

## Media Release

Wednesday 25 August

# Record breaking scientific study finds recent or current COVID-19 infection linked to increased risk of dangerous blood clots during surgery

***Having a venous thromboembolism clot is subsequently associated with a five-times increased risk of death within 30 days***

Venous thromboembolism (VTE) is a condition in which dangerous blood clots form in the veins and has been described as the number one preventable cause of death in hospitalised patients.

New research published in *Anaesthesia* (a journal of the Association of Anaesthetists) shows that VTEs, a known complication of surgery, are 50 per cent more likely to occur in patients with current COVID-19 infection and almost twice as likely in those with recent infection. The study also found having a VTE was associated with five times increased risk of death within 30 days following surgery compared with patients with no VTE.

The postoperative VTE rate was 0.5 per cent (666/123,591) in patients without SARS-CoV-2; 2.2 per cent (50/2317) in patients with peri-operative SARS-CoV-2; 1.6 per cent (15/953) in patients with recent SARS-CoV-2; and 1.0 per cent (11/1148) in patients with previous SARS-CoV-2. Overall, VTE was independently associated with 30-day mortality, increasing the risk of death during this period by 5.4 times. In patients with SARS-CoV-2, mortality without VTE was 7.4 per cent (319/4342) and with VTE more than five times higher at 40.8 per cent (31/76).

The authors note an important limitation to the study: that information on prophylaxis regimens for these blood clots in the veins or pre-operative anti-coagulation to prevent them was not available. As a result, they say that “further research is needed to define the optimal protocols for VTE prevention and treatment for surgical patients in the setting of SARS-CoV-2 infection”.

The study was delivered by the UK-led GlobalSurg-COVIDSurg Collaborative. This global collaboration of over 15,000 surgeons included Fellows and Trainees from the Royal Australasian College of Surgeons who contributed to teams from 43 hospitals in Australia and 11 in New Zealand. Overall, data was collected from over 140,000 patients who underwent surgery during October 2020, over 5,000 from Australia and Aotearoa New Zealand.

The Collaborative has recently been awarded the Guinness World Record for the ‘most authors on a single peer-reviewed academic paper’. This highlights the scale of this global partnership, which aims to contribute the understanding of COVID-19 and help to save as many lives as possible around the world.

The Collaborative has previously published analyses of this dataset that demonstrate an increase in perioperative morbidity and mortality for patients with SARS-CoV-2 and evidence of particular benefit from vaccination in this setting.

The first publication, also in *Anaesthesia*, found that perioperative risk is increased for patients undergoing surgery within 6 weeks of SARS-CoV-2 diagnosis, and longer for those who remain symptomatic. These

---

**Media enquiries:** Abderazzaq Noor, Marketing & Communications Manager **Contact:** +61 429 028 933

### **About the Royal Australasian College of Surgeons (RACS)**

RACS is the leading advocate for surgical standards, professionalism and surgical education in Australia and New Zealand. The College is a not-for-profit organisation that represents more than 7000 surgeons and 1300 surgical trainees and International Medical Graduates. RACS also supports healthcare and surgical education in the Asia-Pacific region and is a substantial funder of surgical research. There are nine surgical specialties in Australasia being: Cardiothoracic surgery, General surgery, Neurosurgery, Orthopaedic surgery, Otolaryngology Head-and-Neck surgery, Paediatric surgery, Plastic and Reconstructive surgery, Urology and Vascular surgery. [www.surgeons.org](http://www.surgeons.org)

findings were consistent across both low-risk (age < 70 years, ASA physical status 1–2, minor surgery) and

high-risk (age  $\geq$  70 years, ASA physical status 3–5, major surgery) sub-groups and prompted us to advise delaying surgery for those with SARS-CoV-2 infection whenever possible.

Our study modelling the benefit of COVID-19 vaccination, published in *BJS* found that when compared to people of the same age the benefit of vaccination was greater for people needing surgery, particularly cancer surgery. These findings were consistent across all settings regardless of community infection rates.

Australian study lead Dr Daniel Cox, General Surgery registrar, (Austin Health, Melbourne) and Honorary Clinical Lecturer (Department of Surgery, University of Melbourne), commented: “People undergoing surgery are already at higher risk of VTE than the general public, but we discovered that a current or recent SARS-CoV-2 infection was associated with greater risk of postoperative VTE. This adds to our previous work that has found that people with SARS-CoV-2 infection have higher rates of perioperative mortality and morbidity and receive even greater benefit from vaccination.”

Co-author Associate Professor. Pete Pockney, Consultant Colorectal Surgeon from Newcastle, NSW, Coordinator of this project in Australia and Aotearoa New Zealand, commented: “This publication is the latest from this huge, international collaboration conducted by medical students, trainees, and specialist surgeons around the world. It has quickly produced critical, high quality, evidence that is helping to guide the care of people needing surgery. This is the second paper produced by the group that highlights the additional risks for people who need surgery and adds to our previous work demonstrating the particular benefit of vaccination in this setting. We encourage everyone in our communities to be vaccinated as it becomes available.”

**Spokespeople:**

- *Dr Peter Pockney, Consultant Colorectal Surgeon (Newcastle) and Adj. Associate Professor of Surgery, University of Western Australia +61 2 437 697 777, [peter.pockney@uwa.edu.au](mailto:peter.pockney@uwa.edu.au)*
- *Dr Daniel Cox (General Surgery Registrar, Austin Health [Melbourne] and Honorary Clinical Lecturer, Department of Surgery [Austin Precinct], University of Melbourne), +61 3 9496 5468, [daniel.cox@unimelb.edu.au](mailto:daniel.cox@unimelb.edu.au)*

**IF YOU WISH TO PROVIDE A LINK TO THIS PAPER FOR YOUR READERS, PLEASE USE THE FOLLOWING, WHICH WILL GO LIVE WHEN THE EMBARGO LIFTS:**

<https://doi.org/10.1111/anae.15563>

The previous publications referred to in this press release are:

**Article:** SARS-CoV-2 vaccination to support safe surgery during the pandemic: a modeling study using data from an international prospective cohort study

Covidsurg Collaborative, GlobalSurg Collaborative

BJS Society 2021 Mar [10.1093/bjs/zxab101/6182412](https://doi.org/10.1093/bjs/zxab101/6182412)

**Article:** Timing of surgery following SARS-CoV-2 infection: an international prospective cohort study.

Covidsurg Collaborative

Association of Anesthetists 2021 Mar [10.1111/anae.15458](https://doi.org/10.1111/anae.15458)

**Guinness World Record:** <https://www.guinnessworldrecords.com/world-records/653537-most-authors-on-a-single-peer-reviewed-academic-paper>

**List of participating countries and number of hospitals**

<b>Country</b>	<b>Participating hospitals</b>
<b>Australia</b>	43
<b>Aotearoa New Zealand</b>	11
Albania	3
Algeria	3
Argentina	8
Aruba	1
Austria	27
Azerbaijan	2
Bahrain	4
Bangladesh	1
Barbados	1
Belarus	2
Belgium	8
Benin	5
Bosnia and Herzegovina	2
Brazil	37
Bulgaria	5
Cameroon	1
Canada	17
Chile	7
China	5
Colombia	22
Congo (the Democratic Republic of the)	2
Croatia	7
Cyprus	3
Czechia	6
Denmark	3
Dominican Republic (the)	2
Ecuador	1
Egypt	33
El Salvador	1
Estonia	1
Ethiopia	24
Finland	2
France	39
Gabon	1

Georgia	1
Germany	52
Ghana	8
Greece	29
Guatemala	9
Hong Kong	4
Hungary	6
India	54
Indonesia	10
Iran (Islamic Republic of)	16
Iraq	6
Ireland	17
Israel	3
Italy	115
Japan	45
Jordan	17
Kazakhstan	5
Kenya	4
Korea (the Republic of)	1
Kuwait	7
Latvia	3
Lebanon	9
Libya	35
Lithuania	5
Luxembourg	1
Madagascar	6
Malaysia	10
Malta	1
Mexico	25
Moldova (the Republic of)	2
Mongolia	1
Morocco	7
Namibia	4
Nepal	1
Netherlands (the)	17
Nigeria	30
Oman	2
Pakistan	29
Palestine, State of	6
Panama	1
Paraguay	11

Peru	14
Philippines (the)	10
Poland	4
Portugal	22
Qatar	3
Republic of North Macedonia	4
Romania	18
Russian Federation (the)	23
Rwanda	6
Saudi Arabia	25
Senegal	1
Serbia	13
Singapore	3
Slovakia	2
Slovenia	2
Somalia	1
South Africa	9
Spain	97
Sri Lanka	11
Sudan (the)	17
Sweden	9
Switzerland	8
Syrian Arab Republic	14
Taiwan (Province of China)	1
Thailand	2
Tunisia	2
Turkey	47
Uganda	11
Ukraine	4
United Arab Emirates (the)	11
United Kingdom of Great Britain and Northern Ireland (the)	200
United States of America (the)	68
Uruguay	2
Yemen	5
Zambia	1
Zimbabwe	5

### About the COVIDSurg Collaborative

Before the COVID-19 pandemic, 5 billion people lacked access to surgical care and 143 million more operations per year were required globally. There was already a major global inequity in access to safe and affordable surgery across low and middle-income countries, with an urgent need to expand capacity. This pandemic has acutely worsened that situation and placed a spotlight on the need for change in how surgery is delivered. Launched in March 2020, the University of Birmingham-led COVIDSurg collaborative has provided data needed to support this change in the fastest time frame ever seen by a surgical research group, with data from 190,000 patients across 2000 hospitals collected over the past 9 months

Clinical Trials Network ANZ is the Royal Australasian College of Surgeons group that has led the COVIDSurg project in Aotearoa New Zealand, Australia and the Pacific region. It continues to collaborate with surgical colleagues across the globe in pursuit of better data to improve standards in surgical care in our own countries and elsewhere

### **About the NIHR Global Health Research Unit on Global Surgery**

The NIHR Global Health Research Unit on Global Surgery is based at the University of Birmingham and is co-directed by Professor Dion Morton, a leading colorectal surgeon from the University of Birmingham's Institute of Cancer and Genomic Sciences, and Professor Peter Brocklehurst, Director of the University of Birmingham's Birmingham Clinical Trials Unit. It has established international research hubs across a range of low- and middle-income countries (LMICs) in order to set up pathways to rapidly translate research findings into evidence-based patient care.

### **About the National Institute for Health Research (NIHR)**

The mission of the National Institute for Health Research (NIHR) is to improve the health and wealth of the nation through research. We do this by:

- Funding high quality, timely research that benefits the NHS, public health and social care;
- Investing in world-class expertise, facilities and a skilled delivery workforce to translate discoveries into improved treatments and services;
- Partnering with patients, service users, carers and communities, improving the relevance, quality and impact of our research;
- Attracting, training and supporting the best researchers to tackle complex health and social care challenges;
- Collaborating with other public funders, charities and industry to help shape a cohesive and globally competitive research system;
- Funding applied global health research and training to meet the needs of the poorest people in low- and middle-income countries.
- NIHR is funded by the Department of Health and Social Care. Its work in low- and middle-income countries is principally funded through UK Aid from the UK government.