

# Traffic Pollution and Your Health

Studies from EOHSI and the World

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## Exposure to Traffic and the Onset of Myocardial Infarction

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### ABSTRACT

#### BACKGROUND

An association between exposure to vehicular traffic in urban areas and the exacerbation of cardiovascular disease has been suggested in previous studies. This study was designed to assess whether exposure to traffic can trigger myocardial infarction.

#### METHODS

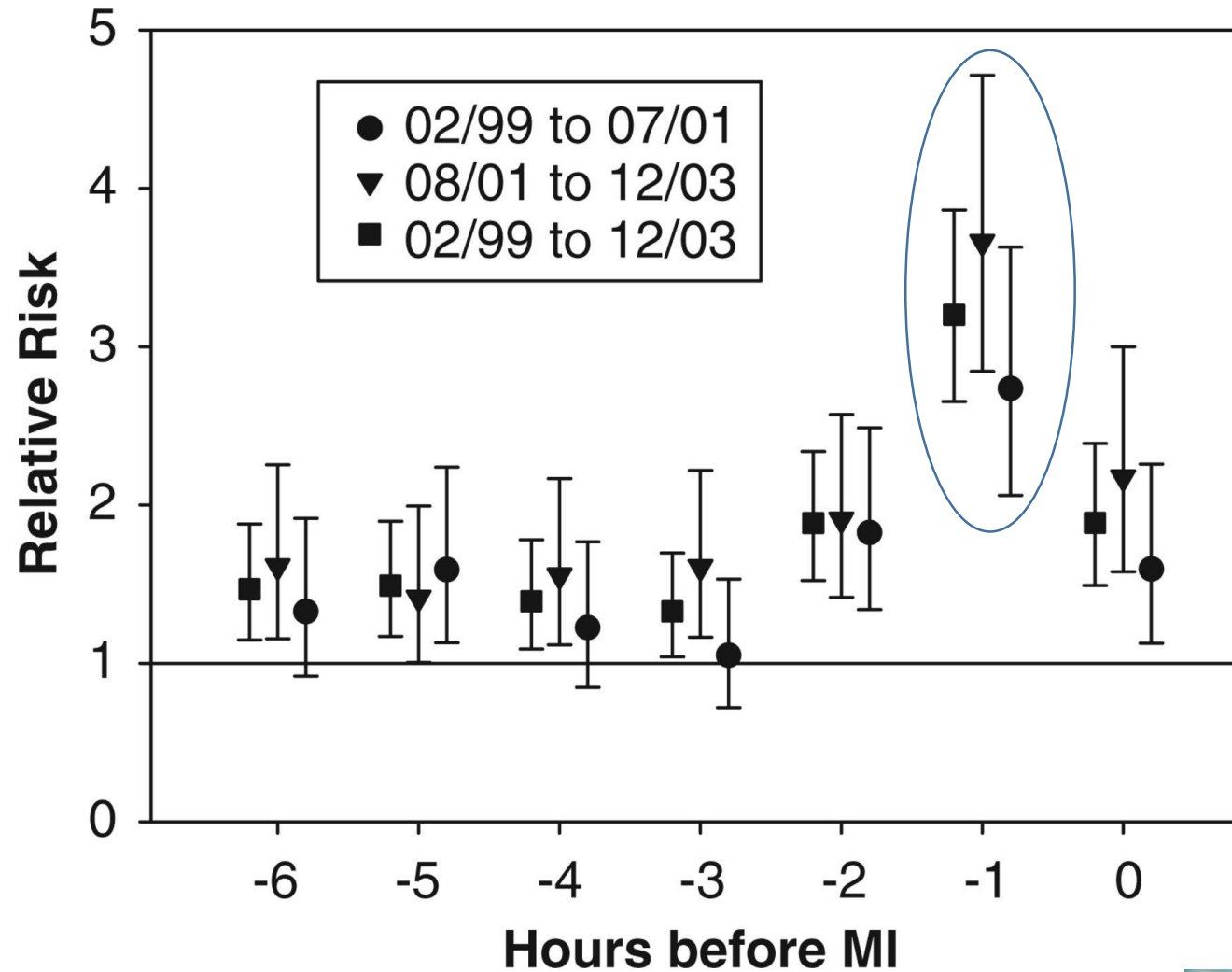
We conducted a case–crossover study in which cases of myocardial infarction were identified with the use of data from the Cooperative Health Research in the Region of Augsburg Myocardial Infarction Registry in Augsburg, in southern Germany, for the period from February 1999 to July 2001. There were 691 subjects for whom the date and time of the myocardial infarction were known who had survived for at least 24 hours after the event, completed the registry’s standardized interview, and provided information on factors that may have triggered the myocardial infarction. Data on subjects’ activities during the four days preceding the onset of symptoms were collected

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Figure 2. Relative risk for experiencing an acute myocardial **infarction after times spent in traffic** adjusted for time of day, strenuous exertion, being outdoors and standing up after sleeping concurrently.



Peters A et al. European Journal of Preventive Cardiology  
2012;20:750-758

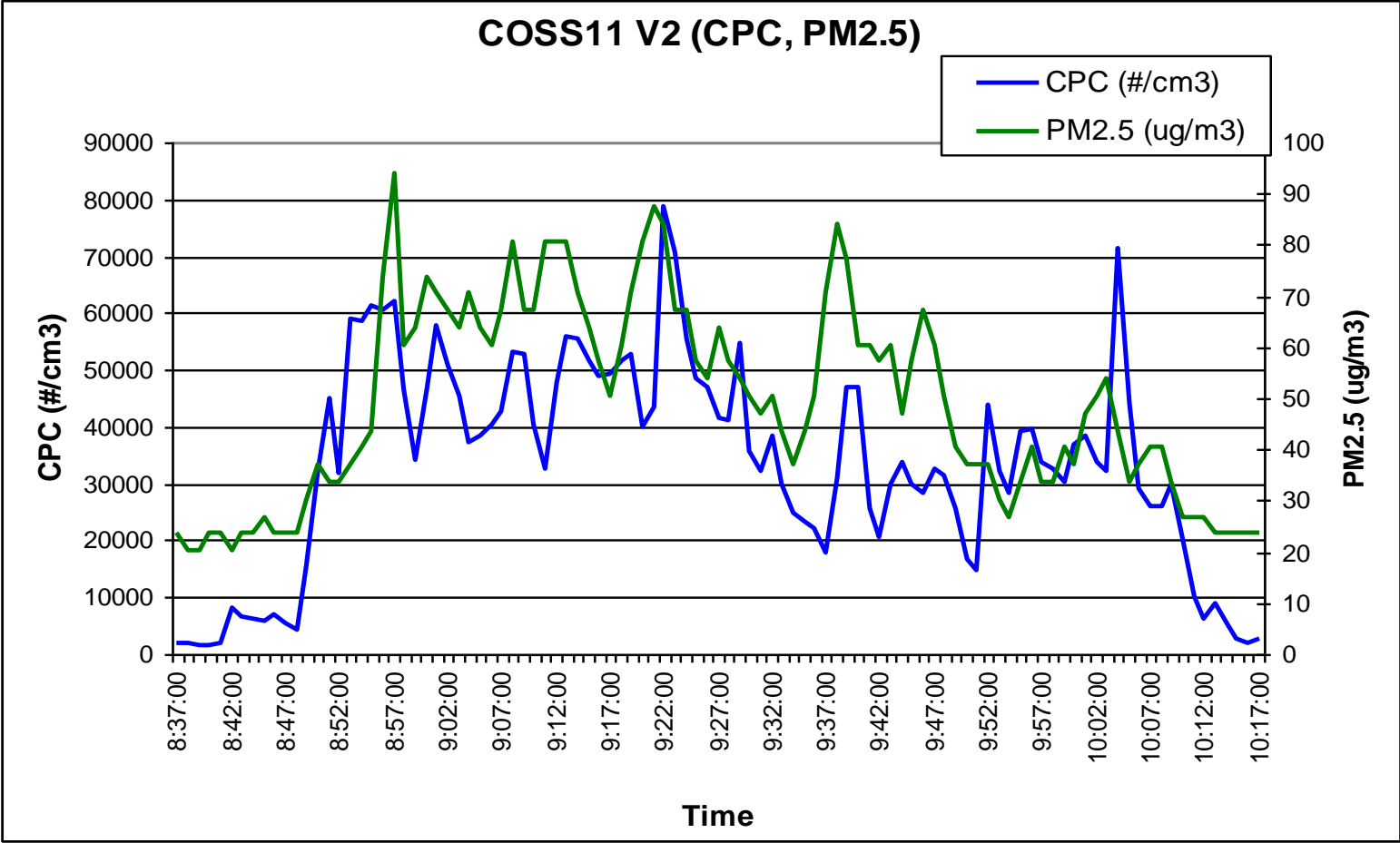


# Traffic



[http://blog.nj.com/ledgerupdates\\_impact/2007/11/large\\_traffic.jpg](http://blog.nj.com/ledgerupdates_impact/2007/11/large_traffic.jpg)

# Exposure: Traffic-related air pollution (TRAP)



Inside mask mean PN=43,921 +/- 3602

Mean PM<sub>2.5</sub> = 21.8 +/- 2.4

# Changes in Inflammation after a Turnpike Ride

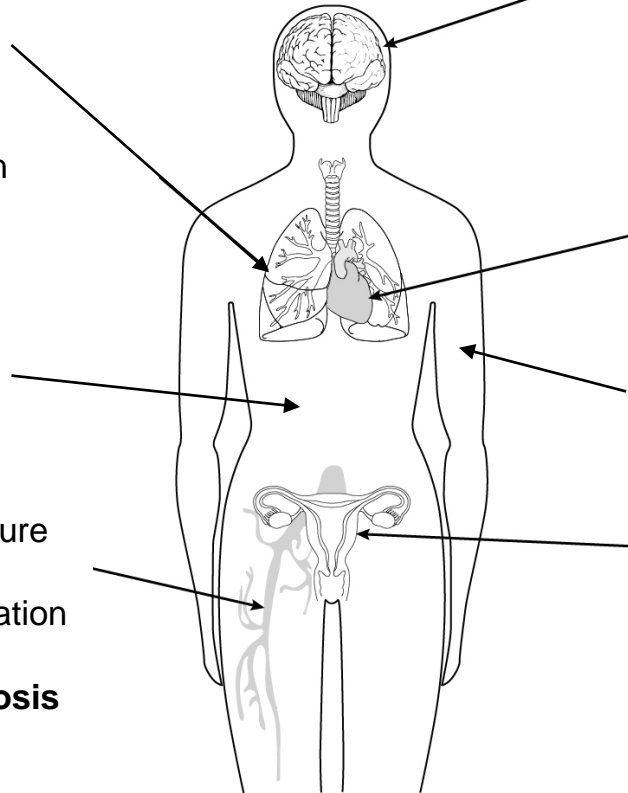
- 30% increase in a measure of lung inflammation
- Blood vessels of healthy controls behave like blood vessels from diabetics
- These human studies are consistent with the findings of the traffic and MI epidemiology studies.
- These biological results contribute to evidence that (diesel and other) traffic pollution rapidly increases risk for heart attacks
- Long term effects blood vessels are also seen
- Other studies have shown that these effects may be reversible with lowering of pollution

# EMERGING TARGETS FOR AIR POLLUTION

- **Respiratory Disease Mortality**
- **Respiratory Disease Morbidity**
- **Lung Cancer**
- **Pneumonia**
- Rhinitis
- Airway inflammation
- Decreased lung function
- Decreased lung growth

- Insulin Resistance
- **Type 2 diabetes**
- **Type 1 diabetes**
- Bone metabolism

- Changes in blood pressure
- Endothelial dysfunction
- Increased blood coagulation
- Systemic inflammation
- **Deep Venous Thrombosis**



- **Stroke**
- Neurological development
- Mental Health (anxiety / depression)
- **Neurodegenerative diseases**

- **Cardiovascular Disease Mortality**
- **Cardiovascular Disease Morbidity (heart attack)**
- Changes in Heart Rate Variability
- ST-Segment Depression
- Skin Aging

- **Premature Birth**
- **Decreased Birth Weight**
- Decreased foetal growth
- In uterine growth retardation
- Decreased sperm quality
- Preclampsia