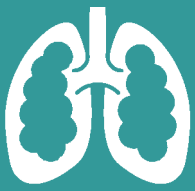
INFORMATION LEAFLET:

## INDIVIDUALS AND FAMILIES CONCERNED ABOUT LUNG CANCER

# AIR POLLUTION AND HEALTH



*New findings from the EU-wide research project 'European Study of Cohorts for Air Pollution Effects' (ESCAPE) make raising awareness of the effects on health of exposure to air pollution even more urgent. This leaflet developed by the ESCAPE project in collaboration with the Health and Environment Alliance (HEAL) explains the latest news on the links between outdoor air pollution and lung cancer. It also provides tips on cancer prevention.*

HEAL
*Promoting environmental policy that contributes to good health*

ESCAPE

## WHAT DOES THE LATEST RESEARCH SHOW?

The EU-wide ESCAPE project found a relationship between particles in the air and lung cancer. These findings combine data from 14 different studies from all over Europe.

*(Raaschou-Nielsen, O. et al: air pollution and lung cancer incidence in 17 European cohorts. Lancet Oncology, 2013).*

## HOW DOES AIR POLLUTION LINK TO LUNG CANCER?

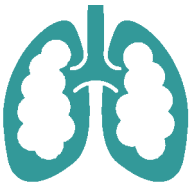
Although air quality in European countries is far better than it was fifty years ago, more people are now exposed to air pollution in cities. Being exposed to dirty air can result in a range of consequences from irritations of the nose, eyes or throat to a need for patients to increase their medication, a visit to their doctor or even hospitalisation. Research over the past 10 years has demonstrated that long-term exposure to even low to moderate levels pollution can lead to heart and lung disease including lung cancer.

Although smoking is by far the biggest risk factor for lung cancer, the ESCAPE study shows that lung cancer is also related to particulate air pollution. The increased risk of lung cancer associated with exposure to air pollution is much smaller than the risk associated with active smoking but it is nevertheless important. This is because the vast majority of Europeans are exposed to particulate matter in air pollution, and therefore even a small increase in the risk of lung cancer may be associated with many cases.

An important source of air pollution are emissions from road traffic. The International Agency for Research on Cancer (IARC), which is part of the World Health Organization (WHO), has recently classified diesel engine exhaust as carcinogenic to humans. Its decision was based on sufficient evidence that exposure is associated with an increased risk of lung cancer. In 2013, IARC also classified outdoor air pollution, and outdoor PM especially, as carcinogenic to humans. The results of the ESCAPE project were important in coming to that decision.

## EFFECTS OF AIR POLLUTION ON THE LUNGS

The respiratory effects of air pollution depend on; the type and mix of pollutants; the concentration in the air; the amount of time you are exposed to the pollutant; how much of the pollutant you breathe in; and how much of the pollutant penetrates your lungs.



Large particles of air pollutants can affect the upper airways of the lungs in particular, whereas smaller particles can reach the smaller branches in the lungs and the tiny air sacs deep in the lungs. These particles lead to irritations and inflammations.

### What causes air pollution?

Air pollution comes from transport, coal and other industrial power plants, industry, ships and from agricultural production, but also from natural sources such as wildfires. Pollutants in the air are often invisible, but they can have serious effects on our health.

## TIPS ON REDUCING EXPOSURE TO AIR POLLUTION

Checking the daily air quality forecasts for your city or town (e.g. http://watch.eyeonearth.org/). Use this information to plan your activities.

Avoiding outdoor activities near busy roads especially during rush hour. When walking or doing sports consider alternative routes with lower levels of pollution.

## KEEP INDOOR AIR HEALTHY

Most children and adults are indoors most of the time. The air quality outdoors is a key determinant of the air we breathe indoors too. **Indoor air can be improved by ensuring that:**

- There is no smoking indoors
- Rooms are regularly aired during times of low pollution and cleaned to remove dust and mould
- Air freshener sprays are avoided and chemical cleaning products are only used where necessary.

## JOIN A SUPPORT GROUP

Patient organisations have good practical tips for you. Find your local patient group

- http://www.ecpc-online.org/
- http://www.european-lung-foundation.org/16505-patient-organisations.htm
- http://www.womenagainstlungcancer.eu/EN/index.php

## WHAT CAN I DO TO REDUCE POLLUTION LEVELS AND PREVENT DISEASE?

Everyone can contribute to cleaner air and improve their overall health by:

- Reducing car use and walking and cycling more – but try to walk and cycle away from busy roads

- Switching to clean energy: support renewable energy schemes and avoid wood burning in your house, or open fires, as these contribute to bad air.

**All these initiatives also help tackle climate change as they help lower carbon emissions.**

**ESCAPE** - European Study of Cohorts for Air Pollution Effects – investigated the long-term effects of air pollution on a broad range of chronic conditions – asthma, allergies in children; adult respiratory and cardiovascular disease; cancer – and life expectancy. Funded by the EU, the project brought together over 20 leading research groups on air pollution and health from 15 countries to analyse over 30 cohort studies including some 900,000 subjects. Cohort studies follow a population over time and ESCAPE focused on how different levels of exposure to air pollution affected people's health.

SEVENTH FRAMEWORK PROGRAMME

This programme is implemented with the support of the European Union.
The contents of this publication are the sole responsibility of HEAL and the ESCAPE project and can in no way be taken to reflect the views of the European Union.

# ACT!

### Ask authorities to act

Everyone has a right to clean air. Yet, most Europeans breathe air that is much dirtier than the standards recommended by the WHO. Contact your local, national and European decision-makers and ask them to strengthen EU air quality standards and measures to reduce air pollution at the source.

**More information and contact us:**

ESCAPE: www.escapeproject.eu

Health and Environment Alliance (HEAL): www.env-health.org

European Respiratory Society (ERS): Air quality and health p 49-53, www.ersnet.org/images/stories/pdf/web-AQ2010-ENG.pdf

European Lung Foundation, Health effects of outdoor air pollution, http://www.european-lung-foundation.org/16539-health-effects-of-outdoor-air-pollution.htm#par38083

European Respiratory Society (ERS): 10 principles for clean air http://www.ersnet.org/images/stories/DOC/ERS10CleanAirPrinciples.pdf

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