

# 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

Source: WHO

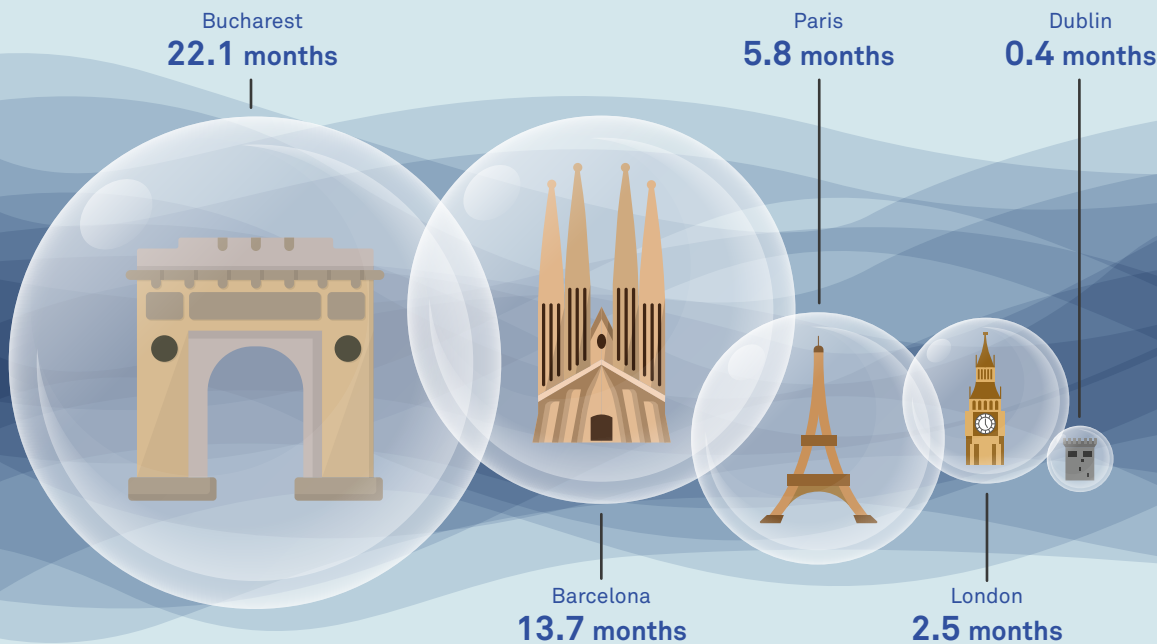


Air pollution currently causes almost **500,000** premature deaths across Europe every year

Source: European Environment Agency

## Is breathing clean air important?

Extra life gained per person if air pollution in European cities met health guidelines\*



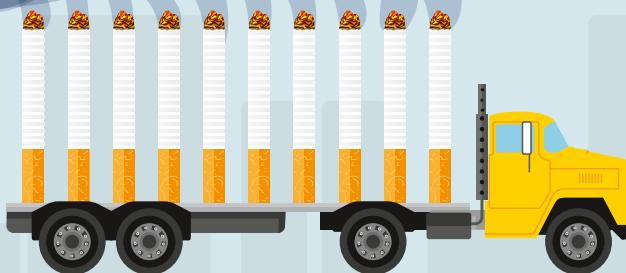
If air pollution in European cities were reduced to World Health Organization air quality guideline\* levels, people would live longer – **in some cases by almost 2 years**

\*Fine particulate (PM2.5) levels of 10µg/m<sup>3</sup>, 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**



## But active smoking is much more dangerous

Risk factor	Air pollution	Smoking
Life lost	Almost 1 year per average European	10 years per active smoker

## 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

Sources: Gauderman et al 2004, Gehring 2013, Pedersen et al 2013, Shah et al 2011

## 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:

### At-risk patients should:

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

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/m<sup>3</sup> 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?

### Ways people can reduce their air pollution exposure:

**YES!**



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



ERS ELF

Find out more at: [www.healthylungsforlife.org](http://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.