



EXPOSURE TO AIR POLLUTION, OUR MENTAL AND PHYSICAL HEALTH

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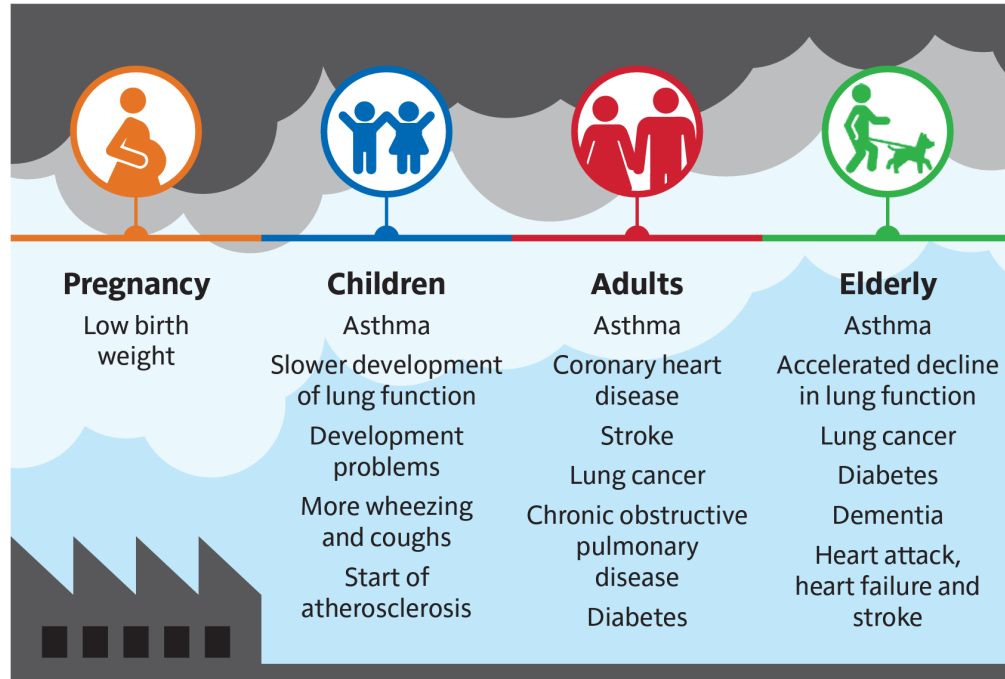
[@loannisBakolis](https://twitter.com/loannisBakolis)



Source: Reddit

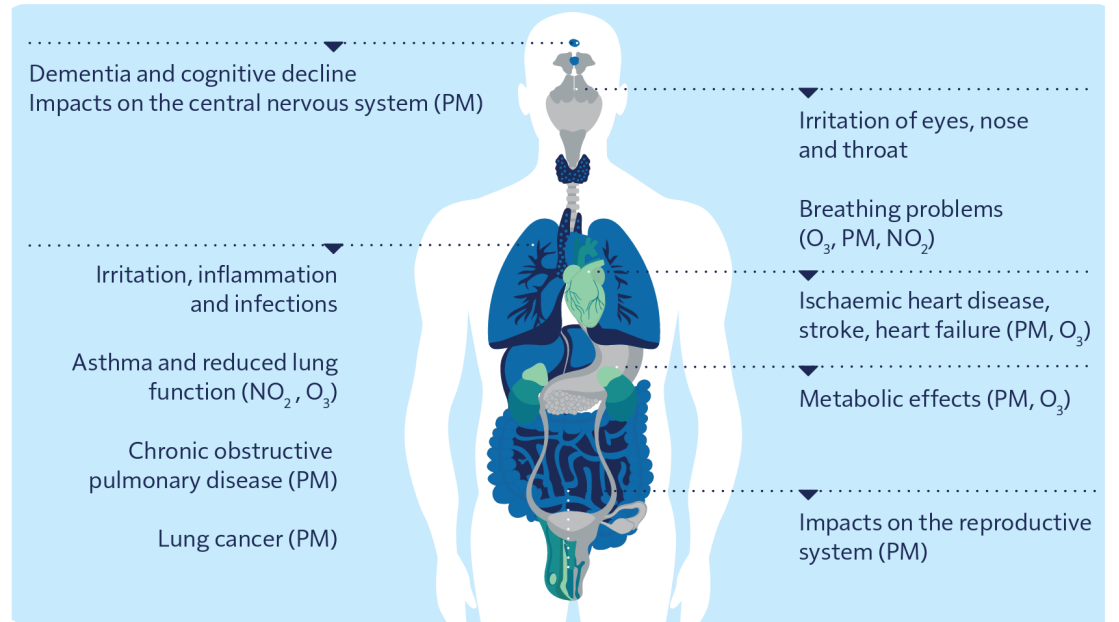


Source: National Geographic



Source: Adapted from Public Health England (2018)⁶

Figure 1: Health effects of air pollution throughout life

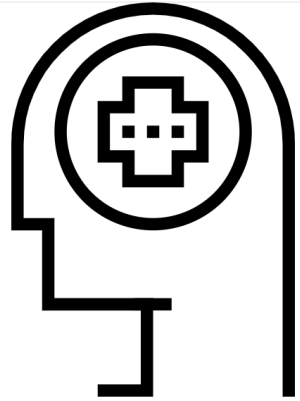


Source: Adapted from EEA (2020)²⁰

Figure 2: Health effects of air pollutants

Source: Chief Medical Officer's annual report 2022

NO HEALTH WITHOUT MENTAL HEALTH



One in every eight people were identified as having a common mental health disorder globally (WHO, 2019)

People with severe mental illness have 10 years reduced life expectancy (Lancet Psychiatry, 2023)



Poor-income households

Childhood trauma

Social isolation

WHAT IS AIR POLLUTION?



- Mobile sources
 - Stationary sources
 - Domestic activities
 - Chemical reactions
 - NO₂
 - PM_{2.5}
-

MECHANISMS

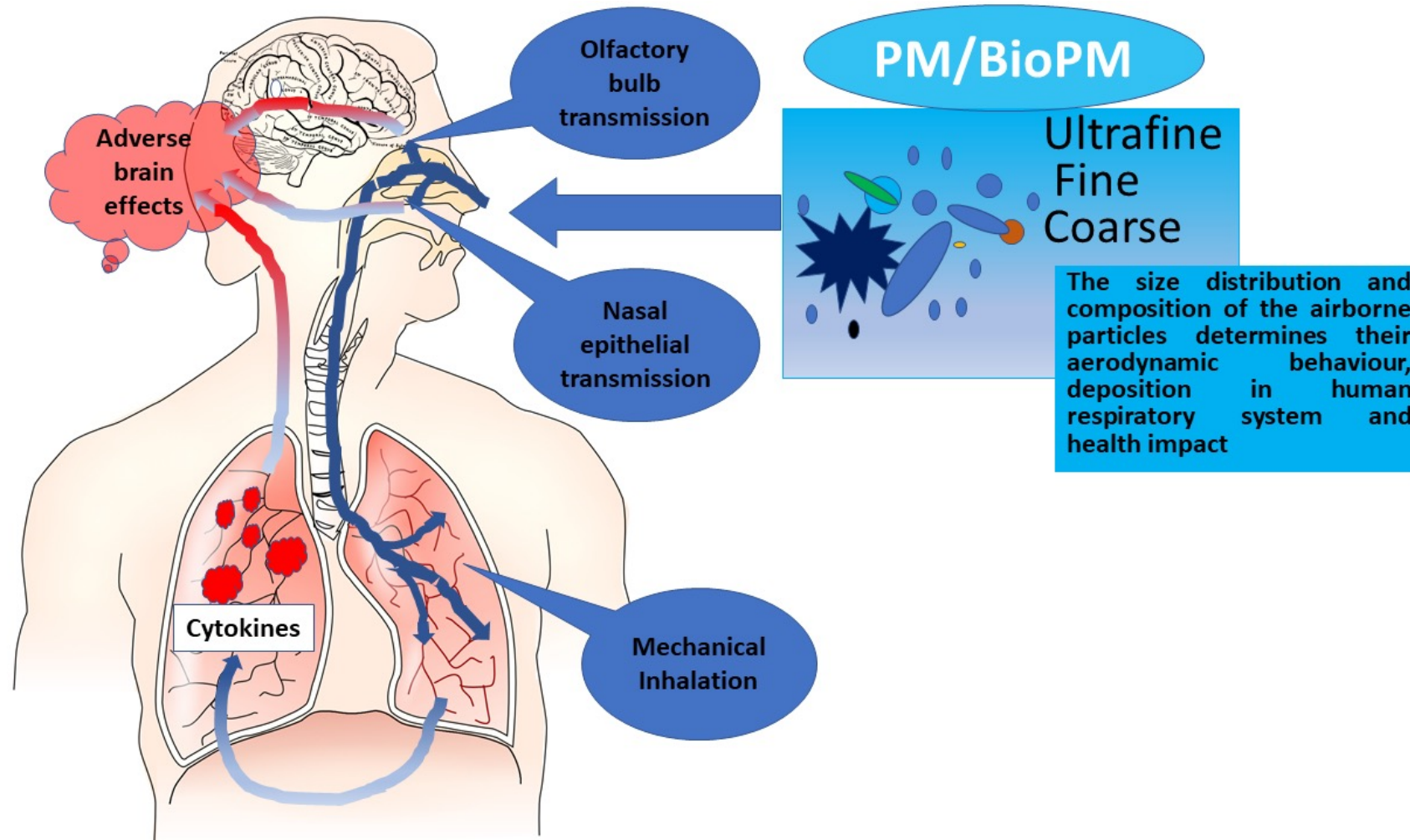


Figure 1: Pollution to Inflammation (adapted from Underwood, E. 2017. The polluted brain. Science, 355, 6323: 342-345).

Air Pollution (Particulate Matter) Exposure and Associations with Depression, Anxiety, Bipolar, Psychosis and Suicide Risk: A Systematic Review and Meta-Analysis

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BACKGROUND: Particulate air pollution's physical health effects are well known, but mental illness have not yet been established. However, there is increasing interest in em

OBJECTIVES: This systematic review aims to provide a comprehensive overview and quantifying quantitative associations between PM and multiple adverse mental health outco

Cognitive decline, dementia and air pollution

A report by the Committee on the Medical Effects of Air Pollutants

Chairman: Professor Frank Kelly

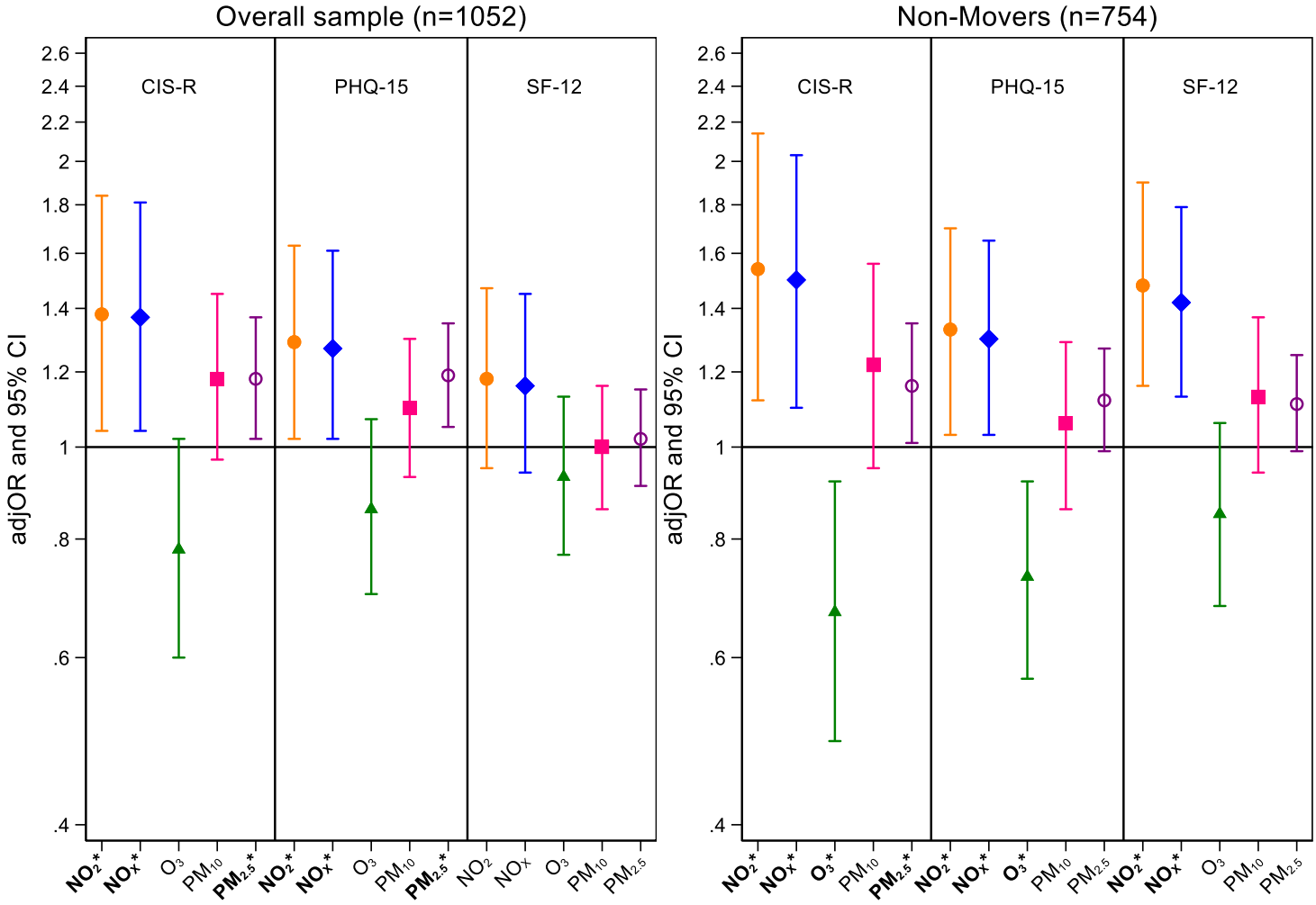
Chairman of Subgroup on Cognitive Decline and Dementia: Professor Robert L Maynard

Is long-term exposure to air pollution associated with common mental disorders?



(Bakolis et al 2021, Social Psychiatry and Psychiatric Epidemiology)

Traffic-related air pollution heightened the risk of common mental disorders



OR: 1.18 (1.02, 1.37) of CMD per 5 micrograms per cubic meter increase in long-term exposure to PM_{2.5}

Is air pollution exposure associated with mental health service-use in psychotic, mood disorders and dementia?

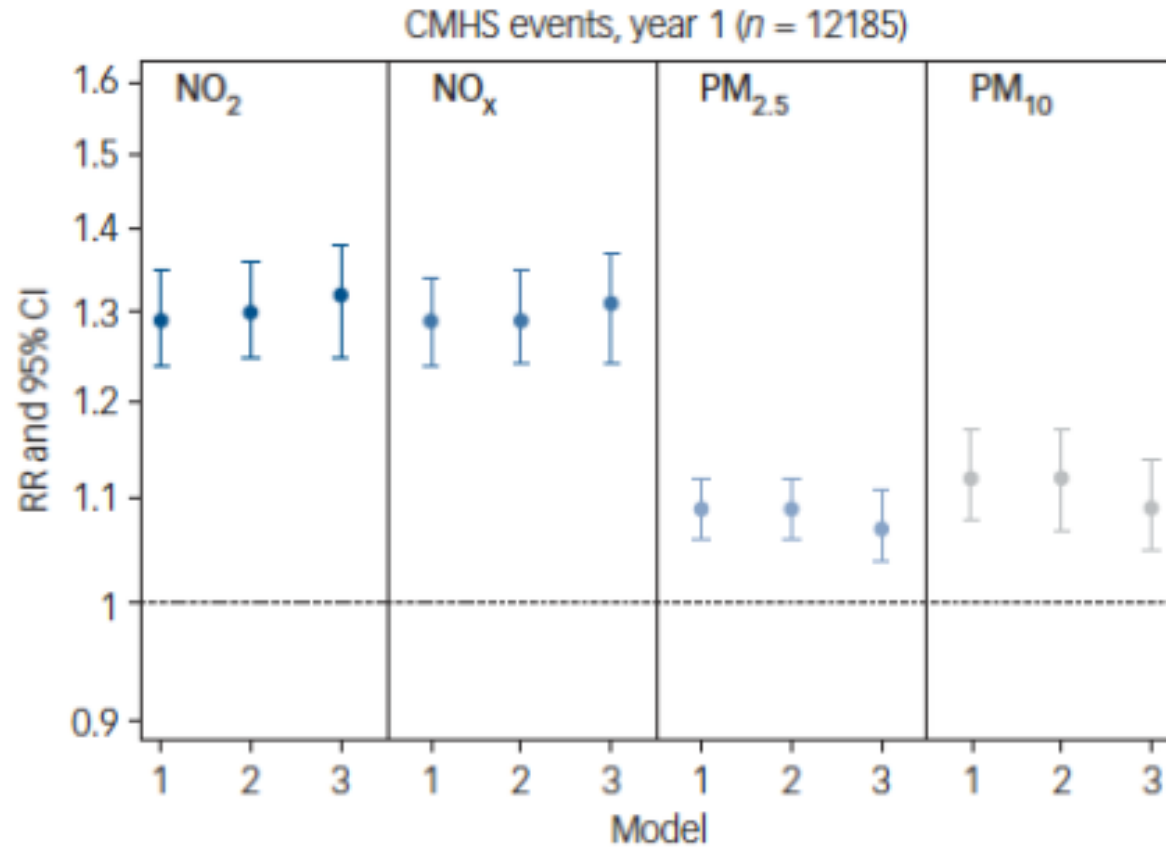


(Newbury et al 2021, British Journal Of Psychiatry)

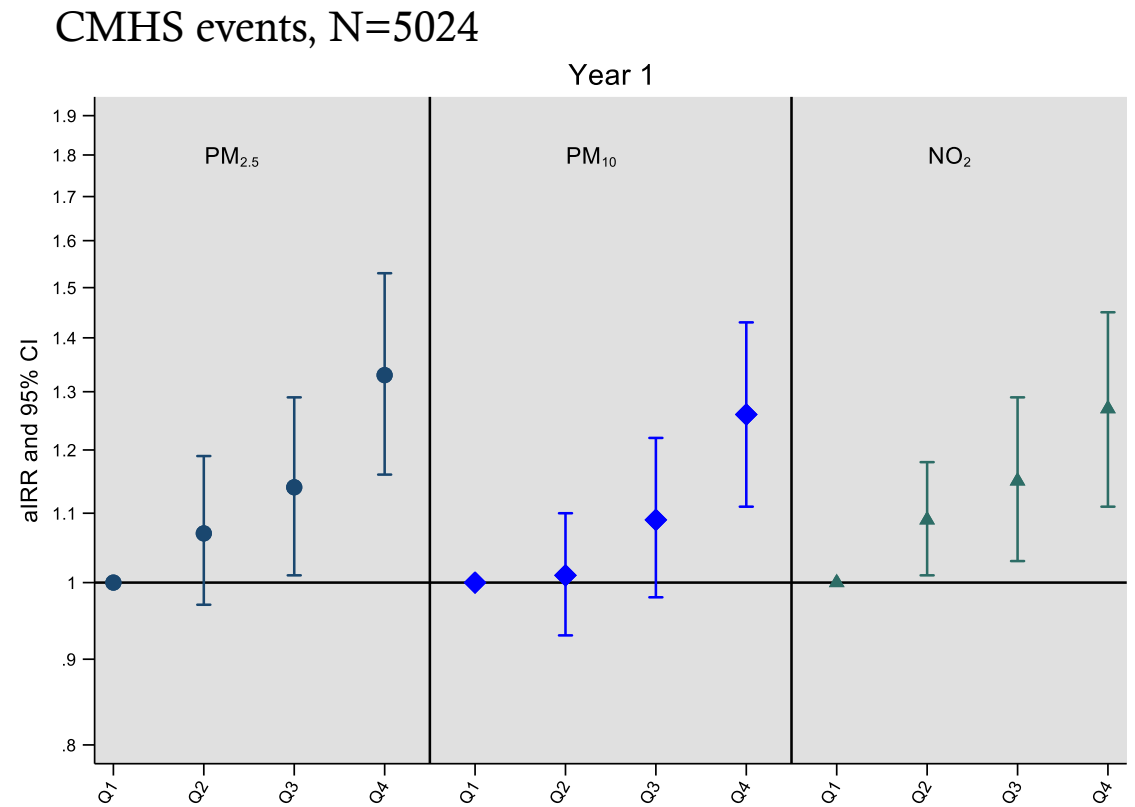
(Ronaldson et al 2023, BMJ Mental Health, under review)

More Community Mental Health Service Use for those exposed to higher pollution

Psychotic and Mood Disorders



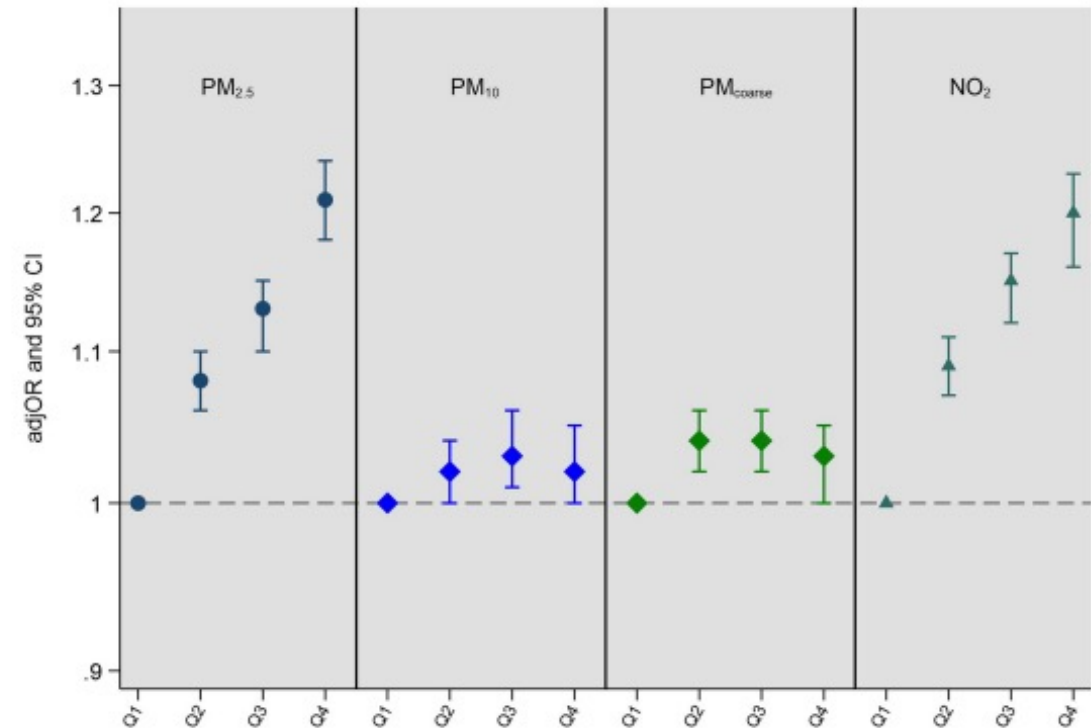
Dementia



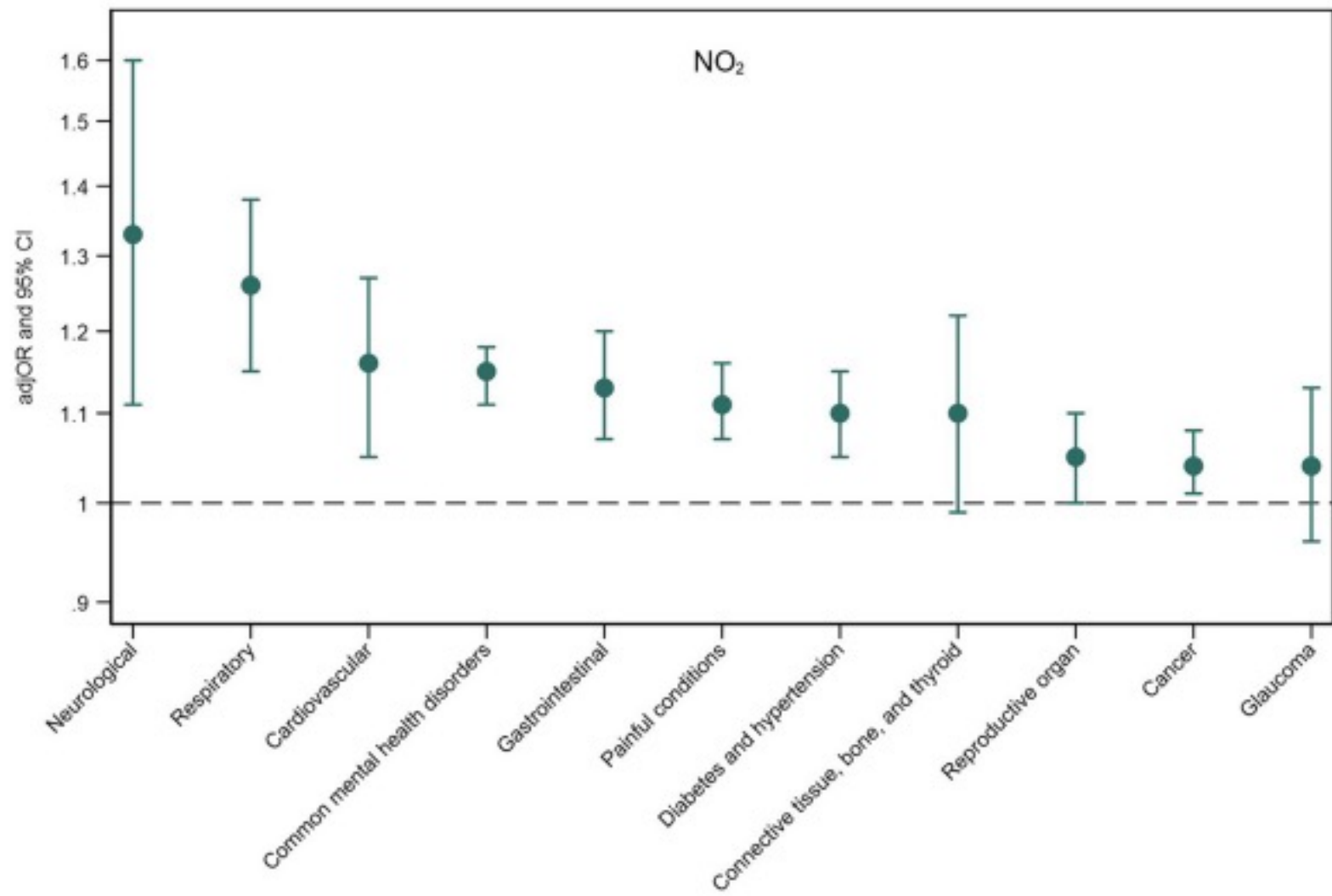
Is air pollution exposure associated with multiple long-term conditions ?

biobank^{uk}

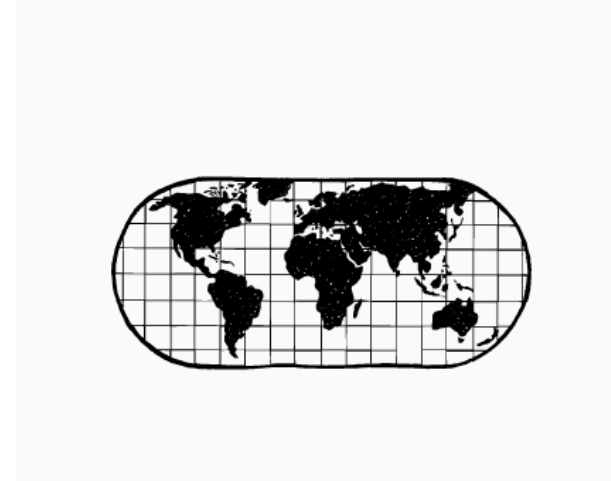
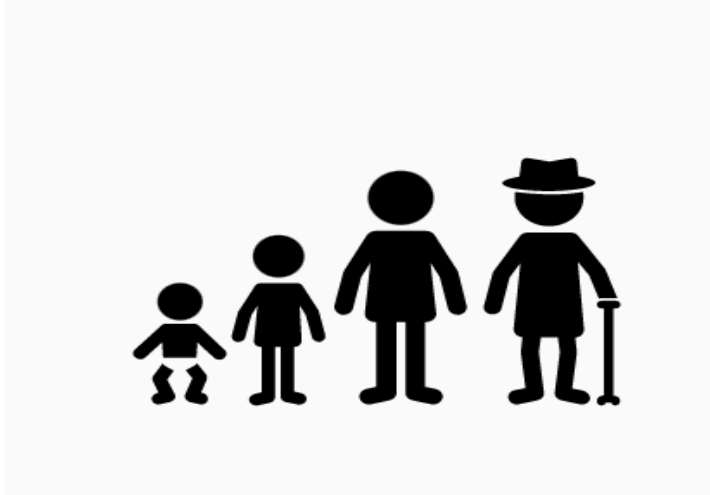
N=364,114 people aged between 40 and 69



(Ronaldson et al 2022, Frontiers of Public Health)



Future Directions



Shall we worry?

Yes, but we should also act

- Ultra Low emission zones
- Low Traffic Neighbourhoods
- Car-less vision of cities
- WHO guidelines

Pollutionwatch
Environment

Gary Fuller

@drgaryfuller

Fri 5 May 2023 06.00 BST



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The evidence is clear: low-emission zones like London's Ulez work

Looking at the health problems caused by air pollution, poorer communities have most to gain



No country, region, city, individual could resolve this alone



Source: Worker's liberty

It's all about team work ...



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