Technical report:

# HENVINET

## Evaluation questionnaire - Traffic Pollution and Environmental Health

Aileen Yang[1] and Alena Bartonova[1], Editors


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# Contents

HENVINET
HEALTH AND ENVIRONMENT NETWORK

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
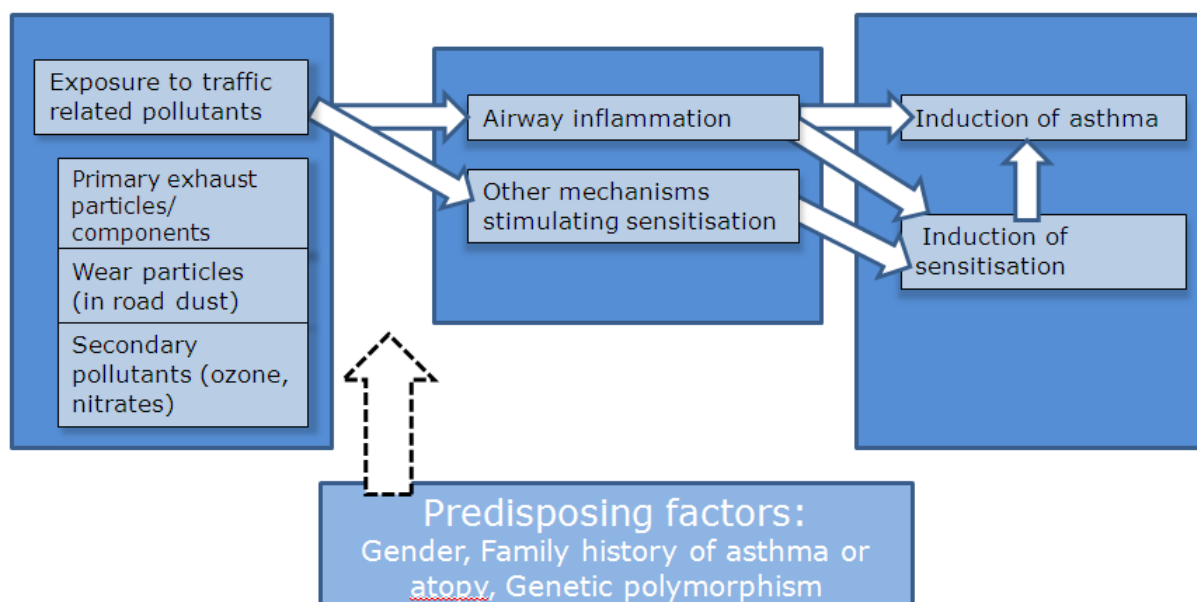


1. Does the diagram take into account all of the important parameters when evaluating the asthma and allergy risks related to traffic pollutants? **YES/NO**

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
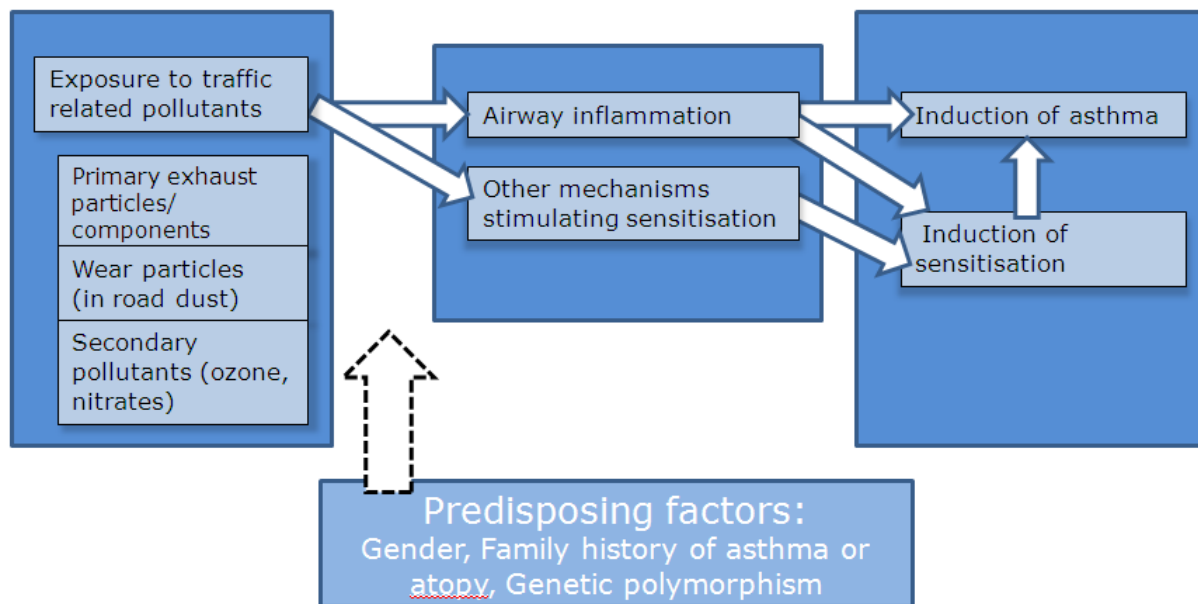


1. What is your level of confidence in our ability to predict the magnitude of the effect of road traffic related air pollutants on inflammation in the lungs?

(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. |
|  |  |  |  |  |

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

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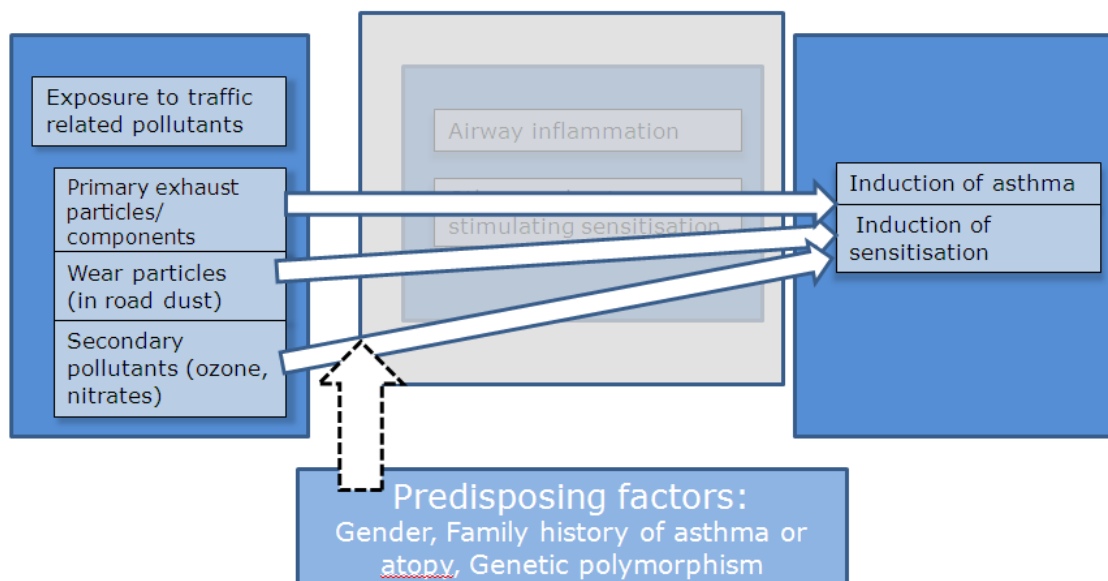


5. What is your level of confidence in our ability to predict the magnitude of the effect of *primary exhaust particles/components* on induction of asthma and sensitisation (by any mechanism)?
   (Insert a checkmark in the appropriate box)

| 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!*

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| KEYWORDS<br><br>   Traffic related pollutants | Asthma, Allergen sensitization | | Knowledge evaluation,<br>Cause-effect diagram | |
| ABSTRACT<br>The HENVINET consortium has developed a questionnaire to identify knowledge gaps in the state of the art in scientific knowledge. Literature reviews covered all elements that compose the causal chain of the different environmental health issues from emissions to exposures, to effects and to health impacts. Ultimately, the aim is to discuss the implications of these for policy and research.<br><br>In this evaluation we focus on various aspects of the cause-effect relationship between traffic related air pollutants in ambient air and induction (incidence) of asthma and sensitization to allergens. The questionnaire consists of two separate parts. In Part A, you will be asked to comment on the completeness and structure of the causal diagram illustrating scientists' current understanding of the cause-effect relationship. In Part B, you will be asked to express your confidence in scientists' ability to predict the magnitude of a variety of proposed or potential associations. | | | | |

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