

COVID-19 Bulletin

An RSB communication on the
bioscience behind the outbreak and
response
1 June 2020

The sixth edition of the RSB COVID-19 bulletin highlights a selection of the bioscience research and news of the last fortnight. It cannot be comprehensive and gives just a glimpse of the huge worldwide effort to understand SARS-CoV-2 and its effects.

We can all contribute to the response to COVID-19 by engaging with sound science, countering misinformation and increasing awareness. We hope this bulletin is helpful in this.

Views or opinions presented are those of the original author(s) and do not necessarily represent the views of the Royal Society of Biology; medical and government advice should be consulted regarding personal wellbeing decisions.

For further information and to get in touch, contact our policy team via: policy@rsb.org.uk.

To read previous editions and directly sign-up to future editions of this bulletin, please [visit this page](#).

This bulletin is divided into six main sections:

- 1. RSB news:** including key current updates from the RSB.
- 2. Research updates and expert opinion:** relevant research news and outputs under topic headings.
- 3. How else can the bioscience community help?** Resource and expertise calls.
- 4. Positive community news:** community impact aiding the pandemic response.
- 5. Other regularly updated information sources:** useful online information hubs.
- 6. Opinion on personal and community wellbeing:** articles on mental health and wellbeing during self-isolation and social distancing.

This newsletter provides links to published news articles, preserving the original title and summary line. Views or opinions presented are those of the original author(s) and do not necessarily represent the views of the Royal Society of Biology.

RSB news

[RSB COVID-19 Impact Survey](#)

The Society has launched a survey to find out more about how the bioscience community has been affected by the COVID-19 pandemic.

If you can, please do fill in this short survey to help inform how we support the research community now and in the future.

[Main RSB webpage on COVID-19](#)

The RSB is working to adapt and ensure our services are delivered to the greatest extent possible whilst also taking into account Public Health England and Government advice during the pandemic. We regularly update this webpage with relevant information about our activities, initiatives and community support.

[Education during COVID-19](#)

Our education policy team is working with government, awarding bodies and policy partners to provide advice and support to teachers, parents and students. These pages will be updated regularly over the coming weeks.

[COVID-19: the impact on technicians in UK higher education and research](#)

The Technician Commitment, in partnership with the **Science Council**, the **Royal Society of Biology**, the **Institute of Physics**, the **Royal Society of Chemistry**, the **Wellcome Trust** and the **Research England** funded TALENT programme are undertaking a survey to understand more fully the impact of COVID-19 on the technical community in higher education and research. The technical community is at the forefront of the higher education and research sector's response to COVID-19. This survey will enable us to learn more about the impact of the pandemic on working practices for technicians and to explore how, as a group of organisations, we can shine a light on technical contributions at this extraordinary time and best support technical colleagues moving forwards.

[150 people from around the world tune in for the first ever virtual Policy Lates event](#)

More than 150 people joined a panel of experts online to discuss the challenges and potential solutions to antimicrobial resistance (AMR), as part of the RSB's Policy Lates series.

[Ask an epidemiologist](#)

RSB hosted "Ask an epidemiologist", a COVID-19 focused Q and A twitter takeover, with RSB West Midlands and epidemiologist Dr Daniel Franklin MRSB (28 May). Questions and answers covered spread and control of the disease; public health and modelling; and testing, vaccines and immunity.

For more current news, commentary and updates, visit the [RSB on Twitter](#), [LinkedIn](#), [The Biologist](#), and read our latest edition of the weekly [Science Policy Newsletter](#).

Research updates and expert opinion

SARS-CoV-2 is a virus in the zoonotic coronavirus family. This novel virus, discovered in 2019, was previously unidentified in humans and causes the disease COVID-19, which has since been characterized as a pandemic.

[Coronavirus \(COVID-19\): scientific evidence supporting the UK government response](#)

A collection of the evidence provided to the Government by the Scientific Advisory Group for Emergencies (SAGE) on COVID-19, updated May 26th.

["We are learning a lot, including how to do it better next time: Science advice to Government needs to be direct and given without fear or favour"](#)

A comment piece by Sir Patrick Vallance (the Government's Chief Scientific Advisor) writing in The Telegraph.

UK Parliament POST: Covid-19

The Parliamentary Office of Science and Technology (POST) has produced a series of 'rapid response' articles on topics including potential COVID-19 vaccines and school closures. Updated May 22nd.

Coronavirus research updates: The nose could be the body's entry point to infection

Nature wades through the literature on COVID-19 so you don't have to. Updated May 29th.

SARS-CoV-2 virus characteristics

How to Draw the Coronavirus

Scientific illustrators have made the SARS-CoV-2 virus visible, variously capturing its form, function and weaknesses.

COVID-19 pathophysiology

SARS-CoV-2 infection protects against re-challenge in rhesus macaques.

A research article published in *Science* magazine.

Diabetes and COVID-19 in-hospital mortality rates

A recent large-scale study concludes that both type 1 and type 2 diabetes are associated with an increased risk of COVID-19-related in-hospital death. It finds that one-third of coronavirus-related deaths in hospitals in England are individuals with diabetes.

Daily Express diabetes and coronavirus deaths headline is misleading

The UK's independent fact checking charity Full Fact debunks a misleading headline to report NHS England statistics on deaths among people with COVID-19.

COVID-19 mortality in patients with cancer on chemotherapy or other anticancer treatments: a prospective cohort study

Individuals with cancer, particularly those who are receiving systemic anticancer treatments, have been postulated to be at increased risk of mortality from COVID-19. This conjecture has considerable effect on the treatment of patients with cancer and data from large, multicentre studies to support this assumption are scarce because of the contingencies of the pandemic. [The authors of this paper] aimed to describe the clinical and demographic characteristics and COVID-19 outcomes in patients with cancer.

Coronavirus: The mystery of asymptomatic 'silent spreaders'

As the crisis has unfolded, scientists have discovered more evidence about a strange and worrying feature of the coronavirus. While many people who become infected develop a cough, fever and loss of taste and smell, others have no symptoms at all and never realise they're carrying Covid-19.

Epidemiology and public health response

Coronavirus: R number 'very similar' across UK

Coronavirus cases are falling at roughly the same rate across the UK, according to a leading scientist advising the government.

About 7% have had coronavirus, says ONS survey

About 7% of people in England have been infected with coronavirus, antibody tests on a random sample of households suggest.

[How to address the coronavirus's outsized toll on people of colour](#)

US scientists say that better data, testing and hospital preparedness are key to erasing inequalities - and to defeating the pandemic overall.

[Children appear half as likely to catch COVID-19 as adults](#)

New study review suggests children and young people are more than 50% less likely to catch the novel coronavirus.

[Why do some COVID-19 patients infect many others, whereas most don't spread the virus at all?](#)

The journal *Science* looks at so-called 'super-spreading events' and their effect on transmission rates.

[Animal source of the coronavirus continues to elude scientists](#)

Computational models, cell studies and animal experiments are being used to pinpoint the viral host that kicked off the pandemic.

[Delivering insight on the COVID-19 pandemic: How the ONS has informed the response so far \[A comment piece from the ONS\]](#)

The mission of the ONS is to ensure public understanding and decision-making is informed by timely and high-quality analysis and statistics. During the course of the COVID-19 pandemic, the ONS has responded to the need for rapid information that has been used by decision-makers. As we approach another bank holiday weekend, Deputy National Statistician Iain Bell reflects on how the ONS has informed the response to the pandemic so far.

[The strengths of high-income countries are overstated when it comes to pandemic preparedness](#)

Dr Mishal Khan is an Associate Professor of Health Policy and Systems Research at LSHTM. Writing in *The Telegraph* she discusses the UK's response to COVID-19 following the Prime Minister's announcement of a "conditional plan" to reopen society Sunday. There is much confusion about how ready the UK is to handle the rise in infections that will follow easing of the lockdown.

[COVID-19 control in low-income settings and displaced populations: what can realistically be done?](#)

The LSHTM Health in Humanitarian Crises Centre provides practical, evidence based guidance on the prevention of COVID-19 infections among high-risk individuals in camps and urban settings.

[Getting used to life under lockdown? Coronavirus in the UK \(PDF\)](#)

King's College London in partnership with Ipsos MORI have produced a report on their new study of public perceptions and response to the lockdown advice.

Testing and ongoing surveillance

[Coronavirus: Test and trace system kicks off in England and Scotland](#)

Thousands of contact tracers are making their first phone calls to track down people who will be told to self-isolate under new test and trace schemes being launched in England and Scotland.

[Coronavirus Q&A: What is NI's contact tracing plan?](#)

Northern Ireland was the first of the four UK administrations to roll out a contact tracing programme, as part of its plans to tackle coronavirus.

Coronavirus (COVID-19): Test and Protect

Test and Protect - Scotland's approach to implementing the 'test, trace, isolate, support' strategy - is a public health measure designed to break chains of transmission of Coronavirus (COVID-19) in the community.

Coronavirus: How will contact tracing work in England?

People who have been in close contact with someone found to have Covid-19 are now being traced.

Coronavirus: Contact tracing in Wales to be phased in from 1 June

Plans to trace the contacts of people who receive a positive coronavirus test result in Wales will roll out from Monday.

Apple and Google release marks 'watershed moment' for contact-tracing apps

Apple and Google have released a software tool that will make it possible for nations to release coronavirus contact-tracing apps that adopt the firms' privacy-centric model.

Prophylaxis and treatment

Llama antibody engineered to block coronavirus

Based on antibodies isolated from llamas, researchers engineered an antibody that prevented SARS-CoV-2, the virus that causes COVID-19, from entering cells in laboratory experiments. Follow-up work is being planned to test the antibody in animal models of the disease.

Coronavirus vaccine trials have delivered their first results - but their promise is still unclear

Scientists urge caution over hints of success emerging from small human and animal studies.

Vaccine opponents are gaining in Facebook 'battle for hearts and minds,' new map shows

A first-of-its-kind analysis of more than 1300 Facebook pages with nearly 100 million followers has produced a network map that's alarming public health professionals. Antivaccine pages have fewer followers than pro-vaccine pages but are more numerous, faster growing, and increasingly more connected to undecided pages, the study finds. If the current trends continue, the researchers predict, antivaccine views will dominate online discussion in 10 years—a time when a future vaccine against COVID-19 may be critical to public health.

How else can the bioscience community help?

How you can help with COVID-19

An RSB webpage collating routes through which individuals can offer their help to support the national effort to respond to the spread of COVID-19.

The Biologist is publishing [a series of Q&As](#) with bioscientists who are helping to understand, track, and treat COVID-19. The series is looking at how science works in a crisis, how we know what we know about this virus so quickly, and the experiences of researchers and scientists that have shifted their focus towards the current emergency. Contact tom.ireland@rsb.org.uk if you would like to feature or have any information or ideas for the series.

COVID-19 resources from the community

An RSB webpage with links to COVID-19 initiatives and resources available from other bioscience organisations and the wider community. This page is being updated regularly and if you would like to suggest additional content please [send us an email](#).

The [Covid-19 Volunteer Testing Network](#) are searching for volunteer labs, and appropriately skilled volunteers, willing to take on some essential work to help stem the spread of the virus. The principle aim of the network is to provide COVID-19 testing for front-line healthcare staff. **A fixed rate per test will be paid by the Department of Health and Social Care, and all consumables will be supplied to participating labs.** No lab is too big or too small, as long as it is already **ISO 17025 or 15189** accredited with **Containment level 2** in place to accept VTM transported samples and has suitably **trained staff available**. The following **essential equipment** also needs to be in place:

- RT-PCR machine(s)
- Laminar flow cabinet(s)/biological safety hood(s)

If your laboratory is capable of offering assistance, please consider this opportunity to be directly involved. Solo microbiologists or lab workers who want to volunteer can contact the network and they will try to connect you with a local lab in need of your expertise. [Follow this link to contact the COVID-19 Volunteer Testing Network directly to register your interest.](#) Visit www.covid19-testing.org to learn more about how you can help the national effort against the Covid-19 pandemic.

[COVID-19 preclinical drug development database](#)

The Academy of Medical Sciences has launched a new resource for early stage UK COVID-19 preclinical therapeutics research, to boost collaboration and map the preclinical discovery landscape. The project asks researchers from across academia and industry to submit their research projects through a short online form, and will publish the results through an open access database on their website. For more information, please [visit the website](#), or contact Dr James Squires at james.squires@acmedsci.ac.uk.

[COVID-19 Rapid Response Rolling Call](#)

Building on the initial calls of their Initiative, DHSC, through the NIHR, and UKRI are jointly launching a rolling call for proposals for rapid research into COVID-19. As this is a rolling call there is currently no fixed end date to the call, we are open to applications and will aim to review complete proposals within 4 weeks of submission.

Closes: currently no fixed end date

[Diabetes UK are calling for applications for research into coronavirus \(Covid-19\) and diabetes](#)

In response to the unprecedented Covid-19 pandemic, [Diabetes UK are] making £100,000 available for scientists to study how coronavirus affects people living with diabetes.

[Coronavirus Global Response](#)

[#UnitedAgainstCoronavirus](#) [#StrongerTogether](#) [#GlobalResponse](#)

The European Union and its partners are hosting an international pledging marathon starting on Monday 4 May 2020 and culminating in a final Global Pledging Summit on Saturday 27 June. The aim is to gather significant funding to ensure the collaborative development and universal deployment of diagnostics, treatments and vaccines against coronavirus.

[The science of COVID-19](#)

The Science and Technology Committee (Lords) is investigating the scientific and technological aspects of the COVID-19 pandemic, including the nature of the SARS-CoV-2 virus, its transmission and spread, the development of vaccines and treatments, and how digital technologies can be used for tracking and modelling. The inquiry aims to help Government and society learn from the pandemic and better prepare for future epidemics.

Closes: 30 June 2020

UK Science, Research and Technology Capability and Influence in Global Disease Outbreaks

The Science and Technology Committee will inquire formally into the place of UK research, science and technology in the national and global response to the COVID-19 pandemic, and what lessons should be learned for the future. If you plan to submit evidence, please let us know by emailing consultation@rsb.org.uk.

Closes: 31 July 2020

'Urgent studies needed' into mental health impact of coronavirus

Effects of lockdown and of Covid-19 itself could be deep and long-term, say researchers.

Are women publishing less during the pandemic? Here's what the data say

Early analyses suggest that female academics are posting fewer preprints and starting fewer research projects than their male peers.

The bumper Toby Morris & Siouxsie Wiles Covid-19 box set. All the illustrations and animations in one place.

The animations and illustrations created by cartoonist Toby Morris in collaboration with microbiologist Siouxsie Wiles and published by The Spinoff have been shared in their hundreds of millions over the last couple of months, including via New Zealand Prime Minister Jacinda Ardern's recent press conference. For ease of reference [The Spinoff have] put them all together in one post.

Impact of the coronavirus pandemic on biodiversity conservation (Biological Conservation editorial)

Editorial published in *Biological Conservation*.

Include the true value of nature when rebuilding economies after coronavirus

The pandemic is devastating economies. As countries look to revive growth, recovery must go with - not against - the grain of nature. (Nature editorial)

Contact RSB to discuss bioscience community issues or actions via policy@rsb.org.uk

Positive community news

Everyone in the United Kingdom with symptoms now eligible for coronavirus tests

Everyone in England, Scotland, Wales and Northern Ireland with coronavirus (COVID-19) symptoms can now get a test.

£131 million funding boost to expand UK capacity to manufacture a COVID-19 vaccine

LSHTM is a partner in the Vaccines Manufacturing Innovation Centre, which will be able to produce 70 million vaccine doses within 4-6 months of opening.

£40m boost for cutting-edge start-ups

Innovative businesses and start-ups are set to benefit from a £40 million government investment to drive forward new technological advances.

covidpreprints.com

Early-career researchers from preLights (a community service supported by The Company of Biologists) launch covidpreprints.com to track landmark coronavirus studies throughout the pandemic.

Since the outbreak of COVID-19, thousands of coronavirus preprints have been posted online. A

new website places landmark preprints on a timeline of the pandemic to make reliable information accessible to everyone.

OpenCell partners with King's College and Opentrons to create affordable shipping container COVID-19 testing lab

Scientists from OpenCell.bio and King's College London, in partnership with Opentrons Labworks, have developed a low-cost rapidly deployable COVID testing lab inside a shipping container that can process 2,400 tests per day.

This is the first fully functional lab that can be immediately deployed anywhere in the world for COVID testing. The system uses low-cost liquid handling robots developed by Opentrons Labworks to perform a qPCR (the gold-standard nucleic acid detection test) to detect the presence of the SARS-CoV-2 virus.

The validation data and open-source protocols will appear on BioRxiv, a popular preprint research database that has been used extensively to share COVID-19 testing information as it develops. To learn more about this COVID-19 testing system, visit <https://www.opencell.bio/coronavirus>.

EPAs have more flexibilities during COVID-19

New flexibilities to make it easier for end-point assessments to take place during the COVID-19 outbreak have been introduced. The new temporary flexibilities, are set out in this list published by IfATE.

The flexibilities, which may include remote assessment in areas previously assessed through face-to-face contact, have been introduced to ensure apprentices can progress normally where possible, while maintaining high-quality standards.

Technicians to the rescue

Over the past few weeks we have been amazed to see how far technicians have gone to keep things happening and help the country through this difficult time. There have been some wonderful contributions from university and school technicians up and down the country. [Click here](#) to see a few of many hope-inspiring examples.

Other regularly updated information sources

Additional COVID-19 resources

An RSB webpage collating other regularly updated resources on COVID-19.

[\[WHO\] Coronavirus disease \(COVID-19\) Situation Dashboard](#)

[Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE](#)
COVID-19 case dashboard.

Opinion on personal and community wellbeing

Coronavirus: Mental health advice for those with virus anxiety

Mental health experts are offering advice to help adults and children cope with "Covid-19 anxiety".

"Immune to Evidence": How Dangerous Coronavirus Conspiracies Spread

Conspiratorial videos and websites about COVID-19 are going viral. Here's how one of the authors of "The Conspiracy Theory Handbook" says you can fight back. One big takeaway: Focus your efforts on people who can hear evidence and think rationally.



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