

A study to explore knowledge, views and behaviours surrounding inhaler selection and whether knowledge of the carbon footprint of inhalers is important to patients

Submission date 25/10/2023	Recruitment status Recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 09/11/2023	Overall study status Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 09/11/2023	Condition category Respiratory	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

The NHS contributes substantially to the UK's carbon footprint with an estimated 23 million tonnes gCO₂Eq per year, 3% of which comes from pMDIs. There are a number of alternative inhalers, such as DPIs, which do not use propellant and therefore have a significantly lower carbon footprint. There is a call to move towards greener inhalers as part of the NHS long term plan for sustainability, to reduce the carbon footprint and therefore the environmental impact and help protect the health of our patients today and in the future.

We are looking to explore knowledge, views and behaviours surrounding inhaler selection and in particular whether knowledge of the carbon footprint of inhalers is important to patients when discussing their inhaled treatments as well as to better understand how carbon footprint information should be provided to patients. This will potentially facilitate a drive to greener inhaler prescribing practices whilst further empowering patients to have an active role in decisions around their inhaler treatments.

Who can participate?

All inpatients, outpatients, staff and visitors attending primary and secondary care sites across the Wessex Asthma Network, who regularly use an inhaler for a diagnosed respiratory condition will be invited to take part.

What does the study involve?

We have designed an online questionnaire which should take no longer than 10 minutes to complete. It includes questions to determine attitudes towards and current knowledge of the carbon footprint of inhalers and whether participants feel this is something that should be included in discussions around inhaler choice and how this information is best presented. There are also 2 very simple case scenarios which are not a test of knowledge, but which will assess

thoughts on inhaler switching with participants being automatically randomised into one of two groups (one with the carbon footprint of each inhaler, and the other without). We will also assess current inhaler recycling practices.

What are the possible benefits and risks of participating?

None

Where is the study run from?

Portsmouth Hospitals NHS Trust (UK)

When is the study starting and how long is it expected to run for?

August 2023 to October 2026

Who is funding the study?

RESPIACTION CIC (UK)

Who is the main contact?

Laura.wiffen@porthosp.nhs.uk

Contact information

Type(s)

Scientific

Contact name

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Contact details

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Additional identifiers

Clinical Trials Information System (CTIS)

Nil known

Integrated Research Application System (IRAS)

332630

Protocol serial number

CPMS 58381, IRAS 332630

Study information

Scientific Title

A randomised controlled trial to explore knowledge, views and behaviours surrounding inhaler selection and whether the carbon footprint of inhalers is important to patients

Acronym

REDUCE- Carbon for Patients

Study objectives

We are looking to explore knowledge, views and behaviours surrounding inhaler selection and in particular whether knowledge of the carbon footprint of inhalers is important to patients when discussing their inhaled treatments as well as to better understand how carbon footprint information should be provided to patients.

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 13/10/2023, South Central Berkshire Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 207 1048233; berkshire.rec@hra.nhs.uk), ref: 23/SC/0310

Study design

Interventional randomized controlled trial

Primary study design

Interventional

Study type(s)

Other

Health condition(s) or problem(s) studied

Asthma

Interventions

Participants will be randomised into either:

- The Control arm- Participants will not receive any information regarding the carbon footprint of individual inhalers
- The Intervention arm- Participants will be provided with the carbon footprint for individual inhalers.

The study is an online questionnaire based on the Wessex Asthma Network inhaler guidelines consisting of questions and two very simple case scenarios. It is not a test of knowledge and will take about 10 minutes to complete.

Intervention Type

Behavioural

Primary outcome(s)

Measured by questionnaire at point of questionnaire completion:

1. The number and proportion of participants preferring high or low carbon inhalers
2. The number and proportion of participants who think carbon footprint should be included in

inhaler choice discussions

3. The number and proportion of participants who would be willing to change their inhaler to a lower carbon option

Key secondary outcome(s)

Measured by questionnaire at point of questionnaire completion:

1. The rank order of preference of the following factors in carbon-containing and non-carbon containing groups: Cost of the inhaler, Carbon footprint of the inhaler, How many times a day the inhaler needs to be used, The view of the healthcare professional prescribing the inhaler
2. With sensitivity analyses of the order of preference for the following factors in both groups: Age, Respiratory condition, Level of education attainment, Number of inhalers used by the participant, Length of time participant has been using inhalers
3. The number and proportion of participants who are aware of the environmental impact of inhalers
4. The number and proportion of participants matching the inhaler carbon footprint to the equivalent car journey
5. The rank order of preference of the following options in the provision of inhaler carbon footprint: By the healthcare professional prescribing the inhaler, as gCO₂Eq on the inhaler packaging, access to a website displaying the carbon footprint of all inhalers, by the pharmacist when collecting prescriptions, would not want to receive the information
6. The rank order of preference of the following options of how inhaler carbon footprint should be made available : By using a traffic light system to demonstrate high/medium/low carbon footprints, As an exact value (in grams of carbon dioxide equivalent), Using everyday measures as a comparator, Would not want to receive the information
7. The proportion of participants that try to recycle their inhalers.
8. The proportion of participants that would use inhaler recycling facilities if available

Completion date

24/10/2026

Eligibility

Key inclusion criteria

1. Aged ≥ 18 years
2. Have a diagnosed respiratory condition and take an inhaler regularly
3. Able to provide e-consent
4. Able to understand and complete the clinical case scenarios

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Sex

All

Key exclusion criteria

Inability to understand or comply with study procedures and/or inability to give fully informed consent.

Date of first enrolment

25/10/2023

Date of final enrolment

24/10/2026

Locations

Countries of recruitment

United Kingdom

Study participating centre

Portsmouth Hospitals University National Health Service Trust

Queen Alexandra Hospital

Southwick Hill Road

Cosham

Portsmouth

United Kingdom

PO6 3LY

Study participating centre

Hampshire Hospitals NHS Foundation Trust

Basingstoke and North Hampshire Hos

Aldermaston Road

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RG24 9NA

Sponsor information

Organisation

Portsmouth Hospitals NHS Trust

ROR

<https://ror.org/009fk3b63>

Funder(s)

Funder type

Industry

Funder Name

RESPIACTION CIC

Results and Publications

Individual participant data (IPD) sharing plan

All data generated or analysed during this study will be included in the subsequent results publication

IPD sharing plan summary

Published as a supplement to the results publication

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	version 1.1	26/09/2023	08/11/2023	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes