Air quality and lung health – the risks

How serious are the risks from air pollution?
Exposure to air pollution knocks almost one year off the average European’s life.

Air pollution currently causes almost 500,000 premature deaths across Europe every year.

Is breathing clean air important?
Extra life gained per person if air pollution in European cities met health guidelines*

<table>
<thead>
<tr>
<th>City</th>
<th>Extra Life Gained</th>
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<tbody>
<tr>
<td>Bucharest</td>
<td>22.1 months</td>
</tr>
<tr>
<td>Barcelona</td>
<td>13.7 months</td>
</tr>
<tr>
<td>Paris</td>
<td>5.8 months</td>
</tr>
<tr>
<td>London</td>
<td>2.5 months</td>
</tr>
<tr>
<td>Dublin</td>
<td>0.4 months</td>
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</tbody>
</table>

If air pollution in European cities were reduced to World Health Organization air quality guideline* levels, people would live longer – in some cases by almost 2 years.

*Fine particulate (PM2.5) levels of 10µg/m³, extra life per person aged 30 and over. Sources: Aphekom 2011, European Environment Agency.

Is air pollution as dangerous as smoking?
Air pollution can be as dangerous as passive smoking.

Living along a busy road carries about the same risk as passively smoking 10 cigarettes per day.

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Air pollution</th>
<th>Smoking</th>
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<tbody>
<tr>
<td>Life lost</td>
<td>Almost 1 year per average European</td>
<td>10 years per active smoker</td>
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</table>

Sources: European Lung White Book, Van der Zee et al 2016, WHO.
What are the effects of air pollution on children?

Babies
Exposure to air pollution during pregnancy is associated with low birth weight and preterm birth


Children
Children living in polluted areas are more likely to suffer from coughs, wheezes and asthma

Teenagers
Children growing up in polluted areas are more likely to develop low lung function as teenagers

What is the impact of poor air quality on people with lung conditions?
People with lung conditions, such as asthma or chronic obstructive pulmonary disease (COPD), the elderly and infants are most at risk from air pollution

Short term high air pollution levels can:

- Worsen symptoms such as coughing, wheezing and shortness of breath
- Increase the number of hospital visits for lung conditions
- Increase the risk of dying from lung conditions

At-risk patients should:

- Check the local air quality online or sign up to a pollution alert service
- Avoid exercising outdoors when pollution levels are high
- Come back and see your doctor if symptoms persist or worsen

*An estimated 1% increase for every 10µg/m³ increase in particulate (PM10) levels. Sources: Atkinson et al 2001, Peacock et al 2011

Should people continue to exercise outside if they are worried about air quality?

YES!

Ways people can reduce their air pollution exposure:

- Choose back roads
- Exercise in green spaces
- Avoid exercise during rush hour or when pollution levels are high

The benefits of exercise outweigh the risks from air pollution
Source: Hartog 2010

Find out more at: www.healthylungsforlife.org

This document was produced with the aim of helping healthcare professionals explain the risks of poor air quality to their patients. It was produced by the European Respiratory Society (ERS) Environment and Health Committee and the European Lung Foundation (ELF) as part of the Healthy Lungs for Life campaign. This material was compiled with the help of Professor Bert Brunekreef and Professor Jonathan Grigg.