-cell responses were significantly higher in severe COVID-19 cases compared to mild cases. The identification of regions of SARS-CoV-2 proteins which are especially strongly targeted by T-cells may provide critical tools to study the recovery from infection and associations with disease severity. Additionally, identification of viral regions outside of the commonly studied spike (S) protein may inform the inclusion or exclusion of such proteins in future COVID-19 vaccine design.