Air Pollution and Health

- Health impacts of air pollution
- COVID-19 and air pollution
- Main sources of air pollution in London
- Measures needed
Premature deaths due to indoor & outdoor pollution

Air pollution - the facts

Regional estimates according to WHO regional groupings:

- Over 2 million deaths in South-East Asia Region
- Over 2 million deaths in Western Pacific Region
- Nearly 1 million deaths in Africa Region
- About 500,000 deaths in Eastern Mediterranean Region
- About 500,000 deaths in European Region
- More than 300,000 deaths in the Region of the Americas

SOURCE: UN/WHO
Illness and quality of life

- Death
- Hospital Admissions
- Doctor visits
- Asthma attacks, medication use, symptoms
- Lung function changes, immune cell responses, heart rate or heart rate variability responses

Proportion of affected population

Severity

Quality of life
Increased vulnerability

- 21% are due to pneumonia
- 20% from stroke
- 34% from ischaemic heart disease
- 19% from chronic obstructive pulmonary disease (COPD)
- 7% from lung cancer
Impacts of Air Pollution across the Life Course

- Low birth weight
- Smaller lungs
- Increased risk of chronic disease
- Increased vulnerability
- Acute respiratory exacerbations
- Premature death
- Quality of Life
- Limiting potential
Air pollution is not a simple thing
It varies with time and place

**NOx background:** Cars (21.6%), LGVs (7.1%), HGVs (8.8%), buses (10.6%).
Total traffic contribution: 48.6%.

**NOx roadside:** Cars (28.3%), LGVs (11.1%), HGVs (10.1%), buses (30.6%).
Total traffic contribution: 80.1%.

**PM$_{2.5}$ background:** Cars (2.9%), LGVs (1.1%), HGVs (0.9%), buses (0.3%), vehicle non-exhaust (5.8%).
Total traffic contribution: 11.0%.

**PM$_{2.5}$ roadside:** Cars (7.0%), LGVs (2.9%), HGVs (2.3%), buses (2.2%), vehicle non-exhaust (14.7%).
Total traffic contribution: 29.1%.

....but what is the important bit?
Reduce everything, or be smart?

- Industry
- Motor vehicles
- Agriculture
- Power generation
- Wood burning
- Aviation

Tire wear
Brake wear
Road dust
SOLUTIONS

Clean Air Zones – by design

Transport for London

Ultra low emission
ZONE

At any time

Clean Air for Health  #AirPollution

World Health Organization
Cleaner Air by Circumstance