



NEWSLETTER

Welcome to the Spring 2021 edition of the INTERVAL Newsletter

Through the 'Blood Donors Studies' BioResource, samples and data from the INTERVAL study are contributing to a variety of research studies – we hope you enjoy reading about a few below. **Thank you for contributing to this valuable research tool!**

Update on TRACK-COVID study

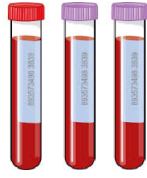
In the previous newsletter, we introduced our new TRACK-COVID study. The aims of this research study are to: (1) determine the risk factors for infection of the new coronavirus (SARS-CoV-2) and (2) investigate why only some people have symptoms. Analyses of the data from this study will help to determine the extent of infection in the general population, as well as to design new ways to prevent and treat such infections. Information about the study can be found here: www.trackcovid.org.uk

Currently, **20,628** participants have joined Stage 1 of the study and are completing a monthly online questionnaire. **15,945** of participants from Stage 1 have also agreed to join Stage 2 by providing biological samples. To date, the TRACK-COVID study helpdesk has sent out approximately **75,000** sample packs to participants and received **66,023** samples back at the laboratory. **Thank you for your participation!**

Blood Donors Studies BioResource

The Blood and Transplant Research Unit (BTRU) in Donor Health and Genomics is the umbrella group for the INTERVAL (2012-2016), COMPARE (2016-2017), CARRIAGE (2019-present), STRIDES (2019-present) and TRACK-COVID (2020-present) studies, collectively known as our 'Blood Donors Studies'.

Blood donors who consented to participate in these studies also consented to our 'Blood Donors Studies' (BDS) BioResource. This resource began with the storage of blood samples from each study. The blood samples were then used for a variety of assays and genetic work, which added data to the BDS BioResource. This data—for example, genotyping (determining differences in an individual's genetic make-up), blood cell characteristics (number, size, granularity), protein and iron measurements—enhances questionnaire data collected during each study. We can now link this data to electronic health records (data related to health conditions that has been collected by a hospital or General Practitioner), creating a highly valuable, large database to enable the study of associations between genetic, biological, lifestyle and other variables with health outcomes (risk and presence of disease).



BioResource

Bona fide researchers around the world can enquire about access to the BDS BioResource and complete a robust application process. Access to the samples and de-identified data is strictly controlled by a formal Data Access Committee, which includes members of the public. The use of the data within the BDS BioResource (i.e. linking to electronic health records and allowing access to approved researchers) has been reviewed and approved by an ethics committee.

Data from the BDS BioResource is stored securely at the University of Cambridge. Copies of de-identified data (without any identifiable details such as the participant's name or date of birth) may also be stored in Trusted Research Environments (TREs) and secure cloud-based storage platforms for research. These are secure environments for approved researchers to access sensitive data for analysis, instead of receiving copies of data to download to their local systems. There are strict controls in place to prevent unauthorised access to the data. There are also security measures to ensure that the data cannot leave the environment, only the results from analysis by the approved researchers.

You can read more about the BDS BioResource here: www.donorhealth-btru.nihr.ac.uk/project/bioresource

Our Data Access Policy is available here: www.donorhealth-btru.nihr.ac.uk/wp-content/uploads/2020/04/Data-Access-Policy-v1.0-14Apr2020.pdf

Linking INTERVAL data to electronic health records

During the current COVID-19 pandemic, researchers at the BTRU and the University of Cambridge have been using the BDS BioResource to investigate whether genetic and other factors affect the risk of developing COVID-19 (the disease caused by the new coronavirus). This work is possible through the ability to link to data from electronic health records. We currently receive data about COVID-19 test results, Hospital treatment, Intensive Care stay, General Practice (GP) records and information on Deaths and Cancer diagnoses.

We are in the process of requesting Antibody Testing data, Vaccination data and Stroke Audit data for INTERVAL study participants to enable further research into COVID-19.

Results from analyses using data from health records by the researchers at the University of Cambridge are contributing to the COVID-19 Host Genetics Initiative (www.covid19hg.org). Work by this consortium has identified areas in the genome that are associated with SARS-CoV-2 infection or severe COVID-19

disease. This information is increasing global knowledge of SARS-CoV-2 and may help to identify areas for therapeutic treatment.

Research studies utilising INTERVAL data from the BDS BioResource

Donor deferral due to low haemoglobin—an updated systematic review (Andrew Browne (BTRU PhD student) et al.)

Blood donors attending a donation session may be deferred from donating blood due to a failure to meet low hemoglobin (Hb) thresholds. This costs the blood donor service and donors valuable time and resources. In addition, donors who are deferred may have more symptoms, and as a direct and/or indirect effect of their experience, return rates of donors deferred for low Hb are reduced, even in repeat donors. It is therefore vital that low Hb deferral (LHD) is minimized. The aim of this updated systematic review is to expand the evidence base for factors which affect a donor's risk of deferral due to low Hb.

Find out more: www.sciencedirect.com/science/article/pii/S0887796319301373

Genetic information can predict predisposition to rare and common blood diseases (collaboration between the University of Cambridge, Wellcome Sanger Institute, Broad Institute of MIT and Harvard)

Two large-scale genetic studies have identified the bulk of genetic variation that influences medically-important characteristics of our blood cells. The collaboration studied hundreds of thousands of participants and identified over 7,000 regions of the human genome that control blood cell characteristics, such as the numbers of red and white cells. The studies also show, for the first time, how a person's genetic make-up contributes to them developing blood diseases. This knowledge brings us one step closer to using genetic scoring in the clinic to predict personal risk of developing blood disorders.

Read the press release: www.donorhealth-btru.nihr.ac.uk/wp-content/uploads/2020/09/Soranzo_blood-cell-traits_press-release_FINAL.pdf

Blood and Transplant Research Unit (BTRU) in Donor Health and Genomics

Our 'Blood Donors Studies' fit under the umbrella of the BTRU in Donor Health and Genomics. Led by Emanuele Di Angelantonio, Professor of Donor Health, the Unit aims to: (1) address major questions about the health of blood donors, (2) produce strategies to improve blood donor safety and (3) ensure a steady supply of blood to the NHS.

Find out more: www.donorhealth-btru.nihr.ac.uk

Get involved: www.donorhealth-btru.nihr.ac.uk/involved and www.donorhealth-btru.nihr.ac.uk/hdruk-cambridge

Visit our YouTube channel to learn more about our research

Watch our talk delivered to a public audience – Every drop counts: blood donors of the future: www.youtube.com/channel/UCeS9CPB2_QGcBsnORnNQyjQ/featured

Catch-up on all of our blood donor health talks (convalescent plasma; blood matching for sickle cell patients; blood group genotyping; and blood donation and COVID-19 in Denmark):
www.youtube.com/playlist?list=PL7VR7iDFpJEF77Xsympg3yte0M83J1X0y

Follow us on Twitter: @DonorHealthBTRU

As an INTERVAL participant we will continue to update you on the study. Published papers will be posted on our website: www.intervalstudy.org.uk/publications and we'll let you know, by email, when they are available. To make sure you receive our emails, please let us know, by emailing: donorhealth@medschl.cam.ac.uk, if you change your contact details.