

Infosheet Control Version 5. 020714

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Investigating mutational signatures in cancer and other inherited disorders (Scotland)

Control Information Sheet

We would like to invite you to take part in a research study. Before you decide whether or not to participate, it is important for you to understand why this research is being done and what it would involve for you. Please take time to consider the information carefully and talk to others about the study if you wish.

- Part 1 tells you the purpose of the study and what will happen if you take part.
- Part 2 gives you more detailed information about how the study will be undertaken.

Please ask if there is anything that is not clear or if you would like more information.

The aim of this study is to understand the DNA (genetic code) changes that add up in the cells of patients who have symptoms such as cancer at a young age / faster aging / learning problems. We would like you to read the following information and consider whether you are happy to allow your samples to be used for this study.

PART I

Why have I been invited?

You are a person who does not have a rare condition with symptoms that are probably due to damage occurring to the genetic material (or DNA) in your cells. We are inviting people without symptoms of DNA damage to join a study to look at how and why damage builds up in the DNA of cells.

What is the purpose of the study?

The purpose of this study is to understand how and why damage accumulates in DNA.

Almost all the cells in your body contain a copy of the human genetic code (or DNA). This DNA is constantly damaged and this can lead to errors in the genetic code. Usually, these errors are corrected by a person's DNA repair toolkit which exists in your cells but, occasionally, some errors are missed or become permanent changes. These changes are called mutations.

We are studying mutations that have built up in cells to understand how and why they cause health problems like cancer, brain diseases and aging.

Do I have to take part?

No. It is up to you to decide whether or not you would like to take part. If you do take part, you will be asked to sign a consent form. You will be free to withdraw at any time and without giving a reason. If you are receiving medical care, this will not affect the standard of care that you receive.

Infosheet Control Version 5. 020714

What will happen to me if I take part?

If you decide to take part, you will be asked to provide a sample of *blood/saliva (spit)/skin*. From this sample we will make your cells into special cells called 'stem cells' that can be grown and kept indefinitely. These cells will be made at the Wellcome Trust Sanger Institute, Hinxton, Cambridge, UK, and stored in a cell bank. The cells will be studied in many different ways to find out why damage to DNA builds up in cells.

What will I have to do?

The doctor will talk to you about all that will happen to make sure you understand everything and give you time to ask questions. If you are happy to take part, you will be asked to sign a form in the presence of the doctor to give your consent to be involved in the study. A doctor or nurse will take a sample of your *blood/saliva (spit)/skin* at a time that is convenient for you, which will be used to make these special stem cells and to study the DNA changes.

All that is required in this study is a blood/saliva (spit)/skin sample from you.

Will my taking part in the study be kept confidential?

Yes. All information about people taking part in this study will be kept confidential. Further details are included in Part 2.

This completes Part 1 of the Information Sheet.

Infosheet Control Version 5. 020714

Part II

What are the possible benefits of taking part?

The study will not benefit you directly, but we may be able to understand in more detail, how people's genetic makeup actually causes the symptoms of the conditions we are studying. This may not lead directly to new treatments, but will be a crucial step towards it.

What are the possible disadvantages and risks of taking part?

The risks associated with blood sampling are very small as the procedures are done under sterile conditions by experienced doctors or nurses. Nevertheless, mild bruising can sometimes result.

The risks associated with taking a skin sample include some pain or bruising around the site of the biopsy. We will make every attempt to gather a skin biopsy as easily and painlessly as possible. You will be given a local anaesthetic by injection to numb the biopsy site. When the area is numb, a special punch biopsy instrument will be used to collect a 2mm disc of skin. However, we are trying very hard to reduce the likelihood of requesting a skin biopsy sample and will only do so if there is no other option available for making stem cells from a blood/spit sample. If it is necessary to obtain a skin biopsy sample, we will try to arrange a convenient time to take the sample, for example, if you were undergoing a general anaesthetic for another reason.

Although it is highly unlikely, there is a possibility that you could be identified by looking at your genetic information. However, this is only possible if this information is matched to other personal, identifiable data.

What will happen to any samples I give?

We will send your anonymised blood/skin/saliva (spit) samples to researchers at the Wellcome Trust Sanger Institute in Hinxton, Cambridge, UK. These researchers will extract cells and make them into special cells or stem cells that can grow indefinitely. They will look for any patterns in the DNA of your cells.

When you provide a sample, we shall also record any relevant health details in our password-protected records. All these details will be stored securely and be accessible only to study members. Your personal identifiable information will not be shared with researchers outside of the study team.

On arrival in the lab every sample will be given an anonymous code and stored in locked freezers in tubes showing only the anonymous code. When genetic and other results are obtained, they will be associated only with this code, so no one outside the study team can trace the results to you.

When the special stem cells are made from your sample, they will be stored in a regulated cell storage facility. These anonymised stem cells will become part of a useful resource for research studies. Only your health status, age and whether you are male or female will be associated with the anonymised stem cells.

What information will be produced by this study?

It is very important that you consider the type of information which will be produced by this study: From the sample that you provide us with, we will make cells that will be kept indefinitely. This resource will be used to understand why damage builds up in cells. We will study your cells in many different ways including looking at the DNA of these cells.

To enable your contribution to provide the greatest benefit to research we would like to be able to share:

Infosheet Control Version 5. 020714

- 1) anonymised genetic data with other researchers. The information we obtain about your DNA will be placed in a secure electronic data archive called the European phenome-Genome Archive (EGA) (a database). The EGA is kept and maintained by the European Bioinformatics Institute (EBI) in Hinxton, Cambridge, UK.
- 2) anonymised stem cells with a regulated cell storage facility.

These data will be completely unconnected to your name or other traceable identifier and will be stored for an indefinite period of time. Access to this anonymised information is limited to legitimate researchers.

Although it is not the main purpose of this study, we may find information about DNA changes that can be passed on in your family. These changes may affect your risk of developing disease. However, the techniques we are using are NOT accurate enough to be used to diagnose these genetic changes. Because of this, we will *not report any genetic changes that we find*.

Will my taking part in this study be kept confidential?

If you join the study, some parts of your medical records may be looked at by responsible and authorised clinicians/researchers. The data collected for the study will be stored in a password-protected electronic data archive and only looked at by authorised persons involved in running the research. They may also be looked at by authorised persons from the Addenbrooke's Hospital NHS Trust Research and Development Department to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and nothing that could reveal your identity will be shared outside the research site.

Procedures for handling, processing, storage and destruction of personal, identifiable data are compliant with the UK Data Protection Act 1998.

Once a sample is collected it will be anonymised. Throughout the processing and handling of your sample, it will always be anonymised. The stem cells produced from your sample and the genetic data produced will also remain anonymised.

The anonymised stem cells and the anonymised genetic data will be kept indefinitely in regulated facilities accessible only by legitimate researchers.

Results from this study may be published in scientific journals or presented at conferences in a way that will not identify you, unless very specific consent has been sought to do so from you.

What will happen to the results of the research study?

The results will be published in scientific journals and/or presented at scientific meetings. When data are published or presented they will be completely anonymous.

The raw genetic information that is produced by analysing your DNA will be deposited and stored indefinitely in a central electronic data archive (a database). This archive enables anonymised data to be shared with the research community. The archive is called the European Genome-phenome Archive (EGA) and is run by the European Bioinformatics Institute, Hinxton, Cambridge, UK. Access to the anonymised information stored in this archive will only be accepted via applications from appropriately qualified researchers who sign a legally-binding Data Access Agreement in which they commit to:

- a) use the data only for research purposes;
- b) protect the data confidentiality;
- c) provide appropriate data security;
- d) not attempt to identify individual participants from whom data were obtained;
- e) not redistribute the data or any parts of the data that could be used to identify the research participant.

Infosheet Control Version 5. 020714

For the data to be useful to researchers, some information about your health status will also be linked to the genetic information. Personal identifiable data such as your name, date of birth and address will not be shared with researchers.

What will happen if I don't want to carry on with the study?

If you withdraw from the study, we will retain any data and results of analyses that we have obtained up until the time of your withdrawal. If you request us to do so, we will destroy any identifiable data and any remaining samples, but you need to know that we cannot destroy any stem cells we have already made.

What if there is a problem?

Complaints:

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. You can contact the researchers on 01223-834244 (ask for Dr. Serena Nik-Zainal) or by email at signatures@sanger.ac.uk. If you remain unhappy and wish to complain formally, you can do this through the Addenbrooke's Hospitals NHS Trust Complaints Procedure. Details can be obtained from Addenbrooke's Hospital Patient Advice and Liaison Service on 01223-216756.

Harm:

In the event that something does go wrong during the research study, we have appropriate insurance. If appropriate, the normal [*National Health Service*] complaints mechanisms will also be available to you.

What will happen if my understanding and ability to consent is impaired by illness or death in the future?

Certain disorders can result in disability or other major health problems as patients get older. For this reason, we shall ask you to consider now whether you are happy for this research to continue on your samples in the event that we are unable to discuss this with you in the future for reasons of illness or even death. If you wish us to stop the research in this situation, please tell us now. We will destroy all identifiable samples, but will retain any data, results of analyses and stem cells we have made up to this point. However, if you indicate that you are happy for us to continue, we shall proceed with our attempts to understand how and why damage builds up in the cells of people.

What if relevant new information becomes available?

Occasionally, advances in the technology used to assess your data may reveal new information, but this will not affect your involvement in this study.

Who is organising and funding the research?

The study is organised by medical doctors and researchers at Wellcome Trust Sanger Institute. It is funded by research grants from the Wellcome Trust.

Who has reviewed the study?

This study has been given a favourable ethical opinion by the National Research Ethics Service Committee East of England - Norfolk, and by the Scotland A Research Ethics Committee.

Infosheet Control Version 5. 020714

Expenses and payments

If you decide to take part in the study, you will not receive payment but we will pay reasonable travel expenses.

Further information and contact details

You are welcome to address further enquiries to the following doctor in the study team:

*Dr Serena Nik-Zainal
Wellcome Trust Intermediate Clinical Fellow
Honorary Clinical Geneticist
Wellcome Trust Sanger Institute
Cambridge CB10 1SA
United Kingdom
e-mail: signatures@sanger.ac.uk
Phone number: 01223 494947*

Thank you.

We would like to thank you for considering taking part in our research and for taking the time to read about this study. If you now go on to participate in the study, you will be given a copy of this information sheet and of your signed consent form to keep for your records.