Name of professional

Address

Date

Dear (name of professional),

Re: A study about how parts of the brain work in people with Down Syndrome

I am writing to request your assistance in recruiting suitable participants for the above study.

My name is Carla Startin and I am a researcher working at University College London. I am carrying out research to investigate individual differences in cognitive functions (brain functions) in people with Down Syndrome, and possible genetic and biological reasons for these differences. The study is funded by the Wellcome Trust, and is sponsored by University College London. The study has been reviewed by the (insert REC name) Research Ethics Committee.

Information about the study can be found after this letter. If you know any individuals who may be interested in participating in this study, and meet the eligibility criteria, I would be grateful if you could discuss this study with them (see enclosed leaflet), and ask them whether they would be interested in participating or finding out more information.

If they would like to participate/find out more information, please could you send me a contact name and contact information, either by emailing me at downsyndrome@ucl.ac.uk or calling me on 020 7679 9314. I will then discuss the study with them, answer any questions they may have and send them more details about the study.

If they are still interested in participating, I will arrange a session when I can meet them to perform the assessments in the study. Before any assessments take place, I will obtain informed consent from them to participate in the study, or if appropriate, I will discuss their inclusion in the study with a consultee. I may also arrange to collect some information from a member of the learning disability team regarding their capacity to consent and contacting a suitable consultee.

Please contact me if you have any questions.

Carla

What is the importance of the study?

People with Down Syndrome are known to show a large amount of variability in their individual cognitive abilities. These abilities include attention, task planning, memory, language, and co-ordination of movements. Alzheimer's Disease occurs more often in individuals with Down Syndrome compared to typically developing individuals. Differences in terms of genetics or cellular development may help to explain cognitive variations in individuals with Down Syndrome, and why some individuals with Down Syndrome develop Alzheimer's Disease while others do not.

We are collecting data from a large number of individuals with Down Syndrome to investigate some of the genetic and biological reasons that help to explain this large cognitive variability in individuals with Down Syndrome. This may also help us to understand the variability in terms of the clinical signs of Alzheimer's Disease in people with Down Syndrome. The results of these studies will hopefully improve the care and treatment of individuals with Down Syndrome, and may also help to develop new treatments for Alzheimer's Disease.

Participants in this study will be given a variety of tasks to investigate their cognitive functions. We will also ask participants to give a blood or saliva sample for genetic (DNA) analysis. Finally, we will ask participants for a hair sample from their head (or if the participant is bald, for a skin sample), so that we can investigate how the participant's cells develop.

We will also investigate the brain activity of some of the individuals in the study, to investigate whether differences in brain activity can help to explain the large cognitive variability in individuals with Down Syndrome. To do this, participants will be asked if we can place a special cap on their head for us to investigate their brain activity. This cap contains electrodes, and we will ask participants to sit as still as possible while we record their brain activity.

These studies will help us to determine whether genetic and biological factors can explain the differences in cognitive abilities and the development of Alzheimer's Disease in individuals with Down Syndrome.

Who is eligible?

We are looking for people with Down Syndrome, aged 16 and older. Participants will need to be able to understand simple verbal commands and perform simple puzzles and games. We will include people who have stable and treated mental or physical health problems. We will not be able to include people who are currently affected by an acute condition, however such individuals will be welcome to take part when they are better.

We will include people who lack capacity to consent to the study. If a participant lacks capacity, we have to seek an opinion from a personal or nominated consultee.

What will the study involve?

Participants will take part in an assessment which will last around 3 hours. During this assessment they will be asked to complete various tests (like games) on a touchscreen computer tablet and using tabletop tools. Relatives or carers will be asked to be present during the assessment and will be asked to complete informant questionnaires during this time. Participants will be given a break half way through the assessment, or more as required.

We will collect some basic information about the participants from them and their carers. We will also collect information about the participants' medical history from them or their carers. We may also discuss participants with their community learning disability teams and look at their patient records.

We will check participants' blood pressure and general physical health. We would also like to monitor participants' sleep patterns, through the use of a sleep diary and by them wearing a special bracelet during the night which records when they are asleep. We will also take a blood sample or a saliva sample for genetic (DNA) analysis. Finally, we will take a hair sample for cellular analysis; hair samples will be taken by plucking 6-10 hairs (including the follicles) from the scalp.

For participants with no hair, or where hair sampling fails to produce growing cells, we may ask to obtain a small sample of skin. This will be taken as a punch biopsy. Skin biopsies will be 3-4mm in diameter, and will be taken from the forearm. The skin will first be thoroughly cleaned, and a small injection of a local anaesthetic will be given to numb the skin. A sample of skin will then be taken from the numb area of the skin using a small blade shaped in a circle. Gentle pressure will be applied to the blade and it will be rotated so that it breaks the surface of the skin. A small circle of skin will be carefully removed using a scalpel and tweezers. After the biopsy a plaster and dressing will then be applied. Taking a skin biopsy is a very simple procedure which takes 10-15 minutes and is performed in the outpatient setting. The risks of this procedure are very small and include minor scarring and in rare cases minor and easily treatable wound infections. Generally, the skin heals easily within one to two weeks. The risk of bleeding or infection is extremely low. We would discuss any concerns you may have about this procedure before carrying it out. We would ask you are present during this to reassure the participant. Participants can still take part in the study if they do not want to give hair or skin samples.

Where will assessments be done?

The assessment will be arranged at a time and place that is convenient for the participants; this may include their home address or their local community learning disability centre. We will reimburse any travel expenses for participants or carers.

For those individuals whose brain activity we would like to investigate, we will invite them to University College London to record their brain activity. This assessment will

last around 1 hour, and we will measure their brain activity for about twenty minutes. We will reimburse travel expenses for this assessment, and we will arrange the assessment at a time that is convenient for the participants. Relatives or carers are welcome to be present during the assessment.

What happens after the assessment?

We will give participants a small gift to say thank you for their help. We will tell the participant's GP they have taken part in the study, and we may ask to access their medical records. We will also pass on details of the assessments given to the participants' GP, if requested.

What will happen if we notice anything unusual?

If we notice anything which may be of clinical significance (e.g. if a participant who has not been diagnosed with dementia by the care team has a score suggestive of dementia on the cognitive assessment), we will let the care team or GP know. They can then take the appropriate action.

What will happen to the information collected during the study?

All personal information and any information we obtain from our studies will be completely confidential and known only to the research team. All of the results from the study, including the genetic results, will be stored on a database. These will be anonymised (i.e. personal information about participants will not be stored with any data collected about them). The results may be sent to other researchers or shared with other researchers (these will be anonymised). All personal data will be handled in accordance with the provisions of the Data Protection Act 1998. Personal data will be password protected and securely held on the UCL IT system or locked in a filing cabinet. Access will be restricted to members of the research team. Personal data will be stored separately from the genetic and cognitive databases. Personal data will not be disclosed without the consent of the participant (or advice from the consultee if the participant does not have capacity to consent). However, if there is a serious risk of harm to the participant or others, or concerns for the neglect or abuse of the participant, then we will have to share this information with appropriate agencies. This may be without your or the participant's permission. If this happens we would discuss it with you and the participant first. If there are health concerns, the participant's care team or GP may also need to be informed. If this happens we would also discuss it with you and the participant first.

Anonymised paper records will be stored securely within the Faculty of Brain Sciences at University College London. The anonymised genetic, brain activity and clinical data will be entered into an electronic database held within the Faculty of

Brain Sciences at University College London. Anonymised cellular data will be entered into an electronic database held within Queen Mary, University of London. Research data will be stored for 20 years following the end of the study, following UCL regulations.

Analysis of the results of the cognitive tasks, brain activity and sleep patterns will be performed within University College London. Saliva/blood samples will be stored anonymously and analysed in laboratories within University College London, or in some cases in laboratories outside University College London. Occasionally the analysis may have to be performed outside the UK. Hair/skin samples will be stored anonymously and analysed in laboratories at Queen Mary, University of London. All biological samples will be anonymised at the point of collection. The anonymisation codes will be accessible only to members of the research team, and these will be held securely. Anonymised samples may be shared with other research groups who are conducting research in the field of learning disabilities. Samples may be stored for use in future research. Anonymised genetic data may be shared with other research groups or entered onto publically accessible databases such as Decipher. This is standard practice in genetic studies, and the best way to quickly share information about new genetic findings with other researchers and clinicians across the world.

We will publish the results from these studies in academic journals, and present them at scientific conferences and meetings. In addition, we will keep participants informed about how the study is progressing via a regular newsletter. No participants will be identifiable from any publications arising from the study.

We would like to keep a record of participants' contact details so that we can contact them if we need more information or if we are thinking about doing more research. We will keep this information for ten years following the end of the study.

What are the risks and benefits of the study?

There are few risks to potential participants.

Participants may feel frustrated and anxious when completing the tasks. To minimise this we will have a break in the middle of the session, and we will give further breaks where appropriate.

Giving a blood sample may cause mild pain, some bleeding and bruising. To reduce pain we can use a cream before taking the sample, or if a blood test for any medical reason is planned for the future, we can ask the participant's doctor to collect it for us on our behalf at the same time. It will also be possible for us to collect a saliva sample if this is preferable; this may be uncomfortable but should not hurt. Giving a hair sample may also cause discomfort, although this should not last. If we would like to get a skin sample from the participant we will use a local anaesthetic injection to minimise any pain (this may sting for a few seconds when it is injected), and

afterwards we may rarely put in a stitch and put on dressing to help the skin heal. Very rarely allergic reactions to the local anaesthetic occur; to prevent this you should tell us about any allergic reactions the participant has experienced in the past. There is also a small risk of infection with skin biopsies, which might need to be treated using antibiotics. Finally, the biopsy may leave a small scar, but this is often barely visible after several months.

This study will benefit individuals with Down Syndrome as it will increase knowledge about reasons for individual variation in those with Down Syndrome. This study may also advance knowledge about the development of Alzheimer's Disease. This may lead to improved care and treatment of individuals with Down Syndrome or Alzheimer's Disease in the future.

In addition, the tasks that the participant will complete during this study will provide a baseline against which future changes can be measured. If requested we will be happy to share these results with the participant's GP or care team.

Withdrawing from the study

If you decide at any time the participant should withdraw from the study, you have the right to withdraw them and not give a reason. Withdrawing from the study or a decision not to take part will not affect any aspects of care for the participant.

Advice and complaints

If you wish to complain, or have any concerns about any aspect of the way the participant has been approached or treated by members of staff due to their participation in the research, National Health Service (if they were recruited via the NHS) or UCL complaints mechanisms are available to you. Please ask Carla Startin (carla.startin.09@ucl.ac.uk, 020 7679 9314) if you would like more information on this. In the unlikely event that the participant is harmed by taking part in this study, compensation may be available to them. If you suspect that the harm is the result of the Sponsor's (University College London) or the hospital's negligence then you may be able to claim compensation. After discussing with Carla Startin, please make the claim in writing to Andre Strydom (a.strydom@ucl.ac.uk, 020 7679 9308), who is the Chief Investigator for the research and is based at UCL. The Chief Investigator will then pass the claim to the Sponsor's Insurers, via the Sponsor's office. The participant may have to bear the costs of the legal action initially, and you should consult a lawyer about this. *NHS Indemnity does not offer no-fault compensation i.e. for non-negligent harm, and NHS bodies are unable to agree in advance to pay compensation for non-negligent harm.*

Thank you for taking the time to read this information sheet

Please contact me if you have any questions

Details of contact person

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