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Understanding the relationship between respiratory health and air quality

Submission date
04/09/2026

Recruitment status
Recruiting

Registration date
29/09/2026

Overall study status
Ongoing

Last Edited
11/09/2026

Condition category
Respiratory

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

Plain English summary of protocol

Background and study aims
Air pollution is an important public health issue and may affect respiratory health and overall well-being. However, there is limited information on how environmental exposure, lifestyle factors, respiratory symptoms and existing respiratory conditions interact at population level in Spain. The CheckAir Spain study aims to collect information from citizens across Spain to better understand the relationship between respiratory health, environmental exposures and air quality. The results may help identify population needs, support prevention strategies and contribute to public health planning.

Who can participate?
People of all ages living in Spain can participate. Adults can complete the assessment themselves. Children and adolescents can participate through a parent or legal guardian, who will complete the questionnaire on their behalf. Participants must provide informed consent before taking part.

What does the study involve?
Participants complete a digital CheckAir questionnaire, which takes about 3 to 5 minutes. The questionnaire asks about respiratory symptoms, previous diagnoses, lifestyle habits, environmental exposures and perceived air quality. Participants also provide general location information, which is used to link responses with publicly available air quality data for their area. After completing the assessment, participants can access a personalised educational report and respiratory health guidance. Participation is entirely voluntary and involves a single questionnaire with no follow-up visits.

What are the possible benefits and risks of participating?
Participants may gain a better understanding of factors that can influence their respiratory health and receive educational information about air quality and respiratory well-being. The study does not provide medical diagnosis, treatment or clinical advice. Risks are minimal because participation involves only completing an online questionnaire. Some participants may experience mild discomfort or concern when answering questions about symptoms or health conditions.

Where is the study run from?
The study is coordinated by the Lovexair Foundation in Madrid, Spain, and is conducted throughout Spain using a digital platform. All participation is completed remotely or during community events.

When is the study starting and how long is it expected to run for?
September 2026 to September 2028

Who is funding the study?
Lovexair Foundation (Spain)

Who is the main contact?
1. Eva Maroto López, formacion@lovexair.com
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Additional identifiers

Study information

Scientific Title
CheckAir Spain: respiratory health and environmental exposure

Acronym
CheckAir

Study objectives
Primary objective:
The primary objective of this study is to assess self-reported respiratory health outcomes among participants in the Spanish community using the CheckAir lung health assessments and to examine their association with air quality exposure (PM2.5 readings).

Secondary objectives:
1. To generate geographically representative and aggregated real-world evidence on respiratory symptoms, diagnoses, and risk factors throughout Spain
2. Identify geographic hotspots and vulnerable subgroups (e.g., high symptom burden, high-exposure areas) to support specific public health interventions
3. To estimate the proportion and profile of participants with possible undiagnosed respiratory diseases based on symptom patterns and risk factors
4. Examine patterns of treatment and disease control correlating self-reported symptoms with treatment use, as an indicator of symptom control and potential unmet clinical needs
5. Support public health policy and prevention planning by providing evidence on environmental exposure, symptom burden, and unmet needs
6. Inform strategies that strengthen equitable access to respiratory health services and prevention resources

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 04/09/2026, Research Ethics Committee of Fundación Jiménez Díaz University Hospital (FJD) (C/ Avenida de los Reyes Católicos 2, Madrid, 28040, Spain; +34 (0)91 5443720; ceic@fjd.es), ref: PIC080-26_FJD

Primary study design
Observational

Secondary study design
Cross sectional study

Study type(s)

Health condition(s) or problem(s) studied
Respiratory health outcomes

Interventions
Participants residing in Spain will complete a single digital CheckAir respiratory health assessment. The questionnaire collects information on demographic characteristics, respiratory symptoms, previous respiratory diagnoses, lifestyle and behavioural factors, environmental exposures, and perceived respiratory health. Participants will provide general location information, which will be used to link responses with publicly available ambient air quality data, including particulate matter (PM2.5) measurements. No intervention, treatment allocation, randomisation or follow-up will be conducted. Data will be analysed to evaluate associations between self-reported respiratory health outcomes, environmental exposures and air quality indicators in a cross-sectional observational study design.

Intervention Type
Other

Primary outcome(s)
1. Self-reported respiratory health outcomes measured using the Digital CheckAir respiratory health assessment questionnaire at baseline

Key secondary outcome(s)
1. Respiratory symptom burden measured using self-reported respiratory symptoms collected through the digital CheckAir respiratory health assessment questionnaire at baseline

2. Self-reported respiratory diagnoses measured using participant-reported previous respiratory diagnoses recorded through the CheckAir questionnaire at baseline

3. Respiratory risk factor profile measured using self-reported smoking status, vaping exposure, occupational exposure, biomass exposure and other respiratory risk factors collected through the CheckAir questionnaire at baseline

4. Ambient air quality exposure measured using ambient particulate matter (PM2.5) exposure estimated using publicly available air quality data linked to participant location at baseline

5. Environmental exposure indicators measured using self-reported environmental exposures and location-linked environmental data collected through the CheckAir assessment and external environmental databases at baseline

Completion date
30/09/2028

Eligibility

Key inclusion criteria
1. Resident in Spain
2. Individuals 18 years of age or older who voluntarily complete the assessment online or during in-person events
3. Minors (0–17 years old), whose participation will be carried out through their father or mother or legal guardian, who will complete the questionnaire on their behalf

In the case of minors:
1. The questionnaire will be completed exclusively by the legal representative, who will provide information on the child's health status, symptoms and environment
2. Informed consent from the parent or legal guardian will be required prior to entry
3. The parent or legal guardian will be responsible for the veracity of the information provided
4. When the child is old enough and mature enough to understand the information (usually from the age of 12 years), their verbal or implicit assent will also be sought, explaining the objective of the questionnaire in an appropriate way

Healthy volunteers allowed
Yes

Age group
All

Lower age limit
0 Days

Upper age limit
120 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. Participants who, even with support or assistance available for the informed consent process and the completion of the form, are unable to complete it properly
2. Non-residents of the target geographic area
3. Acute medical emergency requiring immediate clinical attention (would be referred to a healthcare facility instead)
4. Attempted duplication of responses: technical mechanisms will be implemented to detect and prevent duplicate participations

Date of first enrolment
06/09/2026

Date of final enrolment
31/03/2028

Locations

Countries of recruitment
Spain

Sponsor information

Organisation
Lovexair Foundation

Funder(s)

Funder type

Funder Name
Lovexair Foundation

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available