

Blood Donors Studies Newsletter

Welcome to the Spring 2023 edition of the Blood Donors Studies Newsletter, which provides updates and news about our studies.

COMPARE study news

When you attend your blood donation appointment there is a chance that you may be “deferred”. A deferral is when you are not allowed to give blood during the appointment and, instead, are asked to schedule a new appointment. This waiting period is necessary to protect the health and safety of both the donor and patient who receives the donated blood.

Deferrals due to low haemoglobin—when the body does not have enough iron to form enough haemoglobin for it to be safe to donate blood—are time consuming and costly for blood donors and blood donation services. One possible solution to reduce deferrals, that the Blood and Transplant Research Unit (BTRU) in Donor Health and Behaviour has been investigating, is to use haemoglobin concentration and donor characteristics to create personalised intervals for blood donation.

Using data from the COMPARE study, a group of healthy blood donors from across England, researchers at the University of Cambridge tested this idea. They created a model comparing personalised donation intervals using *estimates* of current haemoglobin levels based on the measurement at the previous donation appointment (“post-donation” testing) *versus* the current NHS Blood and Transplant (NHSBT) method of measuring haemoglobin levels at fixed intervals (12-weeks men, 16-weeks women) before donating blood (“pre-donation” testing).

The researchers found that:

- A strategy of re-inviting donors at a time when there is $\geq 90\%$ probability of their haemoglobin level being above NHSBT’s donation threshold (based on last previous measurement – “post-donation” testing) resulted in the most favourable outcomes in both sexes
- This strategy had the lowest *health* cost per donation in women, representing an estimated reduction of 111,000 low haemoglobin deferrals and 128,000 inappropriate bleeds per year (based on 1.4 million donations/year and 51% of donations from females)
 - An inappropriate bleed is when an individual donates blood, but shouldn’t have because they are below NHSBT’s haemoglobin concentration threshold. This can



Watch the COMPARE study animation:
<https://tinyurl.com/5e7epene>

sometimes happen with the current strategy due to error when measuring haemoglobin before a donation appointment. Under a “post-donation” testing strategy, this may sometimes happen when a donor has not recovered haemoglobin as fast as expected following a previous donation.

- This strategy—only using “post-donation” testing for haemoglobin—showed improvements in operational efficiency at NHSBT
- This work—the identification of “post-donation” testing as a preferred strategy—provides evidence-based support for policies already in place in blood services in France, Belgium and Denmark

You can read [the full paper here](#).

Update on STRIDES study

If you donated blood sometime in the past three years, then you may have seen information about our STRIDES study (STRategies to Improve Donor Experiences). The focus of the [STRIDES study](#) is to research the experiences of donors during the blood donation process and to determine ways in which the experience can be improved.



The STRIDES study [recruited 1,361,326 donors](#), with 82,277 of these donors recruited to the [NIHR BioResource Centre Cambridge](#).

The study ended on 3 November 2022. Our researchers are now analysing the vast amounts of data and our Public Contributors will work with NHSBT to ensure that research findings inform blood service practice. The STRIDES study paper will be publicly available soon.

[Read about](#) Philippe Gilchrist’s, a clinical psychologist, involvement in this study.

[Read about](#) one Public Contributor’s experience working with NHSBT nurses and administrative staff during STRIDES Training Sessions.

[Read about](#) how NHSBT changed processes for blood donation appointments during this study.

INTERVAL study news

Despite the large number of people with Sickle Cell Disease (SCD) worldwide, there is still a lack of effective and affordable treatments.

Samples and data from the INTERVAL study, a group of healthy blood donors from across England, have been used to try to identify new approaches to treat SCD. The research, a collaboration between the Universities of Cambridge and Oxford and the drug companies Sanofi and Biogen, looked at foetal haemoglobin levels in blood samples.



Watch the INTERVAL study animation:
<https://tinyurl.com/3fv9kybr>

For more information about this work, please [read our lay summary here](#).

Linkage to electronic health records

To help understand the health of participants in the INTERVAL, COMPARE and STRIDES studies, and to track how this changes over time, we use medical and other health-related records. We currently receive data about: (1) Hospital treatment and (2) Deaths and Cancer diagnoses and we will soon be receiving (3) Diabetes Audit data. We are also receiving the following information for on-going COVID-19 research: (1) COVID Testing data, (2) COVID-19 Vaccination records and (3) General Practice (GP) records.

Results from analyses using INTERVAL study data and health record data by researchers at the University of Cambridge have contributed to the COVID-19 Host Genetics Initiative (www.covid19hg.org). An individual's genetic make-up is an important determinant in how COVID-19 affects them (how a patient feels, functions or survives). A recent publication by this initiative found that individuals with rare variants (changes in the DNA sequence) in the gene for Toll-Like Receptor 7 (*TLR7*, a protein that plays a major role in immune responses) are at increased risk of severe COVID-19.

You can read the [full paper here](#).

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

Our Blood Donors Studies—INTERVAL, COMPARE, STRIDES, CARRIAGE and TRACK-COVID—fit under the umbrella of the BTRU in Donor Health and Behaviour. 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.

The BTRU works closely with England's blood service, [NHSBT](#), to ensure that our studies and research are relevant to blood service operations and acceptable to blood donors.

- Find out more [about the BTRU](#) and its studies/research
- Interested in working with us as a [Public Contributor](#)? Email: donorhealth@medschl.cam.ac.uk
 - Our five-year Patient and Public Involvement and Engagement (PPIE) Strategy is [available here](#)
- View [videos and animations](#) about blood donor health research
- Follow us on Twitter: @DonorHealthBTRU

As a study participant, we will continue to update you. Published papers will be posted [on the INTERVAL website](#) and [on the COMPARE website](#) 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. If you wish to stop receiving communications from us, but continue participating in the study, please email: donorhealth@medschl.cam.ac.uk.