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Asthma and air pollution

Submission date 04/02/2025	**Recruitment status** No longer recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 05/02/2025	**Overall study status** Completed	
Last Edited 17/07/2026	**Condition category** Respiratory	

Plain English summary of protocol
Background and aims
Cooking on natural gas stoves is a major source of indoor air pollution, and this may be detrimental for people with asthma. This study will determine if changing gas stoves to electric stoves leads to an improvement in asthma control as measured by a symptom questionnaire.

Who can participate?
Households that use a gas stove for cooking, have at least one person with asthma, and are located in or near Cleveland, Ohio, United States of America.

What does the project involve?
This project team will change gas stoves to electric stoves at no charge to participating households. Changing the stove may take up to 1 week if a kitchen electrical upgrade is needed. Participants will be followed for 2-3 months after the stove change.

What are the possible benefits and risks of participating?
The potential benefit is an improvement in asthma control. There are no anticipated risks.

Where is the project run from?
The MetroHealth System (USA)

When is the project starting and how long is it expected to run for?
January 2024 to October 2025

Who is funding the project?
The United States Environmental Protection Agency (USA)

Who is the main contact?
Dr Ashwini Sehgal, sehgal@case.edu

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Dr Ashwini Sehgal

Contact details
2500 MetroHealth Drive
Rammelkamp Building Room 219
Cleveland
United States of America
44109
+1 (0)2167787728
sehgal@case.edu

Additional identifiers

Protocol serial number
5F00E04015-0

Study information

Scientific Title
Asthma and indoor air pollution

Study objectives
Replacing gas stoves with electric stoves will improve asthma control

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 15/08/2024, MetroHealth IRB (2500 MetroHealth Drive, Cleveland, 44109, United States of America; +1 (0)216 778 7237; IRBOffice@metrohealth.org), ref: STUDY00000666

Primary study design
Interventional

Study design
Interventional multi-site unblinded non-randomized single-arm study

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Asthma

Interventions
This project team will change gas stoves to electric stoves at no charge to participating households. Changing the stove may take up to 1 week if a kitchen electrical upgrade is needed. Participants will be followed for 2-3 months after the stove change.

Intervention Type

Other

Primary outcome(s)
Asthma control assessed using the Asthma Control Questionnaire at baseline (defined as 1-4 weeks before stove change) and at follow-up (defined as 2-3 months after stove change)

Key secondary outcome(s)
There are no secondary outcome measures

Completion date
31/10/2025

Eligibility

Key inclusion criteria
1. At least one person in the household has self-reported asthma
2. Person with asthma has an asthma control questionnaire score of 1.5 or higher
3. Household uses a gas stove for cooking and is interested in changing to an electric stove
4. Household located in or near Cleveland, Ohio, United States of America

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
All

Sex
All

Total final enrolment
85

Key exclusion criteria
Does not meet the inclusion criteria

Date of first enrolment
10/02/2025

Date of final enrolment
02/05/2025

Locations

Countries of recruitment
United States of America

Study participating centre
The MetroHealth System
2500 MetroHealth Drive
Cleveland
United States of America
44109

Sponsor information

Organisation
MetroHealth

ROR
https://ror.org/0377srw41

Funder(s)

Funder type
Government

Funder Name
U.S. Environmental Protection Agency

Alternative Name(s)
United States Environmental Protection Agency, Environmental Protection Agency, US Environmental Protection Agency, Agencia de Protección Ambiental de Estados Unidos, EPA, U. S. EPA, US EPA, USEPA

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United States of America

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analyzed will be available upon request from Dr Ashwini Sehgal (sehgal@case.edu)

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		03/07/2026	17/07/2026	Yes	No