

Short PIL – hospital recruitment

Can we Reduce
Asthma
Attacks in
Children
using Exhaled
Nitric
Oxide measurements?

Are you interested in research into children's asthma treatment?

If yes, we would like to tell you about the RAACENO study because we think your child might be eligible to take part, but they don't have to take part if they don't want to.

What is the purpose of the RAACENO study?

We all have a gas called nitric oxide in the air we breathe out. People of all ages with asthma have more nitric oxide in their breath than people without asthma. Nitric oxide levels go up before and during an asthma attack and come back down after an attack. We are doing this study to see whether measuring the levels of exhaled (breathed out) nitric oxide at an asthma check-up would help your doctor to make decisions about asthma treatment.

What's special about the RAACENO study?

- We want to determine whether basing treatment on the levels of exhaled (breathed out) nitric oxide will help reduce the number of asthma attacks children have.
- The study is funded by the NHS through one of its research programmes.
- To do this study properly we need 502 children with asthma from up and down the UK to take part.
- Each child who takes part will be in the study for one year.

There will be two groups of children in the RAACENO study. Children in both groups will be invited to come to their local hospital every three months for a year. These visits will replace their usual asthma clinic appointments. Your hospital asthma doctor will still be available to speak to you if you want.

One group will have their asthma treatment managed in the normal way – based on their asthma symptoms

One group will have their asthma treatment managed using information about asthma symptoms and exhaled nitric oxide.

For more information about the study, or to talk to someone about taking part, please contact your local study team or the main study office on [REDACTED]

You can also find out more information and watch some videos about the research on our website: [REDACTED]

Your local study team is:

Short PIL – hospital PIC

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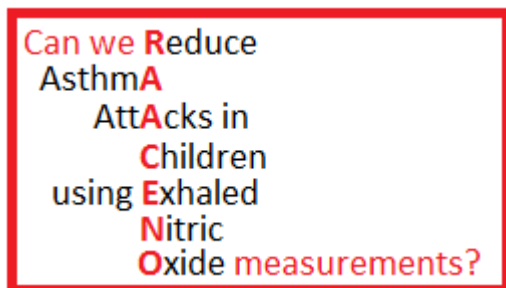
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Your local study team is:

Parent PIL - hospital

Can we Reduce Asthma Attacks in Children using Exhaled Nitric Oxide measurements? (RAACENO)



We would like to invite your child to participate in a research study which will test whether a breathing test every three months can help prevent asthma attacks. 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 this information carefully and to 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 you wish your child to take part.

Thank you for reading this.

What is the purpose of the research?

We all have a gas called nitric oxide in the air we breathe out. People of all ages with asthma have more nitric oxide in their breath than people without asthma. Nitric oxide levels go up before and during an asthma attack and come back down after an attack. The reason for the link between nitric oxide and asthma is that the same part of the body's immune system which causes allergy and asthma (cells called eosinophils) also produces nitric oxide.

Usually at an asthma check-up the doctor or nurse asks how your child's asthma has been, about any coughing or wheezing, and how often they use their blue inhaler. The doctor or nurse uses this information to help decide whether the asthma inhalers and any other medicines that your child takes should stay the same or be changed.

We are doing this study to see whether measuring the levels of exhaled (breathed out) nitric oxide at an asthma check-up would help a doctor or nurse to make these decisions about children's asthma treatment.

In this study, one group of children who take part will have their asthma managed in the normal way (the doctor or nurse will ask about their asthma and how often they use their inhaler), and one group will be managed in the normal way plus have their exhaled nitric oxide results used. We will collect information about any asthma attacks from all the children who take part. We will then compare whether one group has fewer asthma attacks than the other group.

To do this study properly we need 502 children with asthma from up and down the UK to take part.

Why has my child been chosen?

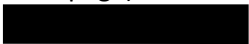
We have approached you about this study because your local hospital asthma doctor thinks that the study may be right for your child. This is because your child has asthma, has had an asthma attack in the last year so may be at risk for another attack and is between ages 6 and 15 (where we know the nitric oxide test can be done).

Do we have to take part?

No, it is up to you to decide whether or not your child can take part. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care your child receives.

What happens if my child participates?

If you take part in the study we would like you and your child to come to your local hospital every three months for a year. These visits will replace the asthma clinic appointments you usually have. Your child's hospital asthma doctor will still be available to speak to you if you want.

The first visit will last up to 90 minutes. During this time we will ask you and your child about your child's asthma. We will also ask you to fill in a questionnaire which tells us about your child's asthma and their recent symptoms. We will measure your child's height, weight and lung function (just like a regular asthma clinic). We will also measure your child's breathed out nitric oxide by asking them to breathe out slowly into a small machine for six to ten seconds (see photos on the next page). You can also see videos of these tests being done at 

Here is a photo of a young girl blowing into the nitric oxide machine....



....and here is a photo of the nitric oxide machine



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At the end of your first visit, your child will be randomly placed in a group. Either they will be in the group where asthma treatment depends on asthma symptoms alone OR they will be placed in a group where asthma treatment depends on asthma symptoms plus levels of exhaled nitric oxide.

Regardless of which group your child is in, their asthma treatment may stay the same or be changed slightly. There will be no big changes to your child's asthma treatment. Just like a normal asthma clinic, at the end of the visit you will get a prescription to go to the hospital pharmacy for any changes to your child's medication. We will write to your child's GP and their hospital asthma doctor with all the details of the visit, including any changes to treatment.

We will give you a diary to make a note of any asthma attacks your child has between visits. We will check your child's inhaler technique and review their asthma action plan (or give them one if they do not have one already). We will also give you a device which records when their asthma inhaler is taken. This allows us to see whether any asthma symptoms might be due to forgetting to take the inhaler. On the next page are some photos of inhalers with their logging devices. The logging device will only go on your child's

“preventer” inhaler. They will not have a logging device on their “reliever” inhaler.



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The second, third and fourth visits will last for 30-60 minutes and will take place about three, six and nine months after the first visit.

We will ask you to fill in a questionnaire about your child’s recent asthma symptoms, and ask you whether they have had an attack since the last visit and if so what happened. We will measure lung function and height (just like a normal asthma clinic). We will download the information on your child’s inhaler device. We will also measure exhaled nitric oxide. We will only tell you the results of the nitric oxide results if your child is in the group where symptoms and nitric oxide are being used to guide asthma treatment.

At the end of the visit, your child’s asthma treatment may stay the same or may change. We will write to your child’s GP and their hospital asthma doctor with all the details of the visit, including any changes to treatment, just like after a normal asthma clinic.

The last visit will last for up to 60 minutes and will take place about twelve months after the first visit. This will be like the second, third and fourth visits. We will measure lung function and height. We will download the information from your child’s inhaler device and we will measure exhaled nitric oxide. We will also weigh your child and

ask you to complete a questionnaire which tells us about your child's asthma and their recent symptoms, and how asthma affects their quality of life. We will ask you whether they have had an attack since the last visit and if so what happened.

At the end of the visit, your child's asthma treatment may stay the same or may change. Just like before, we will write to your child's GP and their hospital asthma doctor with all the details of the visit, including any changes to treatment. Your child's hospital asthma doctor will see your child in clinic three to six months after the final study visit. If your child is in the group where nitric oxide is not used to guide treatment we will write to you after the last visit with the nitric oxide results.

The table below summarises what would happen at each visit.

	First visit	Second, third and fourth visits	Last visit
Exhaled nitric oxide	✓	✓	✓
Questionnaire	✓	✓	✓
Lung function and height	✓	✓	✓
Weight	✓		✓
Inhaler log data		✓	✓

There are no blood tests at all.


After the last visit, we will also collect information about asthma attacks using data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions.

There are also optional parts to the study which will take another 30 minutes at the first visit and 20 minutes at the second visit. Your child can take part in the main RAACENO study without taking part in any of these optional parts of the study. Your child can take part in some or all of the optional parts.

The information we get from these optional parts of the study will help us understand how the trial is affecting the allergic cells in the lungs and also whether nitric oxide may be better at guiding asthma treatment in certain individuals, for example those with allergy.

The optional parts are:

An additional lung function test. This would be done at the first visit only. This will test your child's response to their inhaler. If your child wants to participate in this part of the study, we will ask them to not take their reliever inhaler (usually blue) for 4 hours before the visit. At the visit, we will ask them to take their inhaler and then measure their lung function again.

Skin allergy testing. This would be done at the first visit, although if your child did not do this test on the first visit and wanted to do it at a subsequent visit, they can do. Some children with asthma are allergic to things like dust, cat and egg. We call these things allergens. We will put some drops of water containing things that people might be allergic to (e.g. dust, cat, egg and pollen) on the inside of your child's forearm and gently scratch the skin under the drop. Your child will get some itching, rather like a midge-bite, which will last for between 15 and 30 minutes. You can see a video of the skin allergy testing on 

Collecting some mouth spit for DNA testing. This would be done at the first visit, although if your child did not do this on the first visit and wanted to do it at a subsequent visit, they can do. We would ask your child to rinse their mouth with 10mls of tap water for about 20 seconds and to spit the water into a container. This sample will be frozen and sent to Aberdeen to be stored. We hope to get funding in the future to test this sample for genes that are associated with asthma and allergy outcomes.

Collecting some coughed-up spit to measure airway inflammation.

This would be done at the first and the second visit. We would ask your child to cough up some spit from their lungs. To help them cough we will ask them to breathe in a salty mist for 5 minutes. This will make them cough and possibly wheeze so we will ask them to take their blue inhaler 15 minutes and test their lung function beforehand. Some children will require a second 5 minutes of breathing in the salty mist. The coughed up spit will be sent to a local NHS or University laboratory where they will count how many airway inflammation cells are present (the cells called eosinophils). The sample will be sent to Aberdeen to be stored in a freezer. We hope to get funding in the future to test this sample for any bugs that may be present.

Remember, your child can take part in the main study without taking part in any of these optional parts.

At the last visit we would like to understand what some children think of the exhaled nitric oxide measurements. We will invite twenty children to share their thoughts with us. Please let us know if you would like to know more about this other completely optional part of the study. There is a separate information sheet to explain this part of this study which we can give to you at the fourth study visit.

Long term follow-up in RAACENO

We plan to try and obtain funding to follow up the children who take part in the RAACENO study beyond the 12 month follow-up period. We would like to do this to see how health changes over time and impacts on their life. To do this, we would use data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions. **There would be no additional visits or questionnaires involved in this longer-term follow-up.**

We could get routinely collected NHS data from hospital and GP medical records – this would be done by someone who has permission to look at medical records. Alternatively, we could get routinely collected data from NHS and other government central data registers. Across the UK, there is the Office for National Statistics. In addition, in England there is NHS Digital, in Scotland the Information Services Division, and in Wales the NHS Wales Informatics Service. To get data from central data registers like these, we would securely send them some information about your child (e.g. date of birth, name, and address). They would then match this information to their records and securely send us information using your child's study number (and not their date of birth, name or address). As with all information collected within the main RAACENO study, this information would be held confidentially and stored securely.

Your child can take part in the main RAACENO study without agreeing to take part in this longer term follow-up.

What are the possible benefits of taking part?

All children will get regular asthma assessments. Asthma treatment is currently only guided by symptoms, and so children in the group where asthma treatment is guided by symptoms will continue to get current best asthma management. We are testing the possibility that using both the breathing test that measures exhaled nitric oxide **plus** symptoms to guide asthma treatment will reduce a child's risk for an asthma attack, but we do not know if this will work until the end of the study. At the end of the study, we will write and tell you the results of the study.

What are the possible risks of taking part?

The optional allergy testing will cause your child to have an itchy arm for a short time. The optional coughing up spit test may make your child cough and possibly also wheeze, but we will only do this

test after they have had their blue inhaler and had their lung function checked.

Will participation in the study be kept confidential?

Yes, all the information will be kept confidential. We will follow ethical and legal practice and all information about you and your child will be handled in confidence. All information which is collected about you during the research will be kept strictly confidential and will be held securely in accordance with the Data Protection Act. Data for all participants in the study, including those who withdraw, will be kept securely for a minimum of 10 years. Only certain members of the research team will have access to your information.

The statistical analysis of the study is being conducted at the University of Aberdeen, and to maintain confidentiality, the statistical team will only analyse anonymous data. (Anonymous data does not include names or addresses, and it is not possible to identify individual participants from anonymous data). Any reports or publications arising from the study will contain anonymous data so that you and your child cannot be recognised from it.

Other researchers may wish to access anonymous data from this study in the future. If this is the case, the Chief Investigator will ensure that the other researchers comply with legal, data protection and ethical guidelines.

If your child joins the study, the data collected for the study, together with any relevant medical records, may be looked at by authorised persons from the University of Aberdeen and the Research and Development Department of your local NHS Organisation to check that the study is being carried out correctly. All will have a duty of confidentiality to you and your child as a research participant.

Expenses and payments

You can receive travel expenses to attend your local study centre. Please ask your research nurse for information about how to claim travel expenses.

What will happen to the results of the research study?

We will share the results of the study with doctors across the UK who look after children with asthma. The results will be published in scientific journals and presented at scientific meetings. We will also send you a summary of the results.

Who is organising and funding the research?

This study is being organised by asthma doctors at the University of Aberdeen and elsewhere in the UK. The research is being funded by the Efficacy and Mechanism Evaluation (EME) Programme, a Medical Research Council and NHS National Institute for Health Research partnership.

The study is being co-ordinated by the Centre for Healthcare Randomised Trials (CHaRT), a registered clinical trials unit at the University of Aberdeen.

Who has reviewed this study?

The study has been reviewed by the North of Scotland Research Ethics Committee and also specialists in the field.

What if I want to complain?

If you believe that you have been harmed in any way by taking part in this study, you have the right to pursue a complaint and seek compensation through the research sponsors of the study - the University of Aberdeen and NHS Grampian. Contact details for both research sponsors are available through the research team.

As a patient of the NHS if you are harmed due to someone's negligence, then you may have grounds for a legal action, but you

may have to pay for it. Regardless of this, if you wish to complain, or have any concerns about any aspect of the way you have been approached or treated during the course of this study, the normal National Health Service complaints mechanisms would be available to you.

If you have a concern about any aspect of this study you should ask to speak to the study doctors who will answer your questions (contact details are at the end of this information leaflet). If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints mechanisms (or Private Institution). Contact details can be obtained from your local hospital.

What do I do now?

If you and your child are interested in taking part in this study or if you require any further information, please contact us. Our contact details are below.

{{insert local contact details}}

Thank you very much for taking the time to read and consider your participation in this study.

6-11 PIL - hospital

Can we Reduce Asthma Attacks in Children using Exhaled Nitric Oxide measurements? (RAACENO)

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Oxide measurements?

We would like to invite you to take part in a study which will see if taking a breathing test every three months can help prevent asthma attacks. Please talk with family and friends about the study.

Thank you for reading this.

Why is this study being done?

Usually at an asthma check up the doctor or nurse will measure your lung function and ask how your asthma has been. The doctor or nurse uses this information to help decide whether your asthma inhalers and any other medicines you take should stay the same, or be changed. The inhalers and any other asthma medicines that you take are designed to help your breathing and reduce the number of asthma attacks that you have.



This picture shows a boy having his lung function measured. You might have seen a similar machine, or one that looks a bit different.

We are doing this study to see whether adding a breathing test to usual asthma check ups at the hospital makes children have less asthma attacks. The test uses a machine to measure a gas that we all have in our breath called nitric oxide.

Here is a photo of the machine that measures nitric oxide levels



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Here is a photo of a young girl having a breathing test. She is blowing into the machine that measures nitric oxide levels in her breath



Boys and girls with asthma have more nitric oxide than children without asthma. Levels of nitric oxide in our breath go up and down. Measuring the nitric oxide levels might help doctors decide whether or not a child's asthma inhalers should be changed to help their breathing and try and stop them having an asthma attack.

Why have I been chosen?


Your hospital doctor has told us that you have asthma and have had an asthma attack in the last year.

Do I have to take part?

No. If you choose to take part, you can stop at any time and you don't need to say why.

What would I have to do if I take part in the study?

You would come to the hospital every three months for a year and instead of seeing your hospital asthma doctor you will see a special nurse. Your hospital asthma doctor will still be available to speak to you if you want.

The first visit will last up to 90 minutes. We'll ask some questions about your asthma. We will see how tall and heavy you are and do your breathing test (just like a regular asthma clinic). We will also measure the nitric oxide in your breath. To do this you breathe out slowly into a small machine for six seconds (see photos on the previous page). You can also see videos of this on 

At the end of your first visit you will be put in one of two groups by a computer which sort of flips a coin. Either

- you will be in the group where asthma treatment depends on asthma symptoms only (this is what normally happens in the asthma clinic)

OR

- you will be put in the group where asthma treatment depends on asthma symptoms plus the levels of nitric oxide in your breath.

Whichever group you are in, your asthma treatment may stay the same or be changed slightly. But there will be no big changes to your asthma treatment.

We will check how you take your inhaler and chat with you and your parent/guardian about how to look after your asthma. We will also give you a little meter which records

when you take your inhaler. Here are some photos of inhalers with a meter. The meter would only go on your “preventer” inhaler, which you probably leave at home during the day. You don’t need to have a meter on your “reliever” inhaler that you take to school or when you go out.



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The second, third and fourth visits will last for 30-60 minutes.

We will ask you and your parent/guardian about your asthma. We will do your lung function and see how tall you are. We will look at the inhaler meter. We will measure your breathed out nitric oxide. Your asthma treatment may stay the same or may change slightly.

The last visit will last for up to 60 minutes. This will be just like the second, third and fourth visits plus some questions about how asthma affects you. We will also weigh you. Your hospital asthma doctor will see you in clinic three to six months after the last study visit.

There are no blood tests at all.

There are other parts to the study which you don’t have to do. These other parts would take another 30 minutes at the

first visit and 20 minutes at the second visit. If you want to take part in the main study but not in these parts, please tell us. If you want you can “pick and mix” and do some of the other parts below, but not all of them. The other parts are:

- Another lung function test after you have used your blue inhaler.
- Some children with asthma are allergic to things like dust, cat and egg. We call these things allergens. One part of the study is to have a test for allergic reaction. In this test we will put drops of water which have a bit of these allergens in them on your arm. We will then very gently scratch the skin under the drop. You will get a bit itchy for about 20 minutes.
- To collect some spit from your mouth. We would collect this in a small container. We will test the spit for genes that are related to asthma and allergies.
- To collect some coughed-up spit from your lungs. To cough up spit from your lungs we would ask you to breathe in a salty mist for 5 minutes. We will ask you to take your blue inhaler before this to stop you wheezing. We would collect any coughed up spit in a small container. We will test this spit for cells related to asthma and for any bugs.
- To find out how you are getting on in the future by collecting information from the records that are kept about you by your doctor and the hospital.

This website shows you how it is all done 

You can take part in the main RAACENO study without taking part in these other bits of the study.

How long will the study last?

The whole study will last for 3 years. Each person who takes part in the study will be in the study for 1 year. During the year, there will be five study visits, each lasting about 30 minutes.

What do I get from taking part?

You will get regular asthma assessments. We do not know if adding the breathing test that measures breathed out nitric oxide levels will reduce asthma attacks until the end of the study. At the end of the study, we will write and tell you the results of the study.

What might go wrong?

The allergy test will give you an itch. The coughing up spit test may make your cough. The salty mist will taste salty and you can have a drink afterwards to take away the taste.

Will everything be kept private?

Yes.

Who is leading the study?

The study is being led by a hospital asthma doctor in Aberdeen called Dr Steve Turner – this is a photo of him. He is helped by hospital doctors from across the country. Your doctor is also taking part in the study.



You can see pictures of some of the other doctors and nurses who are taking part in the study on our website:



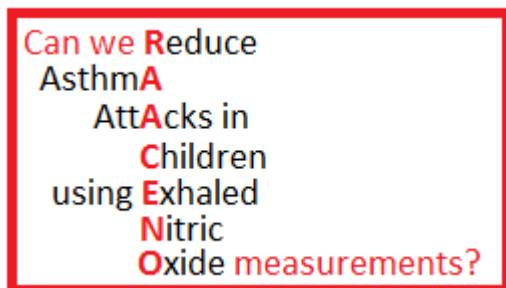
What do I do now?

If you are interested in taking part please let your parent/guardian know.

Thank you very much for taking the time to read this information and to consider taking part in this study.

12-15 PIL - hospital

Can we Reduce Asthma Attacks in Children using Exhaled Nitric Oxide measurements? (RAACENO)



We would like to invite you to take part in a research study which will see if taking a breathing test every three months can help prevent asthma attacks. Take your time to decide. You should know why the study is being done and what it will mean for you. Please take time to read this information leaflet and to talk with family and friends if you want. Ask us if there is anything that is not clear or if you would like to know more.

Thank you for reading this.

What is the purpose of the research study and why is it being done?

We all have a gas called nitric oxide in the air we breathe out. People of all ages with asthma have more nitric oxide in their breath than people without asthma. Nitric oxide levels go up before and during an asthma attack and come back down after an attack. The reason for the link between nitric oxide and asthma is that the same part of the body's immune system which causes allergy and asthma (cells called eosinophils) also produces nitric oxide.

Usually at an asthma check-up the doctor or nurse asks you about how your asthma has been and any coughing or wheezing, and how often you use your blue inhaler. The doctor or nurse uses this information to help decide whether your asthma inhalers and any other medicines that you take should stay the same or be changed.

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In this study, one group of children who take part will have their asthma managed in the normal way (the doctor or nurse will ask about their asthma and how often they use their inhaler), and one group will be managed in the normal way plus have their exhaled nitric oxide results used. We will collect information about any asthma attacks from all the children who take part. We will then compare whether one group has fewer asthma attacks than the other group.

To do this study properly we need 502 children with asthma from up and down the UK.

Why have I been chosen?


Your hospital doctor has told us that you have asthma and have had an asthma attack in the last year.

Do I have to take part?

No, it is up to you to decide whether or not to take part. If you choose to take part, you can stop at any time and you don't need to say why.

What happens if I take part?

If you take part in the study we would like you to come to your local hospital every three months for a year. These visits will replace the asthma clinic appointments you have with your hospital asthma doctor. Your asthma hospital doctor will still be available to speak to you if you want.

The first visit will last up to 90 minutes. During this time we will ask you about your asthma, and also ask you to fill in a questionnaire about your asthma symptoms. We will measure your height, weight and lung function (just like a regular asthma clinic). We will also measure your exhaled nitric oxide by asking you to breathe out slowly into a small machine for six to ten seconds (see photos on the next page). You can also see a video of these tests on 

Here is a photo of a young girl blowing into the nitric oxide machine...



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action plan (or give you one if you don't have one already). We will also give you a device which records when you take your asthma inhaler. This allows us to see whether any asthma symptoms might be due to forgetting to take the inhaler. Here are some photos of inhalers with these with their logging devices. The devices would only go on your "preventer" inhaler, which you probably leave at home during the day. You don't need to have a device on your "reliever" inhaler that you take to school or when you go out.



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The second, third and fourth visits will last for 30-60 minutes and will take place about three, six and nine months after the first visit. We will ask you about your cough, wheeze and need for your blue inhaler and whether you have had an asthma attack since the last visit (just like a normal asthma clinic). We will measure your lung function and height again (just like a normal asthma clinic). We will download the information on your inhaler device. We will measure exhaled nitric oxide. You will only know the exhaled nitric oxide results if you are in the group where symptoms and nitric oxide levels are being used to guide asthma treatment. Your asthma treatment may stay the same or may change slightly. We will write to your GP and your asthma hospital doctor with all the details of the

visit, including any changes to treatment (just like after a normal asthma clinic).

The last visit will last for up to 60 minutes. This will be just like the second, third and fourth visits plus some questions about how asthma affects you. We will also weigh you. Just like before, we will write to your GP and your asthma hospital doctor saying how you are doing and what treatment you are on. Your hospital asthma doctor will see you in clinic three to six months after the last study visit. If you are in the group where nitric oxide is not used to guide treatment we will write to you after the last visit with your nitric oxide results.

The table below summarises what would happen at each appointment.

	First visit	Second, third and fourth visits	Last visit
Exhaled nitric oxide	✓	✓	✓
Questionnaire	✓	✓	✓
Lung function and height	✓	✓	✓
Weight	✓		✓
Inhaler log data		✓	✓

After the last visit, we will also collect information about asthma attacks using data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions.

There are no blood tests at all.

There are also optional parts to the study which will take another 30 minutes at the first visit and 20 minutes at the second visit. You can take part in the main RAACENO study without taking part in any of these optional parts of the study. You also have the choice to take part in some or all of the optional parts. Young people in both the study groups can do the optional parts.

The information we get from these optional parts of the study will help us understand how the study is affecting the allergic cells in the lungs and also whether nitric oxide may be better at guiding asthma treatment in certain individuals, for example those with allergy.

The optional parts are:


An additional lung function test. At the first visit only, we would ask you to do another lung function test after you have used your inhaler.

Skin allergy testing. Some people with asthma are allergic to things like dust, cat and egg. We call these things allergens. At the first visit we would do skin allergy testing. This involves putting drops of water containing things that you might be allergic to (e.g. dust, cat, egg and pollen) on the inside of your forearm and then scratching the skin under the drop. You will get some itching (a bit like a midge-bite) which will last for between 15 and 30 minutes. If you don't do this at the first visit, but then change your mind, you can ask to do this at one of the other study visits.

Collect some mouth spit. At the first visit we would ask you to rinse your mouth with some tap water and spit this into a container. We would then test the sample for genes that are related to asthma and allergy. If you don't do this at the first visit, but then change your mind, you can ask to do this at one of the other study visits.

Collect some coughed-up spit. At the first and second visit we will also ask you to cough up some spit from your lungs. To help you cough we will ask you to breathe in a salty mist for 5 minutes. This will help you cough. This might make you wheeze so we will ask you to take your blue inhaler and test your lung function before you inhale the salty mist. Sometimes people need a second 5 minutes of breathing in the salty mist before spit can be coughed up. We will look at the cells in the coughed up spit to see how many airway inflammation cells are present (the cells called eosinophils). We will also test this sample for any bugs.

Remember, you can take part in the main study without taking part in these optional parts of the study.

You can a video of these tests at 

If you are in the group who know their exhaled nitric oxide results we would like to know what you think of the study. There is a separate information sheet to explain this part of this study which we will give you at the fourth visit. Please let us know if you would like to know more about this other completely optional part of the study.

Long term follow-up in RAACENO

We plan to try and obtain funding to follow up the children who take part in the RAACENO study beyond the 12 month follow-up period. We would like to do this to see how health changes over time and impacts on their life. To do this, we would use data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions. **There would be no additional visits or questionnaires involved in this longer-term follow-up.**

What are the possible benefits of taking part?

You will get regular asthma assessments. We do not know if adding the breathing test that measures exhaled nitric oxide levels will reduce asthma attacks until the end of the study. At the end of the study, we will write and tell you the results of the study.

What are the possible risks of taking part?

The optional allergy testing may cause your to have an itchy arm for a short time. The optional coughing up spit test may make you cough and possibly also wheeze but we will only do this test after you have had your blue inhaler and checked your lung function. The salty mist that we will ask you to breathe in as part of this test will taste salty and you can have a drink afterwards to take away the taste.

Will participation in the study be kept private?


Yes, all the information will be kept private. Only certain members of the research team will have access to your information.

How long will the study last?

The whole study will last for 3 years. Each person who takes part in the study will be in the study for 1 year. During the year, there will be five study visits, each lasting about 30 minutes (slightly longer for people who also take part in the optional parts of the study).

Who is leading the study?

The study is being led by a hospital asthma doctor in Aberdeen called Dr Steve Turner. He is helped by asthma doctors from across the country.

Your doctor is also taking part in the study. You can see pictures of some of the other doctors and nurses who are taking part in the study on our website: 



Who has reviewed this study?

The study has been reviewed by the North of Scotland Research Ethics Committee and also specialists in the field.

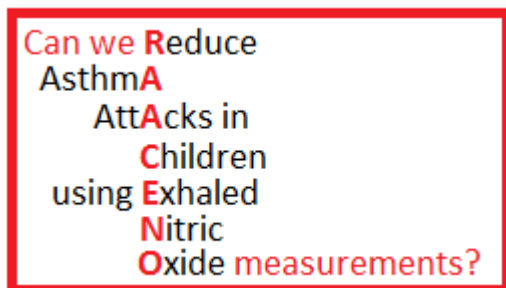
What do I do now?

If you are interested in taking part please let your parent/guardian know.

Thank you very much for taking the time to read and to consider taking part in this study.

PIL for children who turn 16

Can we Reduce Asthma Attacks in Children using Exhaled Nitric Oxide measurements? (RAACENO)



We would like to invite you to continue to participate in a research study which will test whether a breathing test every three month can help prevent asthma attacks. 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 this information carefully and to 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 you wish to continue to take part.

Thank you for reading this.

What is the purpose of the research?

We all have a gas called nitric oxide in the air we breathe out. People of all ages with asthma have more nitric oxide in their breath than people without asthma. Nitric oxide levels go up before and during an asthma attack and come back down after an attack. The reason for the link between nitric oxide and asthma is that the same part of the body's immune system which causes allergy and asthma (cells called eosinophils) also produces nitric oxide.

Usually at an asthma check-up the doctor or nurse asks how your asthma has been, about any coughing or wheezing, and how often you use your blue inhaler. The doctor or nurse uses this information to help decide whether the asthma inhalers and any other medicines that you take should stay the same or be changed.

We are doing this study to see whether measuring the levels of exhaled (breathed out) nitric oxide at an asthma check-up would help a doctor or nurse to make these decisions about asthma treatment.

In this study, one group of children who take part will have their asthma managed in the normal way (the doctor or nurse will ask about their asthma and how often they use their inhaler), and one group will be managed in the normal way plus have their exhaled nitric oxide results used. We will collect information about any asthma attacks from all the children who take part. We will then compare whether one group has fewer asthma attacks than the other group.

To do this study properly we need 502 children with asthma from up and down the UK to take part.

Why have you been chosen?

You joined the study when you were 15 years old because you had asthma, you had had an asthma attack in the last year and were aged between ages 6 and 15 (where we know the nitric oxide test can be done). Now that you are 16 we are asking if you want to continue taking part in the study or not.

Do we have to take part?

No, it is up to you to decide whether or not you continue to take part. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

What happens if I participate?

If you continue to take part in the study, we would like you to come to your local hospital every three months for a year. These visits will replace the asthma clinic appointments you usually have. Your hospital asthma doctor will still be available to speak to you if you want. You will have already had your first visit, and may also have had your second, third and fourth visits.

The first visit will last up to 90 minutes. During this time, we will ask you about your asthma. We will also ask you to fill in a questionnaire which tells us about your asthma and recent symptoms. We will measure your height, weight and lung function (just like a regular asthma clinic). We will also measure your breathed out nitric oxide by asking you to breathe out slowly into a small machine for six to ten seconds (see photos on the next page). You can also see videos of these tests being done at

Here is a photo of a young girl blowing into the nitric oxide machine....



....and here is a photo of the nitric oxide machine



NIOX VERO®

At the end of your first visit, you will be randomly placed in a group. Either you will be in the group where asthma treatment depends on asthma symptoms alone OR they will be placed in a group where asthma treatment depends on asthma symptoms plus levels of exhaled nitric oxide.

Regardless of which group you are in, your asthma treatment may stay the same or be changed slightly. There will be no big changes to your asthma treatment. Just like a normal asthma clinic, at the end of the visit you will get a prescription to go to the hospital pharmacy for any changes to your medication. We will write to your GP and your hospital asthma doctor with all the details of the visit, including any changes to treatment.

We will give you a diary to make a note of any asthma attacks you have between visits. We will check your inhaler technique and review your asthma action plan (or give you one if you do not have one already). We will also give you a device which records when your asthma inhaler is taken. This allows us to see whether any asthma symptoms might be due to forgetting to take the inhaler. On the next page are some photos of inhalers with their logging devices. The logging device will only go on your “preventer” inhaler. You will not have a logging device on your “reliever” inhaler.



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SmartTurboTM
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SmartDiskTM
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The second, third and fourth visits will last for 30-60 minutes and will take place about three, six and nine months after the first visit.

We will ask you to fill in a questionnaire about your recent asthma symptoms and ask you whether you have had an attack since the last visit and if so what happened. We will measure lung function and height (just like a normal asthma clinic). We will download the information on your inhaler device. We will also measure exhaled nitric oxide. We will only tell you the results of the nitric oxide results if you are in the group where symptoms and nitric oxide are being used to guide asthma treatment.

At the end of the visit, your asthma treatment may stay the same or may change. We will write to your GP and hospital asthma doctor with all the details of the visit, including any changes to treatment, just like after a normal asthma clinic.

The last visit will last for up to 60 minutes and will take place about twelve months after the first visit. This will be like the second, third and fourth visits. We will measure lung function and height. We will download the information from your inhaler device and we will measure exhaled nitric oxide. We will also weigh you and ask you to complete a questionnaire which tells us about your asthma and recent symptoms, and how asthma affects your quality of life. We

will ask you whether you have had an attack since the last visit and if so what happened.

At the end of the visit, your asthma treatment may stay the same or may change. Just like before, we will write to your GP and hospital asthma doctor with all the details of the visit, including any changes to treatment. Your hospital asthma doctor will see you in clinic three to six months after the final study visit. If you are in the group where nitric oxide is not used to guide treatment we will write to you after the last visit with the nitric oxide results.

The table below summarises what would happen at each visit.

	First visit	Second, third and fourth visits	Last visit
Exhaled nitric oxide	✓	✓	✓
Questionnaire	✓	✓	✓
Lung function and height	✓	✓	✓
Weight	✓		✓
Inhaler log data		✓	✓

There are no blood tests at all.

After the last visit, we will also collect information about asthma attacks using data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions.

There are also optional parts to the study which will take another 30 minutes at the first visit and 20 minutes at the second visit. You can take part in the main RAACENO study without taking part in any of these optional parts of the study. You can take part in some or all of the optional parts.


The information we get from these optional parts of the study will help us understand how the trial is affecting the allergic cells in the

lungs and also whether nitric oxide may be better at guiding asthma treatment in certain individuals, for example those with allergy.

The optional parts are:

An additional lung function test. This would be done at the first visit only. This will test your response to your inhaler. If you want to participate in this part of the study, we will ask you to not take your reliever inhaler (usually blue) for 4 hours before the visit. At the visit, we will ask you to take your inhaler and then measure your lung function again.

Skin allergy testing. This would be done at the first visit, although if you did not do this test on the first visit and wanted to do it at a subsequent visit, you can do. Some children with asthma are allergic to things like dust, cat and egg. We call these things allergens. We will put some drops of water containing things that people might be allergic to (e.g. dust, cat, egg and pollen) on the inside of your forearm and gently scratch the skin under the drop. You will get some itching, rather like a midge-bite, which will last for between 15 and 30 minutes. You can see a video of the skin allergy testing on



Collecting some mouth spit for DNA testing. This would be done at the first visit, although if you did not do this on the first visit and wanted to do it at a subsequent visit, you can do. We would ask you to rinse your mouth with 10mls of tap water for about 20 seconds and to spit the water into a container. This sample will be frozen and sent to Aberdeen to be stored. We hope to get funding in the future to test this sample for genes that are associated with asthma and allergy outcomes.

Collecting some coughed-up spit to measure airway inflammation. This would be done at the first and the second visit. We would ask you to cough up some spit from your lungs. To help you cough we

will ask you to breathe in a salty mist for 5 minutes. This will make you cough and possibly wheeze so we will ask you to take your blue inhaler 15 minutes and test your lung function beforehand. Some children will require a second 5 minutes of breathing in the salty mist. The coughed up spit will be sent to a local NHS or University laboratory where they will count how many airway inflammation cells are present (the cells called eosinophils). The sample will be sent to Aberdeen to be stored in a freezer. We hope to get funding in the future to test this sample for any bugs that may be present.

Remember, you can take part in the main study without taking part in any of these optional parts.

At the last visit we would like to understand what some children think of the exhaled nitric oxide measurements. We will invite twenty children to share their thoughts with us. Please let us know if you would like to know more about this other completely optional part of the study. There is a separate information sheet to explain this part of this study which we can give to you at the fourth study visit.

Long term follow-up in RAACENO

We plan to try and obtain funding to follow up the children who take part in the RAACENO study beyond the 12-month follow-up period. We would like to do this to see how health changes over time and impacts on their life. To do this, we would use data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions. **There would be no additional visits or questionnaires involved in this longer-term follow-up.**

We could get routinely collected NHS data from hospital and GP medical records – this would be done by someone who has permission to look at medical records. Alternatively, we could get routinely collected data from NHS and other government central

data registers. Across the UK, there is the Office for National Statistics. In addition, in England there is NHS Digital, in Scotland the Information Services Division, and in Wales the NHS Wales Informatics Service. To get data from central data registers like these, we would securely send them some information about you (e.g. date of birth, name, and address). They would then match this information to their records and securely send us information using your study number (and not your date of birth, name or address). As with all information collected within the main RAACENO study, this information would be held confidentially and stored securely.

You can take part in the main RAACENO study without agreeing to take part in this longer-term follow-up.

What are the possible benefits of taking part?

All children will get regular asthma assessments. Asthma treatment is currently only guided by symptoms, and so children in the group where asthma treatment is guided by symptoms will continue to get current best asthma management. We are testing the possibility that using both the breathing test that measures exhaled nitric oxide **plus** symptoms to guide asthma treatment will reduce a child's risk for an asthma attack, but we do not know if this will work until the end of the study. At the end of the study, we will write and tell you the results of the study.

What are the possible risks of taking part?

The optional allergy testing will cause you to have an itchy arm for a short time. The optional coughing up spit test may make you cough and possibly also wheeze, but we will only do this test after you have had your blue inhaler and had your lung function checked.

Will participation in the study be kept confidential?

Yes, all the information will be kept confidential. We will follow ethical and legal practice and all information about you child will be handled in confidence. All information which is collected about you

during the research will be kept strictly confidential and will be held securely in accordance with the Data Protection Act. Data for all participants in the study, including those who withdraw, will be kept securely for a minimum of 10 years. Only certain members of the research team will have access to your information.

The statistical analysis of the study is being conducted at the University of Aberdeen, and to maintain confidentiality, the statistical team will only analyse anonymous data. (Anonymous data does not include names or addresses, and it is not possible to identify individual participants from anonymous data). Any reports or publications arising from the study will contain anonymous data so that you cannot be recognised from it.

Other researchers may wish to access anonymous data from this study in the future. If this is the case, the Chief Investigator will ensure that the other researchers comply with legal, data protection and ethical guidelines.

If you remain part of the study, the data collected for the study, together with any relevant medical records, may be looked at by authorised persons from the University of Aberdeen and the Research and Development Department of your local NHS Organisation to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant.

Expenses and payments

You can receive travel expenses to attend your local study centre. Please ask your research nurse for information about how to claim travel expenses.

What will happen to the results of the research study?

We will share the results of the study with doctors across the UK who look after children with asthma. The results will be published in

scientific journals and presented at scientific meetings. We will also send you a summary of the results.

Who is organising and funding the research?

This study is being organised by asthma doctors at the University of Aberdeen and elsewhere in the UK. The research is being funded by the Efficacy and Mechanism Evaluation (EME) Programme, a Medical Research Council and NHS National Institute for Health Research partnership.

The study is being co-ordinated by the Centre for Healthcare Randomised Trials (CHaRT), a registered clinical trials unit at the University of Aberdeen.

Who has reviewed this study?

The study has been reviewed by the North of Scotland Research Ethics Committee and also specialists in the field.

What if I want to complain?

If you believe that you have been harmed in any way by taking part in this study, you have the right to pursue a complaint and seek compensation through the research sponsors of the study - the University of Aberdeen and NHS Grampian. Contact details for both research sponsors are available through the research team.

As a patient of the NHS if you are harmed due to someone's negligence, then you may have grounds for a legal action, but you may have to pay for it. Regardless of this, if you wish to complain, or have any concerns about any aspect of the way you have been approached or treated during the course of this study, the normal National Health Service complaints mechanisms would be available to you.

If you have a concern about any aspect of this study, you should ask to speak to the study doctors who will answer your questions

(contact details are at the end of this information leaflet). If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints mechanisms (or Private Institution). Contact details can be obtained from your local hospital.

What do I do now?

If you are interested in continuing to take part in this study or if you require any further information, please contact us. Our contact details are below.

{{insert local contact details}}

Thank you very much for taking the time to read and consider your participation in this study.

Supplementary information about your personal data and the General Data Protection Regulation

Your information

The University of Aberdeen and NHS Grampian is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. The University of Aberdeen and NHS Grampian will keep identifiable information about you for 10 years after the study has finished.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible.

You can find out more about how we use your information at www.abdn.ac.uk/privacy.

[NHS/other site] will collect information from you for this research study in accordance with our instructions.

[NHS/other site] will use your name and contact details to contact you about the research study, and make sure that relevant information about the study is recorded for your care, and to oversee the quality of the study. Individuals from the

University of Aberdeen and NHS Grampian and regulatory organisations may look at your medical and research records to check the accuracy of the research study. [NHS/other site] will pass these details to the University of Aberdeen and NHS Grampian along with the information collected from you. The only people in the University of Aberdeen and NHS Grampian who will have access to information that identifies you will be people who need to contact you to audit the data collection process. The people who analyse the information will not be able to identify you and will not be able to find out your name, [NHS number] or contact details.

[NHS/ other site] will keep identifiable information about you from this study for 10 years after the study has finished.

Short PIL – primary care

Can we Reduce
Asthma
Attacks in
Children
using Exhaled
Nitric
Oxide measurements?

Are you interested in research into children's asthma treatment?

If yes, we would like to tell you about the RAACENO study because we think your child might be eligible to take part, but they don't have to take part if they don't want to.

What is the purpose of the RAACENO study?

We all have a gas called nitric oxide in the air we breathe out. People of all ages with asthma have more nitric oxide in their breath than people without asthma. Nitric oxide levels go up before and during an asthma attack and come back down after an attack. We are doing this study to see whether measuring the levels of exhaled (breathed out) nitric oxide at an asthma check-up would help your doctor to make decisions about asthma treatment.

What's special about the RAACENO study?

- We want to determine whether basing treatment on the levels of exhaled (breathed out) nitric oxide will help reduce the number of asthma attacks children have.
- The study is funded by the NHS through one of its research programmes.
- To do this study properly we need 502 children with asthma from up and down the UK to take part.
- Each child who takes part will be in the study for one year.

There will be two groups of children in the RAACENO study. Children in both groups will be invited come to their local GP practice every three months for a year. These visits will replace their usual asthma appointments.

One group will have their asthma treatment managed in the normal way – based on their asthma symptoms

One group will have their asthma treatment managed using information about asthma symptoms and exhaled nitric oxide.

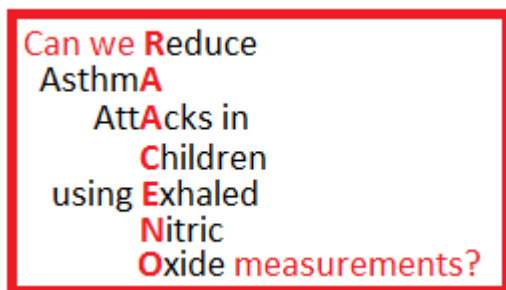
For more information about the study, or to talk to someone about taking part, please contact your local study team or the main study office on 0 [REDACTED]

You can also find out more information and watch some videos about the research on our website: [REDACTED]

Your local study team is:

Parent PIL – primary care

Can we Reduce Asthma Attacks in Children using Exhaled Nitric Oxide measurements? (RAACENO)



We would like to invite your child to participate in a research study which will test whether a breathing test every three months can help prevent asthma attacks. 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 this information carefully and to 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 you wish your child to take part.

Thank you for reading this.

What is the purpose of the research?

We all have a gas called nitric oxide in the air we breathe out. People of all ages with asthma have more nitric oxide in their breath than people without asthma. Nitric oxide levels go up before and during an asthma attack and come back down after an attack. The reason for the link between nitric oxide and asthma is that the same part of the body's immune system which causes allergy and asthma (cells called eosinophils) also produces nitric oxide.

Usually at an asthma check-up the doctor or nurse asks how your child's asthma has been, about any coughing or wheezing, and how often they use their blue inhaler. The doctor or nurse uses this information to help decide whether the asthma inhalers and any other medicines that your child takes should stay the same or be changed.

We are doing this study to see whether measuring the levels of exhaled (breathed out) nitric oxide at an asthma check-up would help a doctor or nurse to make these decisions about children's asthma treatment.

In this study, one group of children who take part will have their asthma managed in the normal way (the doctor or nurse will ask about their asthma and how often they use their inhaler), and one group will be managed in the normal way plus have their exhaled nitric oxide results used. We will collect information about any asthma attacks from all the children who take part. We will then compare whether one group has fewer asthma attacks than the other group.

To do this study properly we need 502 children with asthma from up and down the UK.

Why has my child been chosen?

We have approached you about this study because your family doctor thinks that the study may be right for your child. This is because your child has asthma, has had an asthma attack in the last year so may be at risk for another attack, and is between ages 6 and 15 (where we know the nitric oxide test can be done).

Do we have to take part?

No, it is up to you to decide whether or not your child can take part. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care your child receives.

What happens if my child participates?

If you take part in the study we would like you and your child to come to your local general practice every three months for a year.

The first visit will last up to 90 minutes. During this time we will ask you and your child about your child's asthma. We will also ask you to fill in a questionnaire which tells us about your child's asthma and their recent symptoms. We will measure your child's height, weight and lung function (just like a regular

asthma clinic). We will also measure your child's breathed out nitric oxide by asking them to breathe out slowly into a small machine for six to ten seconds (see photos on below). You can also see videos of these tests being done at

Here is a photo of a young girl blowing into the nitric oxide machine....



....and here is a photo of the nitric oxide machine



NIOX VERO®

At the end of your first visit your child will be randomly placed in a group. Either they will be in the group where asthma treatment depends on asthma symptoms alone OR they will be placed in a group where asthma treatment depends on asthma symptoms plus levels of exhaled nitric oxide.

Regardless of which group your child is in, their asthma treatment may stay the same or be changed slightly. There will be no big changes to your child's asthma treatment. Just like a normal asthma check up, at the end of the visit you will get a prescription to go to your chemist for any changes to your child's medication. We will write to your child's GP with all the details of the visit, including any changes to treatment.

We will give you a diary to make a note of any asthma attacks your child has between visits. We will check your child's inhaler technique and review their asthma action plan (or give them one if they do not have one already). We will also give you a device which records when their asthma inhaler is taken. This allows us to see whether any asthma symptoms might be due to forgetting to take the inhaler. Here are some photos of inhalers with their logging devices. The logging device will only go on your child's "preventer" inhaler. They will not have a logging device on their "reliever" inhaler.



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SmartDiskTM
©Adherium (NZ) Ltd 2013

The second, third and fourth visits will last for 30-60 minutes and will take place about three, six and nine months after the first visit. We will ask you to fill in a questionnaire about your child's recent asthma symptoms, and ask you whether they have had an attack since the last visit, and if so what happened. We will measure lung function and height (just like at a normal asthma clinic). We will download the information on your child's inhaler device. We will also measure exhaled nitric oxide. We will only tell you the results of the nitric oxide measurements if you are in the group where symptoms and nitric oxide are being used to guide asthma treatment.

At the end of the visit, your child's asthma treatment may stay the same or may change. We will write to your child's GP with all the details of the visit, including any changes to treatment.

The last visit will last for up to 60 minutes and will take place about twelve months after the first visit. This will be almost the same as the second, third and fourth visits. We will measure lung function and height. We will download the information on your child's inhaler device and measure exhaled nitric oxide. We will also weigh your child and ask you to complete a questionnaire which tells us about your child's asthma and their recent symptoms, and how asthma affects their quality of life. We will ask you whether they have had an attack since the last visit and if so what happened.

At the end of the visit, your child's asthma treatment may stay the same or may change. Just like before, we will write to your child's GP with all the details of the visit, including any changes to treatment. If your child is in the group where nitric oxide is not used to guide treatment we will write to you after the last visit with the nitric oxide results.

The table below summarises what would happen at each visit.

	First visit	Second, third and fourth visits	Last visit
Exhaled nitric oxide	✓	✓	✓
Questionnaire	✓	✓	✓
Lung function and height	✓	✓	✓
Weight	✓		✓
Inhaler log data		✓	✓

In order verify asthma attacks reported the clinic appointments we would use data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions

There are no blood tests at all.

Long term follow-up in RAACENO

We plan to try and obtain funding to follow up the children who take part in the RAACENO study beyond the 12 month follow-up period. We would like to do this to see how health changes over time and impacts on their life. To do this, we would use data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions. **There would be no additional visits or questionnaires involved in this longer-term follow-up.**

We could get routinely collected NHS data from hospital and GP medical records – this would be done by someone who has permission to look at medical records. Alternatively, we could get routinely collected data from NHS and other government central data registers. Across the UK, there is the Office for National Statistics. In addition, in England there is NHS Digital, in Scotland the Information Services Division, and in Wales the NHS Wales Informatics Service. To get data from central data registers like these, we would securely send them some information about your child (e.g. date of birth, name, and address). They would then match this information to their records and securely send us information using your child's study number (and not their date of birth, name or address). As with all information collected within the main RAACENO study, this information would be held confidentially and stored securely.

Your child can take part in the main RAACENO study without agreeing to take part in this longer term follow-up.

What are the possible benefits of taking part?

All children will get regular asthma assessments. Asthma treatment is currently only guided by symptoms, and so children in the group where asthma treatment is guided by symptoms will continue to get current best asthma management. We are testing the possibility that using both the breathing test that measures exhaled nitric oxide plus symptoms to guide asthma treatment will reduce a child's risk for an asthma attack, but we do not know if this will work until the end of the study. At the end of the study, we will write and tell you the results of the study.

What are the possible risks of taking part?

There are no risks from taking part.

Will participation in the study be kept confidential?

Yes, all the information will be kept confidential. We will follow ethical and legal practice and all information about you will be handled in confidence. All information which is collected about you during the research will be kept strictly confidential and will be held securely in accordance with the Data Protection Act. Data for all participants in the study, including those who withdraw, will be kept securely for a minimum of 10 years. Only certain members of the research team will have access to your information.

The statistical analysis of the study is being conducted at the University of Aberdeen, and to maintain confidentiality, the

statistical team will only analyse anonymous data. (Anonymous data does not include names or addresses, and it is not possible to identify individual participants from anonymous data). Any reports or publications arising from the study will contain anonymous data so that you and your child cannot be recognised from it.

Other researchers may wish to access anonymous data from this study in the future. If this is the case, the Chief Investigator will ensure that the other researchers comply with legal, data protection and ethical guidelines.

If your child joins the study, the data collected for the study, together with any relevant medical records, may be looked at by authorised persons from the University of Aberdeen and the Research and Development Department of your local NHS Organisation to check that the study is being carried out correctly. All will have a duty of confidentiality to you and your child as a research participant.

Expenses and payments

You can receive travel expenses to attend your local study centre. Please ask your research nurse for information about how to claim travel expenses.

What will happen to the results of the research study?

We will share the results of the study with doctors across the UK who look after children with asthma. The results will be published in scientific journals and presented at scientific meetings. We will also send you a summary of the results.

Who is organising and funding the research?

This study is being organised by asthma doctors at the University of Aberdeen and elsewhere in the UK. The research is being funded by the Efficacy and Mechanism Evaluation (EME) Programme, a Medical Research Council and NHS National Institute for Health Research partnership.

The study is being co-ordinated by the Centre for Healthcare Randomised Trials (CHaRT), a registered clinical trials unit at the University of Aberdeen.

Who has reviewed this study?

The study has been reviewed by the North of Scotland Research Ethics Committee and also specialists in the field.

What if I want to complain?

If you believe that you have been harmed in any way by taking part in this study, you have the right to pursue a complaint and seek compensation through the research sponsors of the study - the University of Aberdeen and NHS Grampian. Contact details for both research sponsors are available through the research team.

As a patient of the NHS if you are harmed due to someone's negligence, then you may have grounds for a legal action, but you may have to pay for it. Regardless of this, if you wish to complain, or have any concerns about any aspect of the way you have been approached or treated during the course of this study, the normal National Health Service complaints mechanisms would be available to you.

If you have a concern about any aspect of this study you should ask to speak to the study doctors who will answer your questions (contact details are at the end of this information leaflet). If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints mechanisms (or Private Institution). Contact details can be obtained from your local hospital.

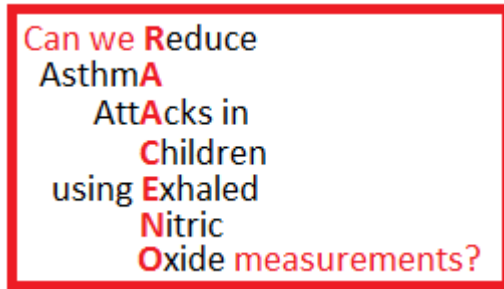
What do I do now?

If you and your child are interested in taking part in this study or if you require any further information, please contact us. Our contact details are below.

{Insert local contact details}

Thank you very much for taking the time to read and consider your participation in this study.

6-11 PIL – primary care



Can we Reduce Asthma Attacks in Children using Exhaled Nitric Oxide measurements? (RAACENO)

We would like to invite you to take part in a study which will see if taking a breathing test every three months can help prevent asthma attacks. Please talk with family and friends about the study.

Thank you for reading this.

Why is this study being done?

Usually at an asthma check up the doctor or nurse will measure your lung function and ask how your asthma has been. The doctor or nurse uses this information to help decide whether your asthma inhalers and any other medicines you take should stay the same, or be changed. The inhalers and any other asthma medicines that you take are designed to help your breathing and reduce the number of asthma attacks that you have.



This picture shows a boy having his lung function measured. You might have seen a similar machine, or one that looks a bit different.

We are doing this study to see whether adding a breathing test to usual asthma check ups at the doctors makes children have less asthma attacks. The test uses a machine to measure a gas that we all have in our breath called nitric oxide.

Here is a photo of the machine that measures nitric oxide levels



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Here is a photo of a young girl having a breathing test. She is blowing into the machine that measures nitric oxide levels in her breath



Boys and girls with asthma have more nitric oxide than children without asthma. Levels of nitric oxide in our breath go up and down. Measuring the nitric oxide levels might help doctors decide whether or not a child's asthma inhalers should be changed to help their breathing and try and stop them having an asthma attack.

Why have I been chosen?


Your doctor has told us that you have asthma and have had an asthma attack in the last year.

Do I have to take part?

No. If you choose to take part, you can stop at any time and you don't need to say why.

What would I have to do if I take part in the study?

You would come to the doctors every three months for a year to see a special nurse.

The first visit will last up to 90 minutes. We'll ask some questions about your asthma. We will see how tall and heavy you are and do a breathing test (just like a regular asthma clinic). We will measure the nitric oxide in your breath. To do this you to breathe out slowly into a small machine for six seconds (see photos on the previous page). You can also see videos of this on 

At the end of your first visit you will be put in one of two groups by a computer which sort of flips a coin. Either

- you will be in the group where asthma treatment depends on asthma symptoms only (this is what normally happens in the asthma clinic)
- OR
- you will be put in the group where asthma treatment depends on asthma symptoms plus the levels of nitric oxide in your breath.

Whichever group you are in, your asthma treatment may stay the same or be changed slightly. But there will be no big changes to your asthma treatment.

We will check how you take your inhaler and chat with you and your parent/guardian about how to look after your asthma. We will also give you a little meter which records when you take your inhaler. Here are some photos of inhalers with a meter. The meter will only go on your “preventer”

inhaler, which you probably leave at home during the day. You don't need to have a meter on your "reliever" inhaler that you take to school or when you go out.



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The second, third and fourth visits will last for 30-60 minutes.

We will ask you and your parent/guardian about your asthma. We will do your lung function and see how tall you are. We will look at the inhaler meter. We will measure your breathed out nitric oxide. Your asthma treatment may stay the same or may change slightly.

The last visit will last for up to 60 minutes. This will be just like the second, third and fourth visits plus some questions about how asthma affects you. We will also weigh you. Your own doctor will see you again three to six months after the final study visit.

There are no blood tests at all.

There is another part to the study which you don't have to do, even if you want to take part in the main study. If you want to take part in the main study but not in this part, please tell us. For this other part, we would like to find out how you are getting on in the future by collecting information from the records that are kept about you by your doctor and the hospital.

How long will the study last?

The whole study will last for 3 years. Each person who takes part in the study will be in the study for 1 year. During the year, there will be five study visits, each lasting about 30 minutes.

What do I get from taking part?

You will get regular asthma assessments. We do not know if adding the breathing test that measures breathed out nitric oxide levels will reduce asthma attacks until the end of the study. At the end of the study, we will write and tell you the results of the study.

Will everything be kept private?

Yes.

Who is leading the study?

The study is being led by a hospital asthma doctor in Aberdeen called Dr Steve Turner – this is a photo of him. He is helped by other doctors from across the country. Your doctor is also taking part in the study.



You can see pictures of some of the other doctors and nurses who are taking part in the study on our website: [REDACTED]

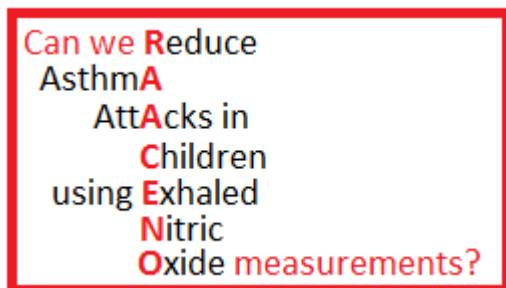
What do I do now?

If you are interested in taking part please let your parent/guardian know.

Thank you very much for taking the time to read this information and to consider taking part in this study.

12-15 PIL – primary care

Can we Reduce Asthma Attacks in Children using Exhaled Nitric Oxide measurements? (RAACENO)



We would like to invite you to take part in a research study which will see if taking a breathing test every three months can help prevent asthma attacks. Take your time to decide. You should know why the study is being done and what it will mean for you. Please take time to read this information leaflet and to talk with family and friends if you want. Ask us if there is anything that is not clear or if you would like to know more.

Thank you for reading this.

What is the purpose of the research study and why is it being done?

We all have a gas called nitric oxide in the air we breathe out. People of all ages with asthma have more nitric oxide in their breath than people without asthma. Nitric oxide levels go up before and during an asthma attack and come back down after an attack. The reason for the link between nitric oxide and asthma is that the same part of the body's immune system which causes allergy and asthma (cells called eosinophils) also produces nitric oxide.

Usually at an asthma check-up the doctor or nurse asks you about how your asthma has been and any coughing or wheezing, and how often you use your blue inhaler. The doctor or nurse uses this information to help decide whether your asthma inhalers and any other medicines that you take should stay the same or be changed.

We are doing this study to see whether measuring the levels of exhaled (breathed out) nitric oxide at an asthma check-up would help your doctor or nurse to make these decisions about asthma treatment.

In this study, one group of children who take part will have their asthma managed in the normal way (the doctor or nurse will ask about their asthma and how often they use their inhaler), and one group will be managed in the normal way plus have their exhaled nitric oxide results used. We will collect information about any asthma attacks from all the children who take part. We will then compare whether one group has fewer asthma attacks than the other group.

To do this study properly we need 502 children with asthma from up and down the UK.

Why have I been chosen?


Your doctor has told us that you have asthma and have had an asthma attack in the last year.

Do I have to take part?

No, it is up to you to decide whether or not to take part. If you chose to take part, you can stop at any time and you don't need to say why.

What happens if I take part?

If you take part in the study we would like you to come to the surgery every three months for a year. These visits will replace the asthma clinic appointments you normally have with the doctor.

The first visit will last up to 90 minutes. During this time we will ask you about your asthma, and also ask you to fill in a questionnaire about your asthma symptoms. We will measure your height, weight and lung function (just like a regular asthma clinic). We will also measure your exhaled nitric oxide by asking you to breathe out slowly into a small machine for six to ten seconds (see photos on the next page). You can also see a video of this on 

Here is a photo of a young girl blowing into the nitric oxide machine...



...and here is a photo of the nitric oxide machine



NIOX VERO®

At the end of your first visit you will be put in one of two groups by a computer which sort of flips a coin. Either

- you will be in the group where asthma treatment depends on asthma symptoms only
- OR
- you be put in the group where asthma treatment depends on asthma symptoms plus exhaled nitric oxide levels.

Whichever group you are in, your asthma treatment may stay the same or be changed slightly. There will be no big changes to your asthma treatment.

Just like a normal asthma clinic, at the end of the visit you will get a prescription to go to the chemist for any changes to your medication. We will also write to your doctor and tell them whether your treatment has been changed or not. We will give you a diary to make a note of any asthma attacks you have between visits. We will check your inhaler technique and look at your asthma action plan (or give you one if you don't

have one already). We will also give you a device which records when you take your asthma inhaler. This allows us to see whether any asthma symptoms might be due to forgetting to take the inhaler. Here are some photos of inhalers with their logging devices. The device will only go on your “preventer” inhaler, which you probably leave at home during the day. You don’t need to have a meter on your “reliever” inhaler that you take to school or when you go out.



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The second, third and fourth visits will last for 30-60 minutes and will take place about three, six and nine months after the first visit. We will ask you about your cough, wheeze and need for your blue inhaler and whether you have had an asthma attack since the last visit (just like a normal asthma clinic). We will measure your lung function and height. We will download the information on your inhaler device. We will measure exhaled nitric oxide. We will only tell you the exhaled nitric oxide results if you are in the group where symptoms and nitric oxide are being used to guide asthma treatment. Your asthma treatment may stay the same or may change slightly. We will write to your doctor with all the details of the visit, including any changes to treatment (just like after a normal asthma clinic).

The last visit will last for up to 60 minutes. This will be just like the second, third and fourth visits, plus some extra questions about how asthma affects you. We will also weigh you. Just like before, we will write to your doctor saying how you are doing and what treatment you are on. Your doctor will see you in three to six months after the last study visit. If you are in the group where nitric oxide is not used to guide treatment we will write to you after the last visit with the nitric oxide results.

The table below summarises what would happen at each appointment.

	First visit	Second, third and fourth visits	Last visit
Exhaled nitric oxide	✓	✓	✓
Questionnaire	✓	✓	✓
Lung function and height	✓	✓	✓
Weight	✓		✓
Inhaler log data		✓	✓

After the last visit, we will also collect information about asthma attacks using data that is collected routinely in the NHS, for example about clinic appointments, hospital admissions and prescriptions.

There are no blood tests at all.

Long term follow-up in RAACENO

We plan to try and obtain funding to follow up the children who take part in the RAACENO study beyond the 12 month follow-up period. We would like to do this to see how health changes over time and impacts on their life. To do this, we would use data that is collected routinely in the NHS, for

example about clinic appointments, hospital admissions and prescriptions. **There would be no additional visits or questionnaires involved in this longer-term follow-up.**

What are the possible benefits of taking part?

You will get regular asthma assessments. We do not know if adding the breathing test that measures exhaled nitric oxide will reduce asthma attacks until the end of the study. At the end of the study, we will write and tell you the results of the study.

What are the possible risks of taking part?

There are none.

Will participation in the study be kept private?

Yes, all the information will be kept private. Only certain members of the research team will have access to your information.

How long will the study last?

The whole study will last for 3 years. Each person who takes part in the study will be in the study for 1 year. During the year, there will be five study visits, each lasting about 30 minutes.

Who is leading the study?

The study is being led by a hospital asthma doctor in Aberdeen called Dr Steve Turner. He is helped by asthma doctors from across the country.

Your doctor is also taking part in the study. You can see pictures of some of the other doctors and nurses who are taking part in the study on our website:



Who has reviewed this study?

The study has been reviewed by the North of Scotland Research Ethics Committee and also specialists in the field.

What do I do now?

If you are interested in taking part please let your parent/guardian know.

Thank you very much for taking the time to read this information and to consider taking part in this study.