ForeCAst:

Effector Cell Assay for Predicting Clinical Cat Allergy in Asthma

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Participant Information Sheet

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You are invited to take part in this study

You are being invited to take part in a research study that aims to develop an easy lab-based test, which could help us to understand if exposure to cats make asthma symptoms worse. This research is a part of a doctoral degree. Before you decide whether to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take time to read the following information carefully before deciding whether to take part and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information.

Thank you for taking the time to read this.

Why are we doing this study?

Many people with allergy and asthma live with pet cats. However, we do not know for sure whether the presence of cats makes their asthma symptoms worse. We would like to develop an easy test which could help us to understand if exposure to cats is making their asthma worse.

Who will conduct the research?

The research will be conducted by the research team led by Dr Clare Murray and Professor Angela Simpson (Division of Infection, Immunity & Respiratory Medicine, School of Biological Sciences, University of Manchester). We also collaborate with McMaster University in Canada.

Important things that you need to know

- We hope this research will help us to develop an easy test, which will help doctors to advise patients if it is ok to live with cats.
- Taking part involves 2 to 3 clinical visits to the hospital, where we will measure how your lungs respond when you are exposed to cat allergen.

How to contact us

If you have any questions about this study please talk to **Dr. Ran Wang** at:
Wythenshawe Hospital, Southmoor Road, Wythenshawe, Manchester, M23 9LT
Tel: 0161 291 xxxx
Mobile: xxxx
E-mail: xxxxxx

Why we are doing this research

Asthma is one of the commonest lung conditions in the UK. Many people with asthma and allergy live with pets at home. This can make their symptoms worse. Because people are often exposed to many things around them at once, it can be difficult for patients with asthma and allergies to tell if it is their pets making their symptoms worse. Unfortunately, currently there is no easy test to diagnose this. Generally doctors advise removal of pets, but this is not always easy and might not be necessary if the pets are not making the symptoms worse.

This study focuses on cat allergy.

We hope that by doing this research, we can help doctors to better diagnose cat allergy in asthma and give people the right advice about the impact of their cat on their asthma. With further research, the results of this study could potentially be expanded to other allergies too.

Why have I been asked to take part?

You have been given this information sheet because you may have cat allergy or you have mild asthma.

Who can take part in the study?

We are looking for people aged between 18 and 65 who may either have cat allergy or mild asthma. We cannot include people who are pregnant or have been heavy smokers or have been generally unwell.

You do not have to take part if you do not wish to. Your decision will not affect the standard of care you receive.

What would I be asked to do if I took part?

An experienced researcher will explain the study to you in more detail and give you the opportunity to ask any questions before asking you to sign a consent form at your first visit.

With your permission your GP will be informed of your participation in this study.

We will ask you to participate in a variety of tests. The study is carried out over 2 to 3 visits at Manchester University NHS Foundation Trust. We will also visit you briefly at your home the day after the last clinic visit.

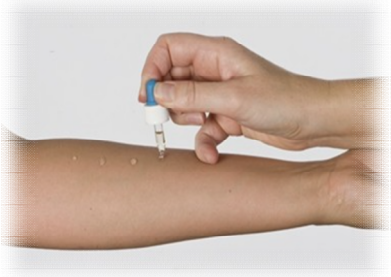
You will not need to stay overnight. All visit times given are approximate.

- **Visit 1a (30min)**

  Consent and skin prick testing to common inhaled allergens will be performed. This will tell us if you are sensitive to cat or other allergens. If you are sensitive to cat, you will be invited to attend visit 1b, which could be carried out on the same day or on a later date, whichever you prefer. If you are not sensitive to cat based on this test, the study will not carry on and will end here.

PROCEDURE DURING VISIT 1a

Skin prick test:



We will check if you have an allergy to dust mites, cats, dogs, pollens and moulds with skin prick tests. After putting a drop of each substance onto your forearm, we scratch the surface of the skin slightly. If you are sensitive to the allergen, you may get a small red itchy area on your skin. The itching goes away quickly but if needed we will put some anti-histamine cream on the skin.

Side-effects: local skin reaction or very rarely systemic reaction that may require antihistamine or anti-inflammatory medication.

Visit 1b (Up to 1.5 hours)

Clinical history and clinical examination and lung function (spirometry) will be performed. A short questionnaire about symptoms related to asthma will be completed. A blood test will be taken. A methacholine challenge test (see below) will be performed. If this is positive, a second skin prick test will occur. This skin prick test is slightly different from the first one. During this skin prick test, different amounts of cat allergen will be tested to see how much cat allergen you are sensitive to. The procedure will be very similar to the first skin prick test.

If you have a positive methacholine challenge test, you will be invited to visit 2 on the following day. However, if you have a negative methacholine test, the study will end here for you.

PROCEDURES DURING VISIT 1b

Sample of blood

Some people have signs of asthma or allergies in their blood. We will take about 30ml of blood (~6 teaspoons). We can use a cold spray which freezes the skin so that the needle-prick is less noticeable.

The blood samples will be used to measure our new allergy test, which we are developing. We will also measure allergy antibodies, a full blood count and markers of exposure and inflammation.

Side effects - Occasionally slight discomfort is felt and slight bruising can occur where the blood is taken. Some people can feel faint whilst blood is being withdrawn.

Spirometry

This is a simple test to measure whether there is any obstruction in your breathing.

You will be asked to breathe in as deeply as possible and then blow into a machine as hard and long as you can, so that we can measure your lung capacity and measure how much flow you can generate when blowing hard.

Side effects with breathing tests – the breathing tests are safe and are used routinely by GPs and hospital clinics. Sometimes when you breathe in and out quickly it can make you feel a little dizzy, so you can do the measurements sitting down.

Methacholine challenge

This is a safe and painless way of measuring the sensitivity of the airways. Methacholine is a medicine which, when inhaled, can cause the airways to tighten in people with asthma because their airways are more sensitive.

During the challenge test, you will be asked to take normal breaths from a nebulizer containing methacholine for 2 minutes. After this your lung function will be measured again to see whether the

methacholine has caused any tightness in your airways. If there is no effect you will be asked to repeat the procedure with increased doses of methacholine up to a maximum of 12 doses. If there is any evidence of tightness we will give you a few puffs of an inhaler to return your lung function back to normal.

Side-effects: wheezing, breathlessness, coughing, chest tightness, flushing and headaches. These symptoms can occur but if they do should be short-lived.

Visit 2 (up to 8 hours)

We will start this study visit early in the morning. During this visit, we will perform an inhaled allergen challenge and monitor you closely before sending you home.

PROCEDURES DURING VISIT 2

Inhaled allergen challenge

This test is not currently available on the NHS but has been used for over 20 years in research. It is similar to the methacholine challenge mentioned above, but instead of breathing in increasing amounts of methacholine, we ask you to breathe in increasing amounts of cat allergen extract. We carefully measure the change in your lung function and look for when your airways start to show any tightness. We will stop you from breathing in any more allergen, when we see a 20% change in your lung function. We will continue to monitor your lung function (by using spirometry) at the following times after you have finished inhaling the allergen: 20min, 30min, 45min, 60min, 90min, 2h, 3h, 4h, 5h, 6h and 7h. This is to ensure no further narrowing of your airways occurs, as in about 50% of people it is possible to see a second narrowing of the airways up to 7 hours later. During the test, we will collect three breath samples and three blood samples for measurement of inflammatory markers. We will take about 10ml of blood (~2 teaspoons) each time. We can try to put a thin plastic tube (cannula) inside one of your veins if possible to avoid using a needle to obtain the blood samples repeatedly. The tube will be removed before you go home. If necessary, we can use a cold spray which freezes the skin so that the needle-prick is less noticeable.

During this visit, if you could provide sputum, we will collect sputum samples for the measurement of inflammatory cells.

During the first 2 hours we will ask you to stay in the clinic room as we will need to closely monitor you. After that you are welcome to sit in the waiting area as long as you are close to the clinic room for the pre-arranged breathing test times. During this time we ask that you do not use your inhalers without discussing with us first, and do not consume caffeine. We allow you to eat after two hours. Once the 7 hours is completed we will give you a dose of your reliever inhaler and clear instructions what to do once you get home.

Side-effects: wheezing, breathlessness, coughing, chest tightness, flushing and headaches.

Visit 3 (home visit)

This will occur the day after inhaled allergen challenge. We will ask you a few questions about any symptoms since you arrived home after Visit 2. We will repeat the spirometry test. We would also like to collect a sample from your living room carpet using a special vacuum cleaner. This is for measurement of allergen levels

Visit 4 (email or phone)

We will contact you (via email or phone, whichever you prefer) 3-5 days later just to check if everything is well.

The study will end here.

WHAT HAPPENS TO YOUR TISSUE SAMPLES?

During this study, the researchers will collect blood samples and sputum samples from you. These samples will be coded and processed soon after collection in a laboratories at Manchester University NHS Foundation Trust. The part of the blood which does not contain any cells (nor your DNA) will be batched and sent to laboratories at the University of Manchester for analysis. We are collaborating with several other academic institutions to find new markers which may help with the diagnosis of asthma. These institutions may be outside the European Union where data protection legislation is not as rigorous as in the UK. However, no personal identifiable information about you will accompany these samples and there will be no way that any unauthorised person will know the identity of individuals taking part.

During this study, your samples will not involve use of laboratory animals and we will not analyse your DNA (genetic material).

If you agree, we can inform your GP and/or your clinical care team about your test results.

As the blood test in this study is at the forefront of research, if you agree, we would like to store a portion of your samples for use in the future, as new areas of interest in asthma and allergy research are identified. To allow us to do this we are asking you to "gift" your samples (the part of the blood which does not contain any cells, nor your DNA) to us for research purposes. In this case, the samples will be stored indefinitely or until they are used up. We will ensure that the samples are handled in accordance with the law. It will be possible for researchers from other academic institutions and commercial companies such as pharmaceutical industry to apply for access to the samples and clinical data we collected in this study. Before any researchers are given access to your samples, the quality of research project will be measured by a group of expert scientists and doctors. Only applications that meet high scientific and ethical standards will be accepted. We will not profit from your samples. No personal identifiable information about you will accompany these samples and there will be no way that any unauthorised person will know the identity of individuals taking part.

In the event that something does go wrong and you are harmed during the research you may have grounds for a legal action for compensation against the University of Manchester or MFT, but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you.

What happens if I do not want to take part or if I change my mind?

It is up to you to decide whether or not to take part. You can simply tell one of the researchers about your decision to take part or not. If you do decide to take part you will be given this information sheet to keep and will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason and without detriment to yourself. However, it will not be possible to remove your data from the project once it has been anonymised as we will not be able to identify your specific data. This does not affect your data protection rights. If you decide not to take part you do not need to do anything further.

The study doctor may also choose to withdraw you from the study if it is necessary for your health.

Are there any benefits from taking part?

We cannot promise the study will help you.

But taking part in the study you will get a comprehensive assessment of your lung health and you will be able to find out whether you are sensitive to some allergens. We will do some routine tests and some specialist tests not available in general practice. This will allow us to assess how well your lungs are functioning.

You and your GP (if you agree) will receive a copy of your results.

In the future, we hope that the information we get from this study will help doctors to advise patients with asthma and pets, what the best course of action is.

Are there any risks from taking part?

Inhaled allergen challenge has been used in research settings in asthma. It is mostly well-tolerated and is considered to be safe.

During the inhaled allergen test, we anticipate that your airway (windpipe) may narrow a little. If this occurs you may develop breathlessness, wheeziness, chest tightness, cough, flushing or headache. Throughout the study, doctors will be present at all times to look after you. We will give you a rescue (blue reliever) inhaler to ease your symptoms if this is necessary. We will continue to monitor you for up to 8 hours. This is because some people may develop delayed narrowing of their airways.

Although our experience tells us that serious side effects are not common, we will give you precautionary advice and instructions just in case you start to have more symptoms. We will provide you with instructions on how to monitor your symptoms and give you contact details of the study doctor in case you need advice after the inhaled challenge. We will visit you the next day to ensure you remain well.

In the **very unlikely** event of a severe allergic reaction to the inhaled allergen test, we may ask you to stay overnight in the hospital for close observations until you recover. This risk is very small but we take any allergic reaction seriously. We ensure all staff are trained in managing allergic reactions.

What if I have a complaint?

We do not anticipate that anything will go wrong but if you have any concerns during or after the study, please speak to the research team. If you wish to make a formal complaint to someone independent of the research team, or if you are not satisfied with the response you have gained from the researchers in the first instance, then please contact:

- The Research Governance and Integrity Officer, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester, M13 9PL, by emailing: research.complaints@manchester.ac.uk or by telephoning 0161 275 2674.

- If you wish to contact us about your data protection rights, please email dataprotection@manchester.ac.uk or write to The Information Governance Office, Christie Building, The University of Manchester, Oxford Road, M13 9PL at the University and we will guide you through the process of exercising your rights.

- You also have a right to complain to the Information Commissioner's Office (https://ico.org.uk/make-a-complaint/) about complaints relating to your personal identifiable information. **Tel:** 0303 123 1113

Will my lifestyle be affected if I take part?

There are some restrictions associated with certain visits on this study. For example, if you are a female of child bearing potential, we will perform a pregnancy test at the start of the study to ensure you are not pregnant. We will also ask that you refrain from caffeine (i.e. coffee, tea, coca cola, chocolate) for up to 8 hours before the study visits and also during the visits. If you are using antihistamines, we will ask that you refrain from using these for 5 days prior to the skin prick testing and inhaled allergen test.

Will I be compensated for taking part?

We will pay for any expenses during your visit such as petrol, taxi or bus fares and parking costs. If you have attended and completed visit 1b you will receive £10. If you have completed both visit 1b and visit 2, you will receive £50 for compensation of your time as token of thanks for taking part. This will be given at the end of the study.

Will taking part affect my health insurance?

If you have private medical insurance, please check with your insurance company to see if your policy will be affected by taking part.

Data protection and confidentiality

- ***What information will you collect about me?***

By agreeing to take part in the study, we will need to collect information that could identify you. This is called "personal identifiable information". Specifically we will need to collect:

- Your full name
- Date of birth
- Home address
- Your contact details
- Registered GP
- NHS number

We collect these information in order to confirm your suitability to take part in the study and that this study will not pose an unacceptable risk to you. We will also inform your GP about your participation in the study and any test results collected. We will record your contact details to check if you remain well during the study period.

Other personal information we will collection will include your ethnicity, gender, height and weight. These information are essential for the calculation of your lung test results. We will also collect data about your general health, information related to your allergy and/or asthma, and any medications that you take. This is to ensure that you are eligible for the study and the information will help us to interpret the results of the study.

- ***Who has access to my medical records?***

Your medical records will only be accessed by your direct care team before you agree to take part in the study. By agreeing to take part in this research, you will allow your details and relevant medical records to be made available only to authorised research staff who are all bound by the duty of confidentiality. We need the access to your medical records to ensure that the researchers will be able to check that you are suitable and safe to take part in the study.

Please also note that individuals from the University of Manchester, the NHS Trust or regulatory authorities may need to look at the data collected and relevant sections of your medical notes, for this study to make sure the project is being carried out as planned. This may involve looking at identifiable data. All indivudals involved in auditing and monitoring the study will have a strict duty of confidentiality to you as a research participant.

- ***Under what legal basis are you collecting this information?***

We are collecting and storing this personal identifiable information in accordance with data protection law which protect your rights. These state that we must have a legal basis (specific reason) for collecting your data. For this study, the specific reason is that it is "a public interest task" and "a process necessary for research purposes".

- ***What are my rights in relation to the information you will collect about me?***

You have a number of rights under data protection law regarding your personal information. For example you can request a copy of the information we hold about you.

If you would like to know more about your different rights or the way we use your personal information to ensure we follow the law, please consult our Privacy Notice for Research at http://documents.manchester.ac.uk/display.aspx?DocID=37095

- ***Will my participation in the study be confidential and my personal identifiable information be protected?***

In accordance with data protection law, The University of Manchester is the Data Controller for this project. This means that we are responsible for making sure your personal information is kept secure, confidential and used only in the way you have been told it will be used. All researchers are trained with this in mind, and your data will be looked after in the following way:

- Only the study team at The University of Manchester will have access to your personal information, but they will pseudonymise it as soon as possible. Your name and any other identifying information will be removed and replaced with a random ID number as soon as you take part in the study. Only the research team will know the key that links this ID number to your personal information.
- The data collected from you during the study will be kept in secured places. The paper-based documents will be kept at Manchester University NHS Foundation Trust in locked drawers and the electronic database will be kept at University of Manchester in a secured drive. The access to both paper-based records and electronic database will be limited to people who are authorised.
- The data collected (paper based and electronic database) will not be transferred between UoM and MFT.
- We will not share the data with any other organisation
- We will keep identifiable information about you until the study has finished and all the results have been analysed. This is to ensure that we can send you the results of the study via newsletter, if you agree.
- The non-identifiable information collected during the study will be kept for 5 years before permanently and securely destroyed/deleted.

Who has reviewed this study?

Research in the NHS is looked at by an independent group of people called a Research Ethics Committee.

The Research Ethics Committee is made up of experts, non-experts and members of the general public. Together they review research applications to ensure your safety, rights, wellbeing and dignity are protected at all times. This study has been reviewed and approved by an NHS research ethics committee. (Reference xxx)

What will happen to the study results?

We hope that the results of the study help doctors to provide better advice to patients who are allergic to cats. The results of the study will be presented at conferences, published in medical journals and in a student thesis. Your name will *never* appear in any report or publication arising from this study. We hope that the results of this study will lead to changes in the national and international guidelines on how to diagnose cat allergy in asthma. If you agree, we will send you a summary of the findings of the study.

Who is organising and funding the research?

This research is being carried out at the Manchester University NHS Foundation Trust, by staff from the University of Manchester. The study is funded by a grant from the J P Moulton Charitable Foundation.

Contacts for further information

If you would like more information about this research, or research in general, please speak to a member of the research team on **xxxxxxxx** (between 9am and 5pm) who will be happy to answer any questions or concerns you might have.

Thank you for reading this information sheet.