

## **PARTICIPANT INFORMATION LEAFLET**

### **Genetic analysis of platelets in healthy individuals**

#### **- Genes & Platelets -**

**You are invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.**

#### **What is the purpose of the study?**

The study is looking at the different components of blood, including platelets. The aim of the study is to determine the link between differences in the DNA code and the volume, number and function of blood cells, including platelets. Having platelet values that are outside, or at the edges of, the normal range is generally not related with disease, but in some instances it may be associated with an increased tendency of the blood to clot (e.g. in the case of very high platelet counts).

This study will provide a better understanding of how blood cells and especially platelets work. This is important because platelets are implicated in common diseases such as heart attacks and stroke.

#### **Why have I been invited?**

There are several reasons why you have been invited, of which one or more will apply to you: (i) Researchers require control samples when investigating samples from patients, or to develop new tests; (ii) You have already consented to be enrolled in studies such as the NHS Blood and Transplant Cambridge BioResource, Platelet Profiling, Cambridge CardioResource and UK Blood Services Common Controls and as part of this to be contacted again for future studies; (iii) When we tested your blood sample on a previous occasion, either as part of a routine blood test performed by NHS Blood and Transplant or because you agreed to participate in another study, we observed that one of your platelet values (number, volume or function) was outside or at the edges of the normal range; (iv) At the time you enrolled as a donor on the NHS Blood and Transplant British Bone Marrow Registry you granted permission to be contacted for future studies; (v) NHS Blood and Transplant or the University of Cambridge may have information on their research databases and you have given permission to use this information as a reason for selection. Please ask the member of the research team which of the above reasons applies to yourself if you are interested to know.

#### **Do I have to take part?**

No. It is entirely up to you to decide whether to take part. This information leaflet tells you all about the study and will help you to decide. You are still free to withdraw at any time and without giving a reason.

### **What will happen if I decide to participate?**

If you decide to take part you will be asked to sign a consent form and keep a copy of the form and this information sheet. We will ask you by e-mail, phone, via the internet or face-to-face for information about your family and medical history. You may be asked to complete a questionnaire. A medical consultant or nurse may also invite you for a physical examination, for example to determine the extent of bruising.

You will be asked to donate a blood sample of generally no more than 50 ml for research tests, and no more frequently than four times per 12 months. If you are a blood donor, we would like to: i) take an extra 18 ml from the pouch of your routine whole blood donation which is 470 ml; or ii) take a sample of up to 50 ml (which equates to 1/10 of a normal donation) either before or after your routine blood/platelet donation using a separate venepuncture, or iii) invite you to attend to give a sample for research only. Sometimes we may seek your permission to use your entire routine donation of blood or platelets for research. We may occasionally ask for other samples such as sputum (to extract DNA), urine or stool specimens (to detect blood loss, if platelets are not functioning well). These will be collected in specimen kits sent to your home address not more than twice every 12 months.

In a small number of participants, we may ask if you would consider your close relatives being invited to join the study. This is because we want to determine whether the size, volume and function of platelets is heritable. If this is acceptable to you, then we would ask you to hand information leaflets to your close relatives so they can decide whether they want to join or not.

### **What happens when blood is taken?**

The samples will be taken by an experienced member of NHS staff and it will be a similar procedure to a normal blood/platelet donation. As the needle is smaller, the level of discomfort may be less. The blood sample will be generally collected at a NHS Blood and Transplant donation session site (e.g. at the Cambridge Blood Donor Centre), but on occasions we may ask you to attend your local NHS hospital (e.g. on the Addenbrooke's campus), or your local surgery. Alternatively, we may be able to visit you at your home or work address if this would be more convenient for you.

### **What happens after donating a sample?**

After giving a sample you will be able to go home as is the case after a normal blood or platelet donation.

### **What are the possible disadvantages?**

As a blood or platelet donor you will be aware that the taking of a blood sample carries a small risk of bruising, inflammation or fainting. There is also a small chance of anaemia developing if blood is taken but NHS Blood and Transplant monitors your level of haemoglobin at every donation. If it is too low, you will be advised not to donate.

### **What do we do with your donated samples?**

#### **We will isolate, analyse, amplify, and store your DNA**

We want to know how genes regulate blood cells, including platelets. Genes are made of DNA and DNA is translated to RNA. Variation in genes influences the behaviour of blood cells and this is why we need to analyse your DNA in detail. DNA tests carried out now or developed in the future will be used to understand the genetic or DNA code, which varies from one individual to another. As part of this study we will test your DNA for many genes and we may determine the sequence of

part or your entire DNA code. In the end, we will obtain a complete genetic fingerprint of your blood cells.

#### We will isolate, analyse, and store your blood cells

We may want to study your blood cells, including your platelets. We may therefore store any type of blood cell and perform tests on these cells.

#### We will isolate, analyse, and store other blood components

There are many other substances such as RNA, proteins, carbohydrates and lipids and we may isolate, analyse and store these substances.

### **What happens if I am also asked to provide a skin or blood sample for generating induced pluripotent stem cells?**

You may be asked whether you are interested in donating a skin and/or blood sample to generate induced pluripotent stem (IPS) cells. A separate information leaflet will be provided and this will require separate consent under the study 'Generation of Donor Induced Pluripotent Stem (IPS) Cells for Research' approved by Cambridgeshire 1 Research Ethics Committee (reference 09/H0304/77). IPS cells have a great potential to make different cell types and we hope that this will help us to understand more about the mechanisms of how specific cells are made and what genes are involved. If these are used in the laboratory, we will isolate, analyse, amplify and store your DNA and RNA and we will use it to identify how the behavioural pattern of your cells is programmed in your genes. Genes are made out of DNA and this is why we want to analyse your DNA in detail. RNA is derived from your DNA and shuttles between the cell nucleus and the protein production sites in your cells. In addition to DNA and RNA, we will isolate, analyse and store other blood components including protein, lipid and carbohydrate molecules that are necessary for cellular function. This will enable us to obtain a full functional fingerprint.

### **Who will work with my samples?**

The laboratories working with your samples for the purpose of research are part of the University of Cambridge, Addenbrooke's Hospital, NHS Blood and Transplant and the Wellcome Trust Sanger Institute in Hinxton. We are, however, also collaborating with other researchers worldwide, and your samples may be transferred to those collaborators, including private companies and pharmaceutical industries. Your identity, however, will never be disclosed to any of these collaborators.

### **Can I change my mind after giving the sample?**

Yes, you can change your mind at any time during the study and withdraw consent without giving a reason. This means that you will not be contacted again for this study. If you wish to withdraw, please contact the Cambridge study team at the University of Cambridge, NHS Blood and Transplant, Long Road, Cambridge CB2 0PT or on freephone 0800 085 3650 and we will send you a withdrawal form.

If you withdraw, all stocks of your samples from the main repository will be removed. It is not possible to withdraw already distributed materials. However, no new data will be added to the research databases or notebooks from the moment that the study team has confirmed your withdrawal. We are not able to erase information from the research databases if you withdraw, but we will stop using your data already on the databases in any further analysis.

### **What if something goes wrong and what arrangements have been made for indemnity?**

In the highly unlikely event that you suffer any harm as a consequence of this study you will have a right to complain or take legal action against the NHS Blood and Transplant. As sponsors of this study, cover is provided under the NHSBT indemnity scheme.

### **What happens if an invention is made using my sample?**

Your donated samples and related information are given as an “absolute gift”. An absolute gift is a gift, which is given as a donation i.e. without receiving a payment and without conditions. You should understand that you give samples as a non-returnable absolute gift. In case an invention results from the research undertaken with your samples, for example if a new blood test to improve diagnosis or better medicines for treatment of patients are developed, you will not receive any compensation nor will funds be forthcoming to you. We and our collaborators may work in partnership with the private sector (e.g. pharmaceutical or biotech industry) to successfully develop any invention for the benefit of patients. Part of the profits earned with inventions will be reinvested in medical research.

### **What will happen to the results of the research study?**

Results of this study will be made available to the public through scientific publications, including placing information on the internet, in press articles and project leaflets. This information may include a part or the entire code of your DNA or RNA. However, under no circumstances would your identity be disclosed in any publication.

### **What are the possible benefits of taking part?**

Taking part in this study will not directly benefit you. The information obtained from this study will help us to discover more about the relationship between platelet phenotype and the DNA code. This may be of value for the treatment and prevention of common diseases such as heart attacks and stroke that may benefit patient care in the NHS.

### **What about confidentiality?**

All research information that is collected about you during the course of this study will be kept strictly confidential. We will protect your privacy at all times. Your donated samples will be labelled with a unique sample number before being transferred to the research laboratory. Your name and contact details will never appear on the sample to ensure that the laboratory researchers never know who you are. The consent form will be archived separately. Test results obtained from your sample will be stored in laboratory notebooks and research databases, which are not connected to the database that contains your contact details. Therefore, information from genetic and other tests will be kept separate from your surname, first name and contact details at all times. Access to the table linking sample numbers to contact details will only be available to members of staff with a NHS Blood and Transplant (honorary) contract. They will use the link table if they wish to contact you for further studies.

### **Can I know the results obtained from my samples?**

As outlined above, for protection of your privacy, your samples will be kept completely separate from your contact identifiers. It is not planned to feedback any research results to participants, as it would be of no direct benefit. The only time a test result would be communicated back to you would be in the event that something is discovered that has an immediate impact on your healthcare (i.e. low haemoglobin and anaemia or a very high platelet count). In this case, we would invite you for a further sample that will be re-tested in a National External Quality Assessment Service (NEQAS) accredited laboratory. If the results are replicated to have an effect on your

health, a study staff member would inform a NHS medical doctor who will get in touch with you and offer advice, and this may involve contacting your GP.

### **Will I be reimbursed for taking part?**

We will cover reasonable expenses for travelling to the site where the sample will be taken, in the event that you agree to come and give a sample for research only.

### **Who is organising and funding the research?**

This study is funded by the British Heart Foundation, the European Commission and the National Institute for Health Research (NIHR). If the funding ceases, all samples and data will be safeguarded by NHS Blood and Transplant. Alternatively, if a decision has to be taken to destroy the materials and related information, we will follow procedures that are applied in the NHS.

### **Who has approved the study?**

All research in the NHS is reviewed by an independent group of people called a Research Ethics Committee to protect your safety, rights, wellbeing and dignity. This study has been reviewed and was given a favourable opinion by the Cambridgeshire 1 Research Ethics Committee.

### **Where can I find further information and whom can I contact if I have further questions?**

Please talk to the recruitment team about this study if you have any questions or would like more information. They are happy to help and you will find their contact details below. If you have any questions or wish to comment about any aspect of this study, please contact:

**Study leader:** Prof. Willem H Ouwehand MD PhD FRCPATH  
Honorary Consultant Haematologist and Professor of  
Experimental Haematology  
University of Cambridge/NHS Blood and Transplant  
Long Road, Cambridge, CB2 0PT

Alternatively you can contact the study co-ordinator or Cambridge study team at the NHS Blood and Transplant:

**Study co-ordinator:** Dr Nicola Foad  
Coordinator Cambridge BioResource  
NHS Blood and Transplant  
Long Road, Cambridge, CB2 0PT  
Email: nicola.foad@nhsbt.nhs.uk

**Study team:** E-mail: [nhsbt@cambridgebioresource.org.uk](mailto:nhsbt@cambridgebioresource.org.uk)  
Freephone: **0800 085 3650**

(If you have any questions about blood or platelet donation or your next session then please call the NHS Blood and Transplant on 0300 123 23 23.)

*If you decide to take part you will be asked to sign a consent form and keep a copy of the form and this information sheet.*