

Heart disease patients advised to avoid being outside in rush hour traffic

8 December 2014

Heart disease patients have been advised to avoid being outside during rush hour traffic in a paper published today in *European Heart Journal*. The position paper on air pollution and cardiovascular disease was written by experts from the European Society of Cardiology and also recommends decreasing the use of fossil fuels.

Professor Robert F. Storey, corresponding author of the paper, said: "More than 3 million deaths worldwide are caused by air pollution each year. Air pollution ranks ninth among the modifiable disease risk factors, ahead of low physical activity, high sodium diet, high cholesterol and drug use."

He added: "There is now ample evidence that air pollution is associated with [cardiovascular morbidity](#) and mortality. It not only makes existing heart conditions worse but also contributes to development of the disease. Avoiding air pollution where possible may help to reduce cardiovascular risk and cardiologists should incorporate this information into lifestyle advice for their patients. We also need to increase pressure on policy makers to reduce levels of air pollution."

Up to one-third of Europeans who live in urban areas are exposed to [air pollution levels](#) above European Union (EU) standards. But using the more stringent science-based criteria from the World Health Organization (WHO), around 90% of Europeans are exposed to levels that are damaging to health.

The paper recommends the following actions to reduce exposure to air pollution:

- Travel by walking, cycling, and public transportation in preference to car or motorbike
- Avoid inefficient burning of biomass for domestic heating
- Avoid walking and cycling in streets with high traffic intensity, particularly during rush

hour traffic

- Exercise in parks and gardens, but avoid major traffic roads
- Limit time spent outdoors during highly polluted periods, especially infants, elderly, and those with cardiorespiratory disorders
- Consider ventilation systems with filtration for homes in high pollution areas.

People with or at high risk of cardiovascular disease are particularly urged to follow this advice. They should also ensure that they take their prescribed medication for primary or secondary prevention of cardiovascular disease, which will help to combat the potential effects of air pollution exposure.

There is a two way interaction between air pollution and [cardiovascular risk](#) factors, state the authors. Obese people and those with diabetes may be at higher risk of the cardiovascular effects of pollution, while [air pollutants](#) may exacerbate and instigate the development of risk factors such as high blood pressure and impaired insulin sensitivity. The authors state: "The public health implications that air pollution might be a ubiquitous environmental risk factor for hypertension and diabetes are enormous."

The role of indoor air pollution should not be downplayed, warn the authors. Outdoor air pollution infiltrates buildings and most exposure typically occurs indoors. "Indoor air quality in homes, schools, working places and community sites is not a trivial problem in Europe," state the authors.

They point out that [fossil fuels](#) are a major source of air pollution and the major source of greenhouse gases: "Moving away from the use of fossil fuels for energy production will result in major benefits to human health, both from reduced exposure to air pollution and from mitigation of climate change."

Prof Storey said: "Policy makers have an important

role to reduce outdoor pollution in order to limit indoor pollution where much of the exposure occurs. Apart from reducing their personal contributions to outdoor pollution, there is not much that individuals can do about this unless they invest in systems to filter the air they breathe indoors."

The paper adds that planning authorities should be encouraged or required to incentivise housing developments that are a reasonable distance from heavily congested roads and polluting industries.

Prof Storey concluded: "Air pollution should be considered one of the major modifiable risk factors to prevent and manage cardiovascular disease. Individuals, especially those with or at risk of [cardiovascular disease](#), can take measures to reduce their exposure and doctors should include these in lifestyle advice. Policy makers urgently need to reduce levels of air pollution and this should be backed up by legislation."

More information: Expert position paper on air pollution and cardiovascular disease. *European Heart Journal*. DOI: [10.1093/eurheartj/ehu458](https://doi.org/10.1093/eurheartj/ehu458)

Provided by European Society of Cardiology

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