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# 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

**Registration date**
09/11/2023

**Overall study status**
Ongoing

**Last Edited**
09/11/2023

**Condition category**
Respiratory

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

## Plain English summary of protocol

Background and study aims
The NHS contributes substantially to the UKs 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 a 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
Dr Laura Wiffen

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# Additional identifiers

### Clinical Trials Information System (CTIS)
Nil known

### Integrated Research Application System (IRAS)
332630

### ClinicalTrials.gov (NCT)
Nil known

### 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
Basingstoke
United Kingdom
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 |
| Participant information sheet | Participant information sheet | 11/11/2025 | 11/11/2025 | No | Yes |
| Study website | Study website | 11/11/2025 | 11/11/2025 | No | Yes |