



An Roinn Sláinte  
Department of Health

# THE IMPACT OF AIR QUALITY ON HEALTH AND WELLBEING IN IRELAND

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“Health is a personal, social and economic good, and the health and wellbeing of individuals, and of the population as a whole, is Ireland’s most valuable resource.”





## Vision

*A Healthy Ireland, where everyone can enjoy physical and mental health and wellbeing to their full potential, where wellbeing is valued and supported at every level of society and is everyone's responsibility*

## Goals

*Increase the proportion of people who are healthy at all stages of life*

*Reduce health inequalities*

*Protect the public from threats to health and wellbeing*

*Create an environment where every individual and sector of society can play their part in achieving a healthy Ireland*

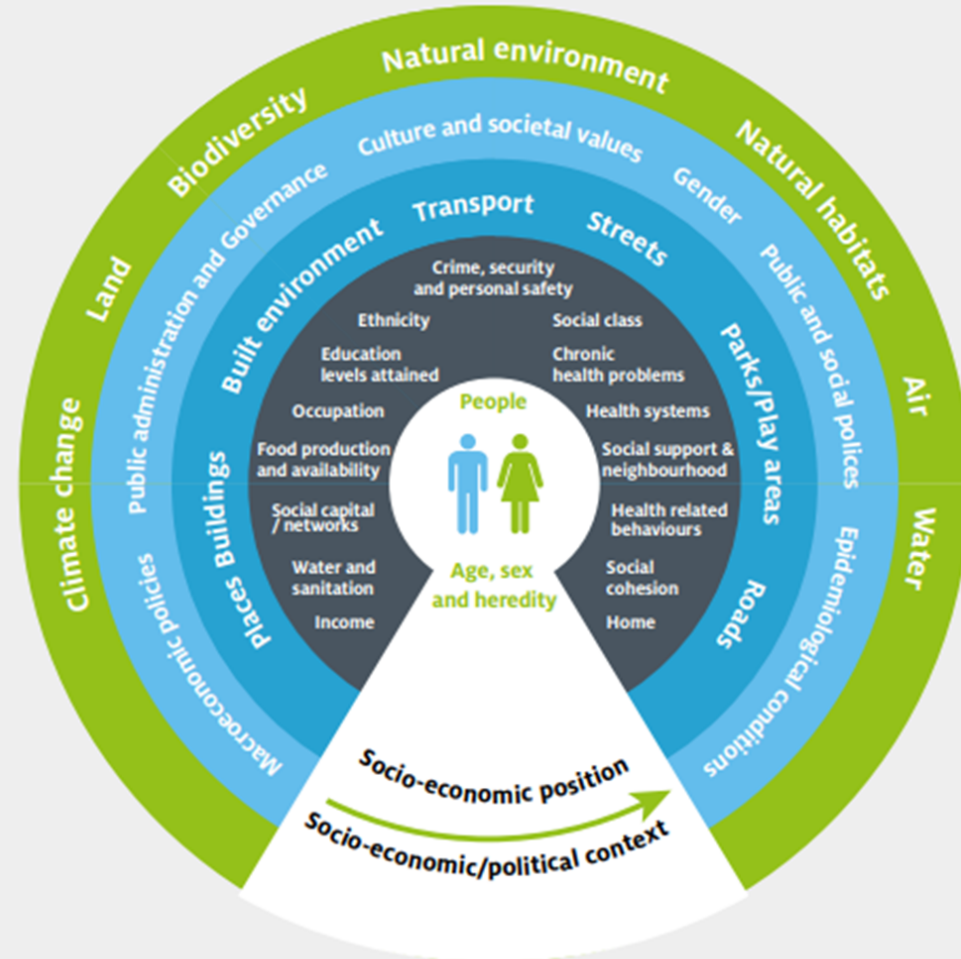
“People’s opportunities for health are influenced by factors outside of the health and social care system. They lie in the circumstances in which people are born, grow, live, work, and age: the social determinants of health. These are the ‘causes of the causes’ of ill health and they can enable individuals and societies to flourish, or not. Creating a healthier population requires greater action on these issues. This includes addressing the role of both the physical built environment and the social factors which shape neighbourhoods and places.”

**(Putting Health into Place, NHS 2019)**



## Determinants of Health

(Adapted from Dalghren and Whitehead, 1991 and Grant and Barton, 2006)





# Social Determinants



## Environmental Factors

- Air Quality Index
- Water Quality
- Radon

## Socio-Economic Factors

- Long-term unemployment
- Jobless Households
- Education: Retention
- Education: Attainment
- Literacy and Numeracy
- Consistent Poverty Rate
- Inequality of Income



**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

- **3.9.1** Mortality rate attributed to household and ambient air pollution

**7.1** By 2030, ensure universal access to affordable, reliable and modern energy services

- **7.1.2** Proportion of population with primary reliance on clean fuels and technology

**11.6** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- **11.6.2** Annual mean levels of fine particulate matter (e.g. PM<sub>2.5</sub> and PM<sub>10</sub>) in cities (population weighted)





# Air Quality in Ireland 2018:



3.9.1 Mortality rate attributed to household and ambient air pollution is: 1,180 per annum

7.1.2 Proportion of population with primary reliance on clean fuels and technology >95%

11.6.2 Annual mean levels of fine particulate matter (e.g. PM<sub>2.5</sub> and PM<sub>10</sub>) in cities (population weighted

Pollutant	Number of stations where monitored 2018	EU legal limit values	WHO Air Quality Guideline (AQG) level or EEA reference level
PM <sub>10</sub>	26	No exceedances	Above WHO AQG level at 9 of the 26 stations
PM <sub>2.5</sub>	20	No exceedances	Above WHO AQG at 1 of the 20 stations
NO <sub>2</sub>	17	No exceedances	Above WHO hourly AQG level at 1 station
Ozone	15	No exceedances	Above WHO AQG level at 13 stations
PAH	4	No exceedances	Above EEA reference level at 3 stations
Dioxins	37	No exceedances	n/a
All other pollutants		No exceedances	Below AQG levels

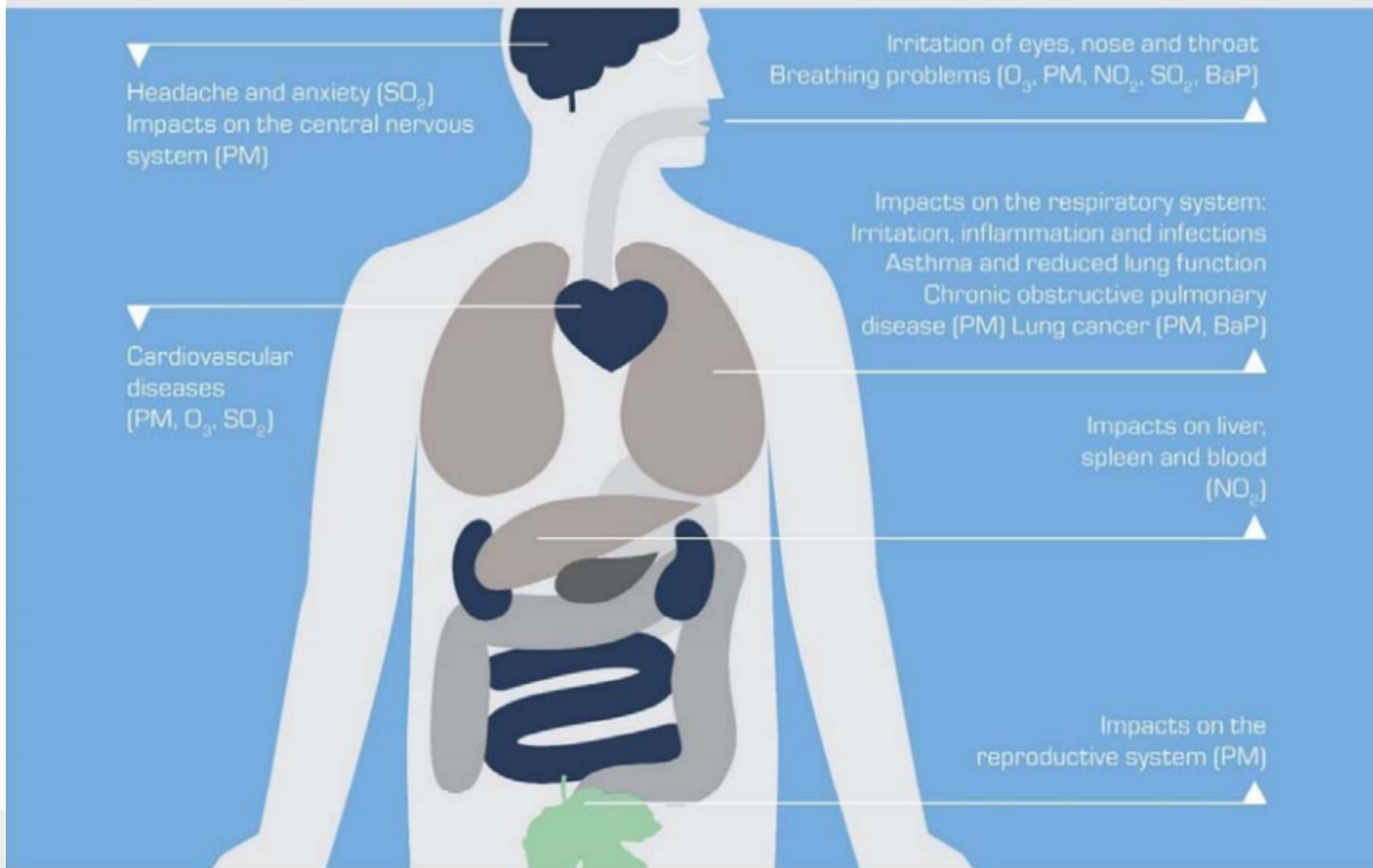


Air pollution is the largest single  
environmental risk to health  
(WHO 2012)



## Health impacts of air pollution

Air pollutants can have a serious impact on human health. Children and the elderly are especially vulnerable.



## Significant Impact:



- Mortality – 1,180 premature deaths in Ireland per year due to poor air quality
- Chronic Disease – stroke, heart disease, lung cancer, and respiratory diseases (asthma, COPD)
- Child growth and development – premature and low birthweight, impedes child brain development, children are less able to metabolise and detoxify pollutants, and lungs less developed.
- Mental Health and Subjective Wellbeing – studies show poor air quality can have a negative impact on mental health and how people perceive their wellbeing.
- Productivity – air pollution has been found to have a significant impact on worker productivity and mental function.
- Educational – students exposed to air pollution do less well at exams than those who have not been exposed
- Greater impact on disadvantaged communities – more likely to be exposed to poor air quality resulting from fuel poverty choices
- High impact on those who are participating in physical activity

## Challenges:

- High Impact but Insidious issue
- Complex – variety of polluter types and deep structural issues across government and society (housing stock, transportation etc)
- Requires a joined up multisectoral response and significant behavioural/cultural shifts by the entire population



# Solutions have Co-Benefits



Increase use of non emitting modes of transport such as cycling & walking

Increased physical activity and decreased obesity

Improve housing quality and home heating systems

Address energy poverty

Reduced use of primary and acute care (Warmth and Wellbeing)

Social connection

Built Environment – design for less car centric

Increased social connection

Increased physical activity and decreased obesity

Improved water quality

Change food production emphasis

Increased consumption of plant based diet can reduce chronic disease (cancers and heart disease)

# Thank You



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