# Transport Related Air Pollution, Variance in commuting, Exposure and Lung function

Published: 27-03-2007
Last updated: 10-05-2024

Quantifying the level of exposure to air pollutants during commuting by car, bus and bicycle. And characterizing the health effects caused by short-term exposure to traffic-related air pollution.

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| **Ethical review** | Approved WMO |
| **Status** | Recruitment stopped |
| **Health condition type** | Bronchial disorders (excl neoplasms) |
| **Study type** | Observational invasive |

## Summary

### ID

NL-OMON30543

**Source**
ToetsingOnline

**Brief title**
TRAVEL

### Condition

- Bronchial disorders (excl neoplasms)
- Vascular disorders NEC

**Synonym**
respiratory tract inflammation and obstruction

**Research involving**
Human

### Sponsors and support

**Primary sponsor:** Academisch Medisch Centrum
**Source(s) of monetary or material Support:** ZonMW

## Intervention

**Keyword:** air pollution, commuting, respiratory health effects, short-term exposure

## Outcome measures

### Primary outcome

On the study days, the volunteers will first meat at Hulpverlening Gelderland Midden to perform some health effects measurements: a lung function test, an airway resistance test, a measurement of nitrogenoxide in exhaled breath, a blood sample and a symptom questionnaire. These health effects will be repeated directly after, and six hours after exposure. During commuting, exposure to particulate matter (PM), to specific compounds in PM and to volatile organic compounds (VOCs) will be measured. The relation between exposure and health effects will be studied using regression analysis.

### Secondary outcome

n.a.

# Study description

### Background summary

During commuting people are exposed to air pollution. During the traffic peaks, many people are exposed, and the air pollution levels are high, causing adverse health effects. The level of exposure during commuting in The Netherlands and the related, short-term health effects are not well known.

### Study objective

Quantifying the level of exposure to air pollutants during commuting by car, bus and bicycle. And characterizing the health effects caused by short-term exposure to traffic-related air pollution.

### Study design

On the study days, the volunteers will commute for 2 hours by car, bus or bicycle, in groups of four. During the commuting, exposure to some air pollutants will be measured. One of the researchers will accompany the volunteers, to handle the equipment and to lead the way. Before and after the measurements health effects will be measured.

### Study burden and risks

All measurements will be taken in Arnhem, in the period from Spring 2007 till Summer 2008. The project will be carried out by the Bureau Medische Milieukunde (Bureau Environmental Health) of Hulpverlening Gelderland Midden and by the Institute of Risk Assessment Sciences (IRAS) of Utrecht University. The project is part of the programme *Academic Collaborating Centres for Public Health*. The participant*s burden and health risk of the exposure is very low, because traffic exposure is an everyday exposure, with minimal risks for healthy persons.

## Contacts

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## Trial sites

### Listed location countries

Netherlands

# Eligibility criteria

**Age**
Adults (18-64 years)
Elderly (65 years and older)

## Inclusion criteria

healthy, non-smoking, working in vicinity (1 km) of Hulpverlening Gelderland Midden, working mainly in the office, 18-50 years of age, living within 15 minutes from Hulpverlening Gelderland Midden

## Exclusion criteria

People are excluded when smoking.
And people are excluded when having doctor diagnosed asthma, COPD or CARA, and when answering yes to one of the following questions:;Have you had wheezing or whistling in your chest at any time in the last 12 months?
Have you had an attack of shortness of breath that came on during the day when you were at rest at any time in the last 12 months?
Have you had an attack of shortness of breath that came on following strenuous activity at any time in the last 12 months?
Have you been woken by an attack of shortness of breath at any time in the last 12 months?
Have you been woken by an attack of coughing at any time in the last 12 months?
Do you usually cough first thing in the morning in the winter?
Do you usually cough during the day, or at night, in the winter?
Do you cough like this on most days for as much as three months each year?
Do you usually bring up any phlegm from your chest first thing in the morning in the winter?
Do you usually bring up any phlegm from your chest during the day, or at night, in the winter?
Do you bring up phlegm like this on most days for as much as three months each year?
Have you used any inhaled medicines to help your breathing at any time in the last 12 months?;(These questions are taken from the European Community Respiratory Health Survey (ECRHS), www.ecrhs.org)

# Study design

## Design

**Study type:** Observational invasive

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|---|---|
| Masking: | Open (masking not used) |
| Control: | Uncontrolled |
| Primary purpose: | Treatment |

### Recruitment

NL

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|---|---|
| Recruitment status: | Recruitment stopped |
| Start date (anticipated): | 07-06-2007 |
| Enrollment: | 32 |
| Type: | Actual |

## Ethics review

Approved WMO

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| Date: | 27-03-2007 |
| Application type: | First submission |
| Review commission: | METC Universitair Medisch Centrum Utrecht (Utrecht) |

## Study registrations

### Followed up by the following (possibly more current) registration

No registrations found.

### Other (possibly less up-to-date) registrations in this register

No registrations found.

### In other registers

| Register | ID |
|---|---|
| CCMO | NL15429.041.06 |