

## COVID-19 Bulletin

An RSB communication on the  
bioscience behind the outbreak and  
response

18 January 2021

This fifteenth edition of the RSB COVID-19 bulletin highlights a selection of the bioscience research and news of the last month. 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](mailto: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 national and international research news and outputs under topic headings.
- 3. How else can the bioscience community help?** Examples, 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. Spotlight 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 from a range of sources. 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**

### **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.

## The Biologist

There is an extensive series of interviews and articles on COVID-19 and the scientists investigating it available to [read on the \*Biologist\* webpages](#).

## 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.

## Training

During the Covid-19 pandemic the RSB can offer training courses both online and in-person (via video conferencing). Training courses can also be delivered in-house to staff or students (via video conferencing). If you are interested in up-skilling then please contact us at [training@rsb.org.uk](mailto:training@rsb.org.uk). Visit our [online training platform myLearning](#) or send a request to sign-up to our [Training Newsletter](#) for regular updates.

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.*

## SARS-CoV-2 virus characteristics

### Covid: WHO team probing origin of virus arrives in China

A World Health Organization (WHO) team has arrived in the Chinese city of Wuhan to start its investigation into the origins of the Covid-19 pandemic, reports BBC news.

## COVID-19 pathophysiology

### Hospitalised patients with COVID-19 have compromised gut microbiomes, study finds

Researchers found fewer friendly bacteria known to support our body's immune system in people who had been to hospital after a COVID-19 infection, reports Science Focus.

## Epidemiology and public health response

### BBC Analysis: Can lockdown stop the new coronavirus variant?

Lockdowns have worked before, but can we expect the new one to do the same?

### Covid deaths in UK could exceed 100k before end of month, data shows

The Guardian reports on how experts say that, based on current figures, milestone likely to be passed before February.

### The government will regret relaxing the Covid rules over Christmas [published 15th December]

Being prime minister involves taking the hardest decisions. However tempted Boris Johnson is to fudge Christmas Covid restrictions, this is a judgement call he cannot duck, says Alex Thomas writing for Institute for Government.

### **Plan for the future now or Covid will last for years, UK scientists warn**

Experts condemn government's 'short-term' response and urge it to rethink its approach, reports The Observer.

### **COVID-19: First wave patients may 'be vulnerable to catching it again'**

Science Focus examines how antibodies that stop you from catching COVID-19 a second time last at least five months, but you can still spread the disease while immune, according to a report from Public Health England.

### **Travel restrictions must be used in a targeted way to be effective at controlling local COVID-19 transmission, modelling study suggests**

LSHTM news reports that the first study to assess the global impact of international travel restrictions on the pandemic suggests they may only be effective at controlling the spread of COVID-19 when applied in a targeted way, according to research published in The Lancet Public Health journal.

### **COVID-19 infection rates in schools mirror rates in the community**

LSHTM news reports on how the first round of a new surveillance study in schools finds 1.24% of pupils and 1.29% of staff tested during school visits in November were positive for COVID-19.

### **COVID-19: Psychological 'nudges' change intentions but not behaviour**

Researchers have questioned the effectiveness of using certain 'nudges' to change attitudes or behaviour in relation to COVID-19, reports Science Focus.

### **Majority of Britons distrust government Covid response for first time**

The proportion who feel this way has doubled since the start of the crisis, reports King's College London News Centre.

### **Inferring the effectiveness of government interventions against COVID-19**

Governments are attempting to control the COVID-19 pandemic with nonpharmaceutical interventions (NPIs). However, the effectiveness of different NPIs at reducing transmission is poorly understood. The authors of this paper in Science gathered chronological data on the implementation of NPIs for several European, and other, countries between January and the end of May 2020.

### **WHO warns Covid-19 pandemic is 'not necessarily the big one'**

Experts tell end of year media briefing that virus is likely to become endemic and the world will have to learn to live with it, reports The Guardian.

### **The virus, the vaccine and GDP: Measuring healthcare through the pandemic**

Measuring the work of public services has probably never been as challenging as in recent months, with many services being reduced due to the pandemic while new services, such as track and trace, have been brought on stream to combat it. Here Jonathan Athow writes about how ONS have adjusted their previous estimates and are expanding their statistics to include these new types of services, reports National Statistical.

### **Infected after 5 minutes, from 20 feet away: South Korea study shows coronavirus' spread indoors**

Infected after 5 minutes, from 20 feet away: South Korea study shows coronavirus' spread indoors, reports the Los Angeles times.

## **What's your risk of catching COVID? These tools help you to find out according to Nature Technology Feature**

A look at apps that predict the chance of infection and illness depending on what you're doing and where you are.

## **Testing and ongoing surveillance**

### **Covid-19: Rapid tests for asymptomatic people to be rolled out**

Regular rapid testing for people without coronavirus symptoms will be made available across England this week (c 11 January 2021), the government has said.

### **Mass testing with a short period of contact restrictions dramatically reduced SARS-CoV-2 infections in Slovakia**

The mass testing of Slovakia's entire population while under lockdown, reduced SARS-CoV-2 infections by more than 60% in one week, according to preliminary analyses by the London School of Hygiene & Tropical Medicine.

## **Prophylaxis and treatment**

### **Expert comment - Two potentially life-saving drugs for critically ill COVID-19 patients**

This piece by London School of Hygiene and Tropical Medicine (LSHTM) news describes how a trial looking for potential treatments for hospitalised patients with moderate or severe COVID-19 has found that two monoclonal antibody drugs - tocilizumab and sarilumab - could be used to treat critically-ill patients, and add to the benefit already achieved with dexamethasone treatment.

### **Covid: 'Convalescent plasma no benefit to hospital patients'**

BBC news reports on how trials show that potential treatment for Covid using blood plasma does not reduce deaths among hospital patients.

### **Early High-Titer Plasma Therapy to Prevent Severe Covid-19 in Older Adults**

The authors of this study published in the New England Journal of Medicine found that early administration of high-titer convalescent plasma against SARS-CoV-2 to mildly ill infected older adults reduced the progression of Covid-19.

### **Moderna vaccine becomes third COVID-19 vaccine approved by UK regulator**

Government Press release states that the vaccine has been approved after meeting the required safety, quality and effectiveness standards.

### **Seven vital questions about RNA Covid-19 vaccines**

Both the Pfizer-BioNTech and Moderna Covid-19 vaccines, unlike the vaccines we already use for other diseases, have been developed using ribonucleic acid (RNA) technology. So, how do they work, are they safe, and what else do we know about them? A Wellcome Explainer.

### **COVID-19: Do the vaccines stop transmission? How can I volunteer to help? Your questions answered**

Sky News gathered the most Googled vaccine queries - and came up with some of our own questions - to put to Professor Stephen Evans, professor of pharmacoepidemiology at the London School of Hygiene & Tropical Medicine.

### **How has a Covid vaccine been developed so quickly?**

The Guardian Analysis: Funding and high public interest contributed to slashing of research and approval time.

## Why a pioneering plan to distribute COVID vaccines equitably must succeed

This Nature Editorial states that COVAX is key to both immunizing the world's poorest people and ending the pandemic.

## The Oxford-AstraZeneca Vaccine Approval May Be the Most Globally Important Yet [published December 30th 2020, updated January 4th 2021]

TIME writes on how the COVID-19 vaccine developed by the University of Oxford and AstraZeneca wasn't the first to be OK'd by regulators in the U.K, and it's not the most effective (e.g. vs. the Pfizer vaccine), but the greenlight from the British Medicines and Healthcare Products Regulatory Agency on Dec. 30 could be a big step toward bringing the COVID-19 pandemic under control worldwide.

## How can countries stretch COVID vaccine supplies? Scientists are divided over dosing strategies

This nature news piece describes how researchers worry that efforts to free up limited vaccine doses are driven by desperation rather than data.

## FPM statement on COVID-19 vaccine dosing regimen and roll-out

- The CHM, JCVI and MHRA have reviewed the public data and the technical dossiers on two COVID-19 vaccines (the Biontech/Pfizer and Oxford/AZ vaccines), and have formed recommendations based on these data. It is their considered opinion and made in the interests of public health.
- FPM recognises there may be disagreement between experts on the analysis and the recommendations. FPM notes that it is the competent bodies' responsibility to advise on the use of these two vaccines on behalf of the nation.
- FPM recognises the difficulties of rapidly supplying and rolling out vaccines to high risk patients, when supply is constrained.

## British Society for Immunology statement on COVID-19 vaccine dosing schedules

On Wednesday 30 December 2020, the Medicines & Healthcare products Regulatory Agency (MHRA) announced that the Oxford/AstraZeneca COVID-19 vaccine had been approved for use in the UK, with a dosing schedule of 12 weeks between first and second dose. In this announcement, the dosing schedule for the Pfizer COVID-19 vaccine was also changed to a 12-week gap between first and second dose. These announcements were made based on recommendations from the UK's Joint Committee on Vaccination and Immunisation (JCVI). The British Society for Immunology has **produced a statement** that lays out our position on these announcements around change of dosing schedule for the two approved COVID-19 vaccines.

## Could new COVID variants undermine vaccines? Labs scramble to find out

This Nature News article describes how researchers are racing to determine why lineages identified in Britain and South Africa spread so quickly and whether they'll compromise vaccines.

## Search for better COVID vaccines confounded by existing rollouts

Nature News describes how with placebo-controlled testing falling out of favour, vaccine developers eye blood markers and challenge trials to assess next-generation candidates.

## Australian COVID vaccine terminated due to HIV 'false positives' [published 11th December]

A billion-dollar deal for the Morrison government to buy more than 50 million doses of the University of Queensland's potential coronavirus vaccine has been abruptly terminated after several trial participants returned false positive HIV test results, reports The Sunday Morning Herald.

## **Routine vaccinations during a pandemic - benefit or risk?**

Which is better: fewer coronavirus infections or making sure children get all their usual vaccinations? To find out, the authors of this study used a mathematical model. They worked out the risks and benefits if health systems in Africa continue with their vaccination programs as usual. They found that if African countries give vaccinations as usual, they will prevent many children from dying. The benefits are far greater than the risk of extra deaths due to COVID-19, reports Science Journal for Kids.

## **How else can the bioscience community help?**

### **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](#).

### **National lockdown: Stay at Home**

Coronavirus cases are rising rapidly across the country. Find out what you can and cannot do according to this Government guidance.

### **BBC reports on Covid: What are the lockdown rules across the UK?**

People should avoid unnecessary contact and stick to lockdown rules, England's chief medical officer Prof Chris Whitty has said. The surge in coronavirus cases "is everybody's problem", he argued.

### **Download the NHS COVID-19 app**

The NHS COVID-19 app aims to help control coronavirus (COVID-19) transmission. People across England and Wales are being asked to download the NHS COVID-19 app to help control the spread of coronavirus and protect themselves and their loved ones as case numbers rise.

### **This is what an 'overwhelmed NHS' looks like. We must not look away**

With the NHS stretched to the limit by Covid, here is the grim truth of what is unfolding in Britain's hospitals. Written by Christina Pagel, director of UCL's Clinical Operational Research Unit.

### **Covid: England told to prepare for worst weeks of pandemic**

Prof Chris Whitty pleads with public to 'double down' on avoiding contact with others.

### **One in three people exposed to Covid anti-vax messages**

Social media is being used to amplify harmful and unfounded claims, reports King's College London News Centre.

### **How the public and social media users view anti-vaxxers**

Most have a negative perception - but a notable minority do not, reports King's College London News Centre.

### **Community power could boost confidence in vaccination programmes**

This Nature Correspondence describes how vaccine hesitancy must not be allowed to widen the racial and ethnic disparities already exposed by the COVID-19 pandemic.

### **Science advisers around the world on 2020**

Seven government researchers who helped to guide their governments' responses to the COVID-

19 pandemic speak out in this Nature Correspondence piece.

### **How modelling Covid has changed the way we think about epidemics**

Adam Kucharski, associate professor at the London School of Hygiene & Tropical Medicine writes for The Guardian on how the pandemic has created a tragic 'natural experiment' - a once-in-a-century jolt that could produce unexpected insights.

### **What are COVID archivists keeping for tomorrow's historians?**

A Nature Essay on how records of past pandemics are patchy, but this one has seen a global frenzy of collecting.

### **How Science Beat the Virus**

And what it lost in the process, writes Ed Yong for The Atlantic.

### **The great project: how Covid changed science forever**

The emergence of a novel coronavirus prompted a wave of global collaboration that has led to vaccines, treatments and the promise of new discoveries reports The Guardian.

### **Volunteer for study on the use of medical detection dogs as a solution to the urgent need for improved diagnostics for COVID-19**

Volunteers are needed for a study where dogs are being trained to sniff out COVID-19 as part of a project led by the ARCTEC team at the London School of Hygiene & Tropical Medicine (LSHTM) with partners Medical Detection Dogs and Durham University.

### **Invitation from the Valuing Nature Network to participate in a study on the impacts of COVID-19 on human wellbeing and interactions with coastal nature**

If you live in or near coastal areas Valuing Nature Network invites you to participate in a research study exploring the impacts of COVID-19 on people's wellbeing and interactions with coastal nature, by completing an anonymous survey and forwarding it to others living in or near coastal areas.

Contact RSB to discuss bioscience community issues or actions via [policy@rsb.org.uk](mailto:policy@rsb.org.uk)

## **Positive community news**

### **A year of Covid-19 - and a year of extraordinary science**

The best of humanity has shone through the gloom of 2020. The dedication of scientists across the globe has been remarkable, not just for producing a string of lifesaving breakthroughs but for doing so at an unprecedented pace. Everyone who has supported the research response to Covid-19 can be proud. But the job isn't finished yet, so we must redouble our commitments to put an end to the pandemic. Here is a selection of key moments in this great scientific success story, curated by Wellcome.

### **ESRC-funded observatories will help tackle impacts of COVID-19**

Two observatories funded by the Economic and Social Research Council (ESRC) aim to bring research and policy together to mitigate the impacts of COVID-19 and accelerate the UK's recovery.

## 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

WHO COVID-19 situation dashboard.

### Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE

COVID-19 case dashboard.

## Spotlight on personal and community wellbeing

### Ways to look after yourself and others in 2021

In this Nature Career feature, scientists offer their views on what's important for the coming year.



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