

HEALTHY HOMES

Participant Information Sheet V2

Born in Bradford (BiB) (www.borninbradford.nhs.uk), is an established and renowned research project based at the Bradford Royal Infirmary. We carry out a wide range of research studies across the city with the aim to improve the health of people living in Bradford and beyond.

What is the Healthy Homes study about?

With **Healthy Homes**, we are continuing our research into the impact of the indoor environment on our health. In the next few years many properties in the social housing sector will undergo work to make them more energy efficient (retrofitting). The Healthy Homes study aims to understand what impacts these retrofits have on energy costs, resident experiences and their health. The study measures indoor air quality and collects data from residents living in homes managed by "Incommunities". We are looking to include homes with retrofitting scheduled for 2026 (March to October) and similar homes who are scheduled for retrofitting later in 2027. You are invited to take part in the study because your home fits these criteria.

Why are we carrying out the Healthy Homes Study?

Although 90% of our time is spent indoors with two-thirds of this time inside our homes, we are just beginning to understand the impact of our indoor environment on our health. Because so many homes will have work done in the next few years to make them more energy efficient, it is important to understand how retrofitting changes the amount of indoor pollution in the home, as well as the temperature and humidity, which affect damp and mould. We also want to understand how these indoor environments impact our mental wellbeing and our health in general. A strong focus will be on our lung health as we have a lot of respiratory problems here in Bradford.

Do I have to take part?

As a tenant of a home that is eligible to be included, it is entirely up to you whether you decide to take part in this study. If you decide to take part, but change your mind later, you can stop being part of the study at any time, without giving a reason. We will only use research data that we have collected about you up to that point. Whatever you decide, your rights will not be affected in any way.

What will happen when taking part?

We would like to visit your home to deliver and set up an air pollution sensor (AirGradient), usually in the living room. The sensors will stay in your home from set up in 2025 until spring 2027 (18 to 21 months).

We will ask you to complete a consent form to confirm that you are happy to take part in this study and fill in a short questionnaire about your home and your household. A code number will be used to store any information we collect from you.

How does the sensor work?

The sensor will need to remain plugged into a socket. It comes with its own internet connection, which will be either integrated inside the device or as a little separate internet hub. The sensor can only record air quality data including temperature, humidity, carbon dioxide (CO₂, a measure of ventilation), and pollution data, like the concentration of fine particles and chemicals.



This is an example of the sensors we will use. It is compact (13x13x3.6cm), light (300g), almost silent and uses very little energy (approximately 4p/month).



A small number of these sensors will also be able to measure Nitrogen Dioxide (NO₂), a gas that gets in the air when fuel is burned, for example. The units measuring NO₂ will look slightly different.

At the end of the measurement period all sensors will be collected by the research team.

What else is involved?

We would like to keep in touch with you regularly.

Before and after both winter periods we would like to take note or take a picture of your energy meter readings. After the first set up visit, we will ask you to complete further questionnaires about your health and your home at three time points, one during each winter and one in the summer period in between. You can complete these questionnaires either by yourself online or with one of our researchers.

Timeline of questionnaires:

Summer/Autumn 2025	Jan to Feb 2026	July to Aug 2026	Jan to Feb 2027
Set up visit	Winter period 1	Summer period	Winter period 2
1st Questionnaire	2 nd Questionnaire	3 rd Questionnaire	4 th Questionnaire

Additional data collection

We would like to collect additional data in a smaller number of households. These should represent the range of all households taking part. They will be selected from the participants that expressed an interest in any additional data collection (see below). However, at any point it is entirely up to you whether you agree to any of these.

Mould sensor

When we first visit your home, we may ask you for permission to use a sensor that detects mould spores in the air. Mould spores occur naturally in the air and we would like to measure concentrations present in homes. The sensor will be plugged into a socket for a short period of time to obtain a measurement. The internal storage will

save the measurement, but there will be no display of a reading or meaningful result that could be fed back to you there and then. We may ask you whether we could repeat the measurement, for example in the winter periods and in the summer in between, to obtain comparison measurements at different time points. At each time point, the decision is yours whether to proceed.

Window sensor

We may ask you whether you would consider accommodating a window sensor on one of your windows for a period of time. This is a commercially available sensor that uses magnets to record whether windows are open or closed. These sensors are battery operated and do not use any additional electricity. This will help us to estimate ventilation of the room. If you are happy to consider we may contact you in a few months with additional information for you to decide.

Taking part in an interview

We may also ask you whether you are happy to be contacted by one of our BiB researchers to receive information about taking part in interviews to explore views of participants in more depth.

What will happen to the information we collect?

We will need to use information from you for this research study, but people who do not need to know who you are will not be able to see your name or contact details. Your data will have a code number instead.

Information (air quality data, the sensor serial number and the IP address of the sensor's own internet connection) will be uploaded securely to the AirGradient server in Europe. All data uploaded is anonymised and no personally identifiable information is transmitted. The BiB team will link this air quality data to other information we will collect from you, for example, data from questionnaires. This linked data will be held in our secure servers at Bradford Teaching Hospitals NHS Foundation Trust. If you are already part of our Born in Bradford cohort studies, we may link the data also to data we have already collected.

We will not share any identifiable data with Incommunities, nor will Incommunities share any of your personal details with BiB, unless you ask them to.

All data you provide will be treated in the strictest confidence and will be processed for research use subject to the Data Protection Act 2018.

Your data will be stored securely and confidentially. We will de-identify the research data we collect, so you cannot be identified from it. As Born in Bradford is a long-term project, data we collect will be held securely for the duration of the project. This is likely to be at least 25 years.

We may share data also outside the UK for research related purposes: Born in Bradford collaborates with many researchers across the world. We may provide data to researchers on request under strict conditions. Our website provides further information on how researchers access data:

<https://borninbradford.nhs.uk/research/how-to-access-data/>

For more details, see our Privacy Policy: <https://borninbradford.nhs.uk/privacy-policy/>. The AirGradient Data Privacy Policy is available via <https://borninbradford.nhs.uk/wp-content/uploads/2024/11/data-privacy-policy-airgradient.pdf>

Are there any possible advantages to taking part in the study?

In the short-term, it is unlikely that you will receive direct benefits. However, the main advantage is that you will be helping us and other scientists to understand more about how housing affects the comfort and the health of people living in our communities and how this might be improved for future generations.

What are the costs of the study?

There are no costs to you participating in the study. You will receive £20 in form of a voucher each month whilst the sensor is in your home to show our appreciation of your involvement and commitment.

How will I find out the findings of the study?

You will receive a personalised summary report of the measurements from your home after the measurement period has ended, unless you have told us that you do not wish to receive this report. We will make sure that those taking part will hear about the findings through public meetings, newsletters and through our BiB website, which will be regularly updated: <https://borninbradford.nhs.uk/what-we-do/studies/healthy-homes/>

The findings from this study will also be published in scientific journals and presented at scientific conferences. None of these publications or presentations will identify individual participants.

Who is organising and funding the research?

The study is funded by the National Institute for Health Research (NIHR) and sponsored by Bradford Teaching Hospitals NHS Foundation Trust. Professor Rosie McEachan and Dr Tiffany Yang are overseeing the study. All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favorable opinion by the NHS Bradford Leeds Research Ethics committee.

What if I have any questions or problems?

To ask about the study or research related aspects, please contact the BiB Community Team 01274 27 4474 or email us borninbradford@bthft.nhs.uk. You can obtain more information about the BiB cohort on our website, www.borninbradford.nhs.uk.

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Thank you for reading this information sheet and considering taking part in this study