

Technical report:

# HENVINET

## Evaluation questionnaire - Traffic Pollution and Environmental Health

Aileen Yang<sup>1)</sup> and Alena Bartonova<sup>1)</sup>, Editors

**Authors:**

Bertil Forsberg<sup>2)</sup> and Lennart Bråbäck<sup>2)</sup>

<sup>1)</sup> Norwegian Institute for Air Research, Kjeller, Norway

<sup>2)</sup> Umeå University, Umeå, Sweden





Technical report:

# **HENVINET**

## **Evaluation questionnaire - Traffic Pollution and Environmental Health**

Aileen Yang<sup>1)</sup> and Alena Bartonova<sup>1)</sup>, Editors

**Authors:**

Bertil Forsberg<sup>2)</sup> and Lennart Bråbäck<sup>2)</sup>

<sup>1)</sup> Norwegian Institute for Air Research, Kjeller, Norway

<sup>2)</sup> Umeå University, Umeå, Sweden



# Contents

	Page
Contents.....	3
Prelude.....	4
Introduction.....	4
Part A. Evaluation of the structure and completeness of the causal diagram.....	5
Part B. Evaluation of individual models or associations.....	6
1. Associations related to road traffic pollution .....	6
2. Associations related to selected pollutant related to road traffic.....	8
3. Cross cutting issues .....	9
Final comments .....	9



## Evaluation questionnaire – Traffic Pollution and Environmental Health

### **Prelude**

Thank you very much for participating in this study of the HENVINET project. Before beginning, we would ask that you provide some basic information about yourself.

- Name (optional):
- Email address (optional):
- Institutional affiliation (required):
- 5 keywords describing your area of expertise (required):  
1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

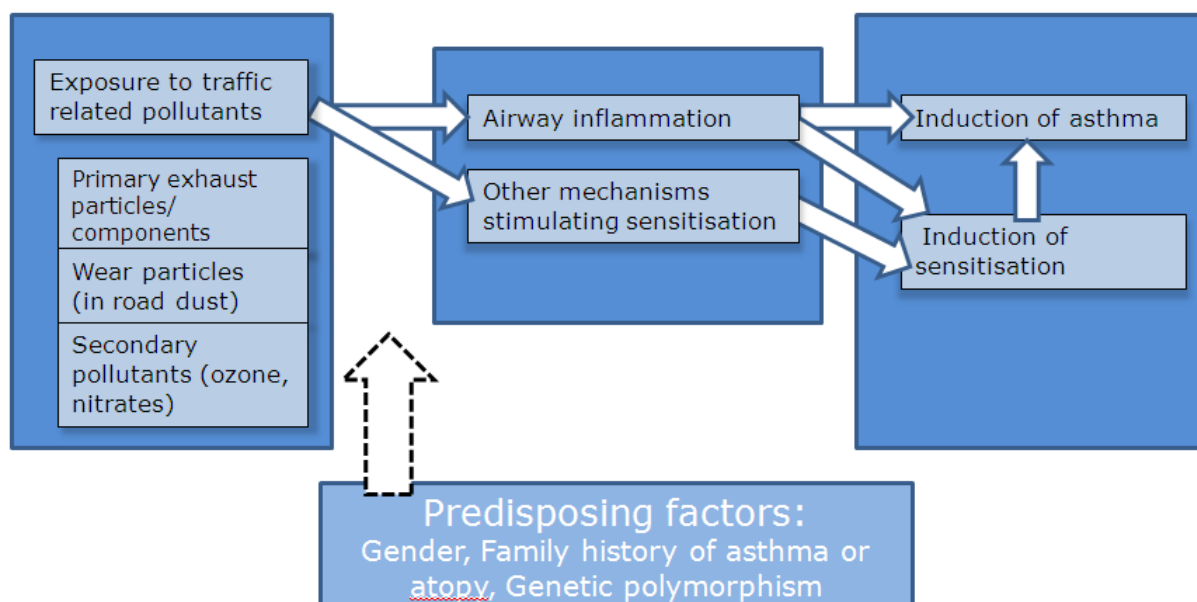
### **Introduction**

In the HENVINET project we focus on four types of diseases, including “asthma and allergies”, and their associations with environmental exposures. This is an *evaluation of the quality of the scientific knowledge* of various aspects of the cause-effect relationship between traffic related air pollutants in ambient air and induction (incidence) of asthma and sensitisation to allergens.

The evaluation consists of two separate parts. In part A you will be asked to comment a simplified model illustrating our current understanding of the cause effect relationship. In part B you will be asked to express your confidence in scientist’s ability to predict the magnitude of a variety of proposed or potential associations.

We expect the entire exercise will take you about 10-15 minutes. We appreciate your participation very much and, on behalf of the HENVINET consortium we thank you for your time.

## Part A. Evaluation of the structure and completeness of the causal diagram



1. Does the diagram take into account all of the important parameters when evaluating the asthma and allergy risks related to traffic pollutants? **YES/NO**

If No, please explain:

2. Are the different causal relationships adequately structured? . **YES/NO**

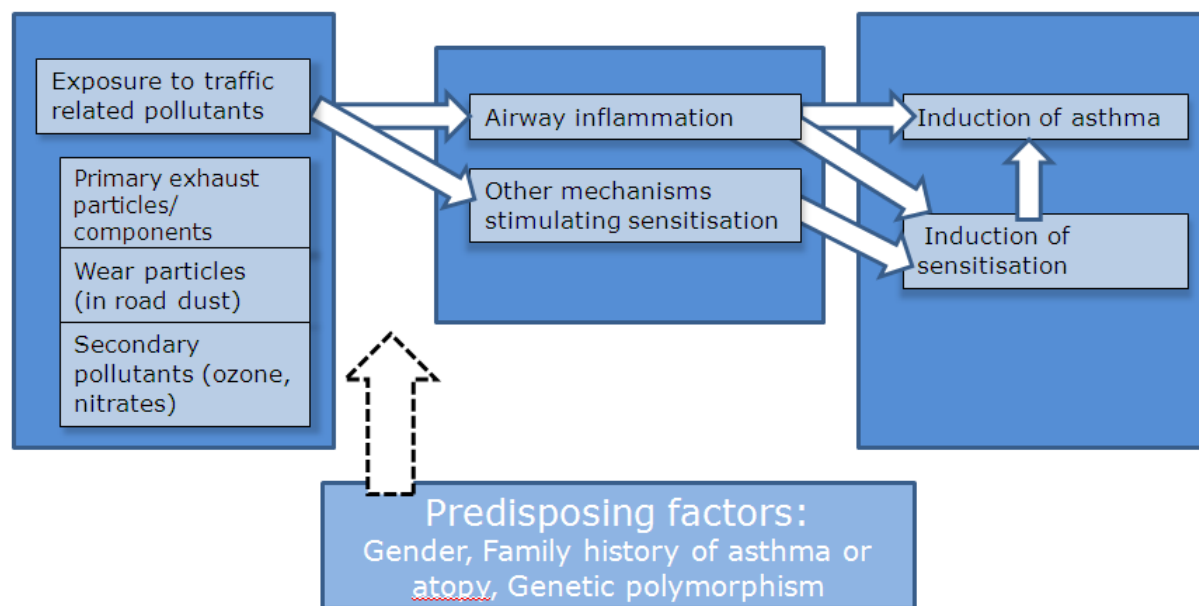
If No, please explain:

3. Are there any unnecessary parameters shown in the diagram that could be deleted? **YES/NO**

If Yes, please explain:

## Part B. Evaluation of individual models or associations

### 1. Associations related to road traffic pollution



1. What is your level of confidence in our ability to predict the magnitude of the effect of road traffic related air pollutants on inflammation in the lungs?

(Insert a checkmark in the appropriate box)

Very high confidence.	High confidence.	Medium confidence.	Low confidence.	Very low confidence.
At least a 9 out of 10 chance of being correct.	At least an 8 out of 10 chance of being correct.	At least a 5 out of 10 chance of being correct.	At least a 2 out of 10 chance of being correct.	Less than a 1 out of 10 chance of being correct.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



2. What is your level of confidence in our ability to predict the magnitude of the effect on asthma induction related to inflammation in the lungs?

(Insert a checkmark in the appropriate box)

Very high confidence	High confidence	Medium confidence	Low confidence.	Very low confidence.
At least a 9 out of 10 chance of being correct.	At least an 8 out of 10 chance of being correct.	At least a 5 out of 10 chance of being correct.	At least a 2 out of 10 chance of being correct.	Less than a 1 out of 10 chance of being correct.

3. What is your level of confidence in our ability to predict the magnitude of the effect on induction of sensitisation related to inflammation in the lungs?

(Insert a checkmark in the appropriate box)

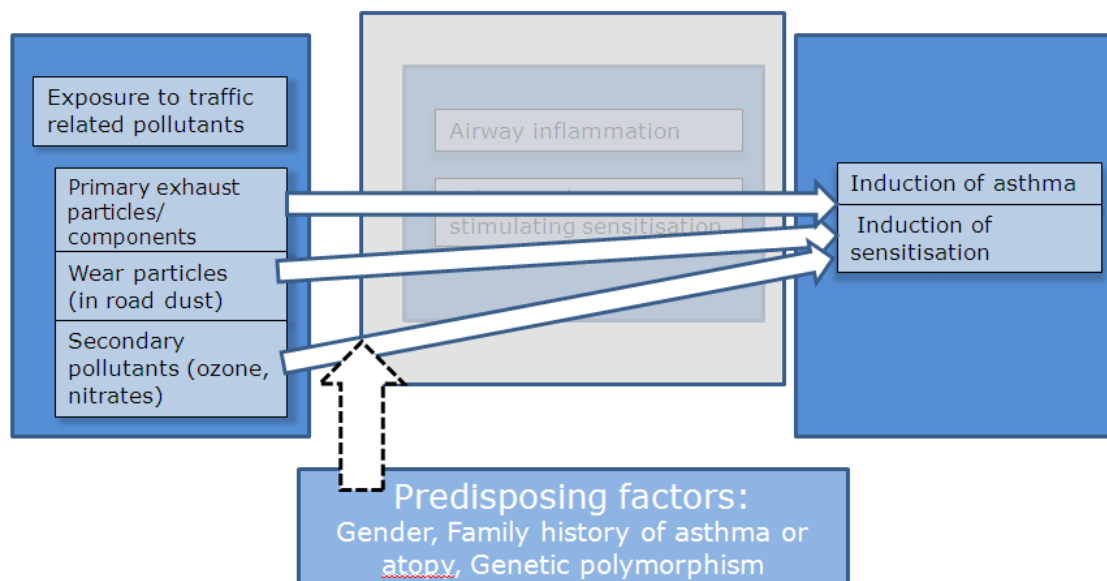
Very high confidence	High confidence	Medium confidence	Low confidence.	Very low confidence.
At least a 9 out of 10 chance of being correct.	At least an 8 out of 10 chance of being correct.	At least a 5 out of 10 chance of being correct.	At least a 2 out of 10 chance of being correct.	Less than a 1 out of 10 chance of being correct.

4. What is your level of confidence in our ability to predict the magnitude of other mechanisms (than inflammation) by which road traffic related air pollutants has an effect on induction of sensitisation?

(Insert a checkmark in the appropriate box)

Very high confidence	High confidence	Medium confidence	Low confidence.	Very low confidence.
At least a 9 out of 10 chance of being correct.	At least an 8 out of 10 chance of being correct.	At least a 5 out of 10 chance of being correct.	At least a 2 out of 10 chance of being correct.	Less than a 1 out of 10 chance of being correct.

## 2. Associations related to selected pollutant related to road traffic



5. What is your level of confidence in our ability to predict the magnitude of the effect of *primary exhaust particles/components* on induction of asthma and sensitisation (by any mechanism)?

(Insert a checkmark in the appropriate box)

Very high confidence	High confidence	Medium confidence	Low confidence.	Very low confidence.
At least a 9 out of 10 chance of being correct.	At least an 8 out of 10 chance of being correct.	At least a 5 out of 10 chance of being correct.	At least a 2 out of 10 chance of being correct.	Less than a 1 out of 10 chance of being correct.

6. What is your level of confidence in our ability to predict the magnitude of the effect of *wear particles* (in road dust) on induction of asthma and sensitisation (by any mechanism)?

(Insert a checkmark in the appropriate box)

Very high confidence	High confidence	Medium confidence	Low confidence.	Very low confidence.
At least a 9 out of 10 chance of being correct.	At least an 8 out of 10 chance of being correct.	At least a 5 out of 10 chance of being correct.	At least a 2 out of 10 chance of being correct.	Less than a 1 out of 10 chance of being correct.

7. What is your level of confidence in our ability to predict the magnitude of the effect of *traffic related secondary pollutants (nitrates, ozone etcetera)* on induction of asthma and sensitisation (by any mechanism)?

(Insert a checkmark in the appropriate box)

Very high confidence	High confidence	Medium confidence	Low confidence.	Very low confidence.
At least a 9 out of 10 chance of being correct.	At least an 8 out of 10 chance of being correct.	At least a 5 out of 10 chance of being correct.	At least a 2 out of 10 chance of being correct.	Less than a 1 out of 10 chance of being correct.

### 3. *Cross cutting issues*

The diagram illustrates different proposed or potential ways through which traffic exposure could lead to induction of asthma and/or sensitisation. On a scale of 1 to 6, please rank the relative importance of each proposed or potential association in comparison with the health impact to be expected via other pathways.

Causal Pathway  
Relative ranking (1-6)

1. Primary exhaust components – Induction of asthma \_\_\_\_\_
2. Primary exhaust components – Induction of sensitisation \_\_\_\_\_
3. Wear particles – Induction of asthma  
\_\_\_\_\_
4. Wear particles – Induction of sensitisation  
\_\_\_\_\_
5. Secondary pollutants – Induction of asthma \_\_\_\_\_
6. Secondary pollutants – Induction of sensitisation \_\_\_\_\_

### **Final comments**

Thank you very much for taking part in this evaluation. Your contribution is much appreciated and we look forward to the results of the evaluation. Are there any comments you would like to make in closing to complete your evaluation? Perhaps you would like to comment on key areas of knowledge which you think are underdeveloped?

Answer:

***Thank you!***



REFERENCE: U-106169  
DATE: NOVEMBER 2010  
ISBN: 978-82-425-2305-1 (print)  
978-82-425-2313-6 (electronic)

NILU is an independent, nonprofit institution established in 1969. Through its research NILU increases the understanding of climate change, of the composition of the atmosphere, of air quality and of hazardous substances. Based on its research, NILU markets integrated services and products within analyzing, monitoring and consulting. NILU is concerned with increasing public awareness about climate change and environmental pollution.

REFERENCE: U-106169  
DATE: NOVEMBER 2010  
ISBN: 978-82-425-2305-1 (print)  
978-82-425-2313-6 (electronic)

NILU is an independent, nonprofit institution established in 1969. Through its research NILU increases the understanding of climate change, of the composition of the atmosphere, of air quality and of hazardous substances. Based on its research, NILU markets integrated services and products within analyzing, monitoring and consulting. NILU is concerned with increasing public awareness about climate change and environmental pollution.



Norsk institutt for luftforskning  
Norwegian Institute for Air Research