

AIR QUALITY AND HEALTH

DR JACKIE HYLAND
CONSULTANT IN PUBLIC HEALTH MEDICINE
NHS TAYSIDE



THE EVIDENCE

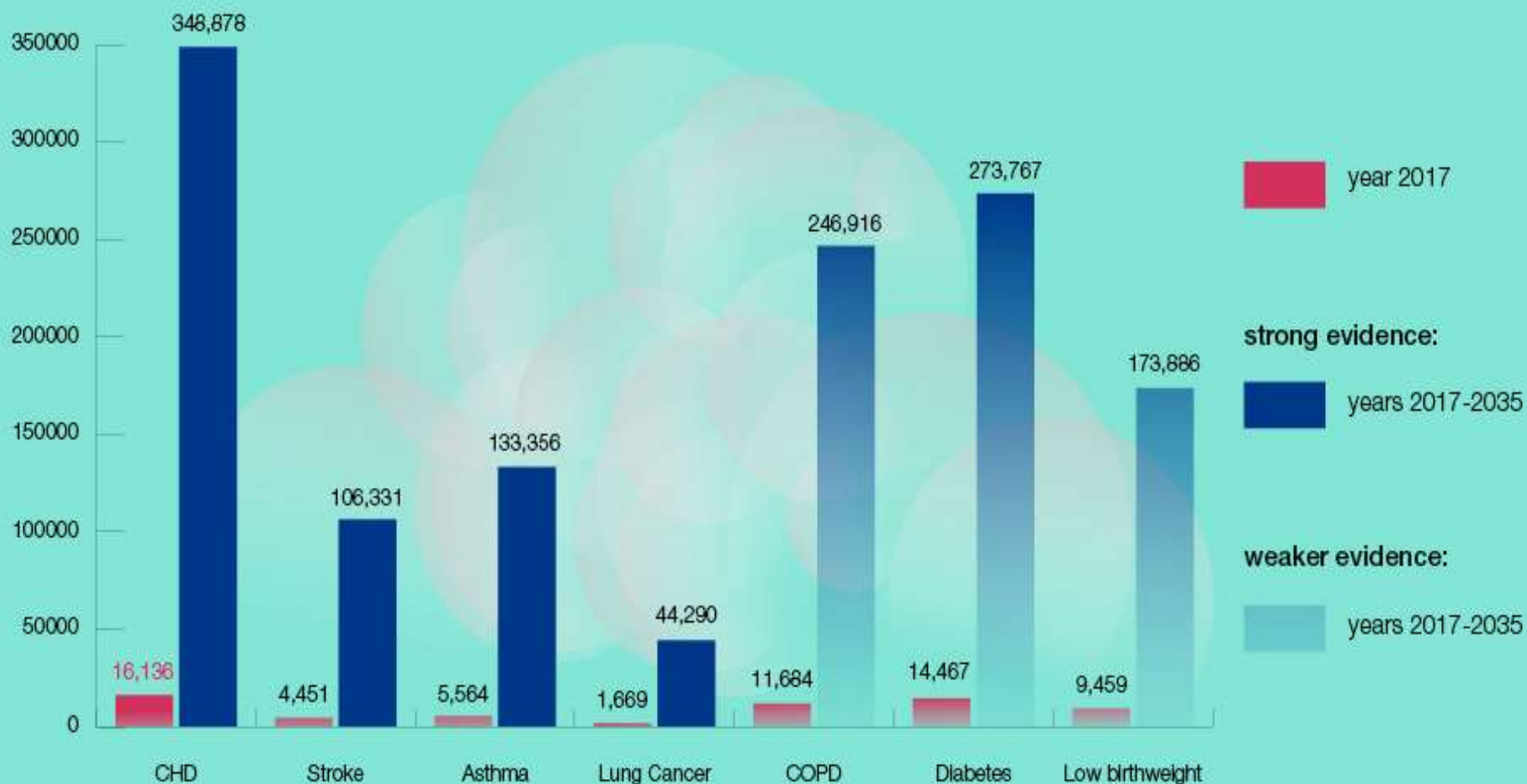
There is compelling evidence that air pollution is:

- ▶ *associated with new onset asthma in children and adults*
- ▶ *contributing to diabetes*
- ▶ *a risk factor for lung cancer.*

RCP and Royal College of Paediatrics and Child Health's 2016 report [Every breath we take: the lifelong impact of air pollution.](#)

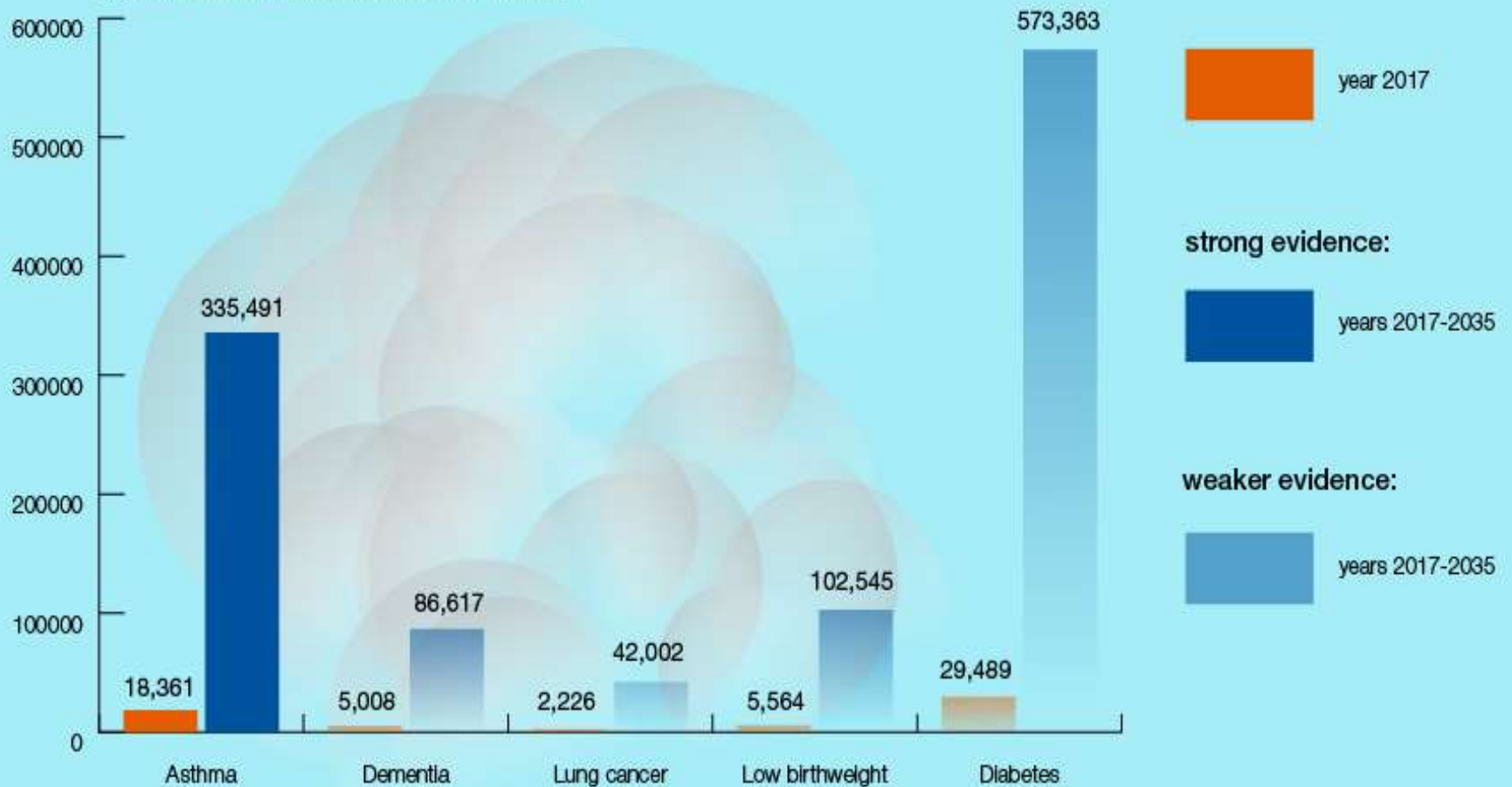
Conditions associated with exposure to PM_{2.5}

Cumulative incidence cases attributable to PM_{2.5} in England by disease and total between 2017 and 2035



Conditions associated with exposure to NO₂

Cumulative incidence cases attributable to NO₂ in England by disease and total between 2017 and 2035



Air pollution affects everyone but there are **inequalities in exposure** and **the greatest impact on the most vulnerable**

older people
(65 and older)



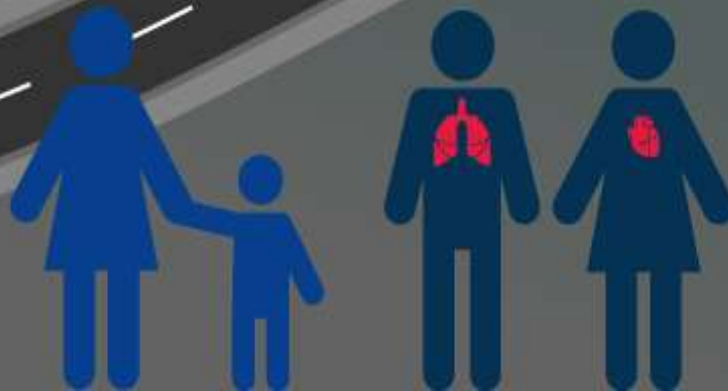
pregnant women



communities with
poorer air quality
(eg. those situated
closer to main roads)



children

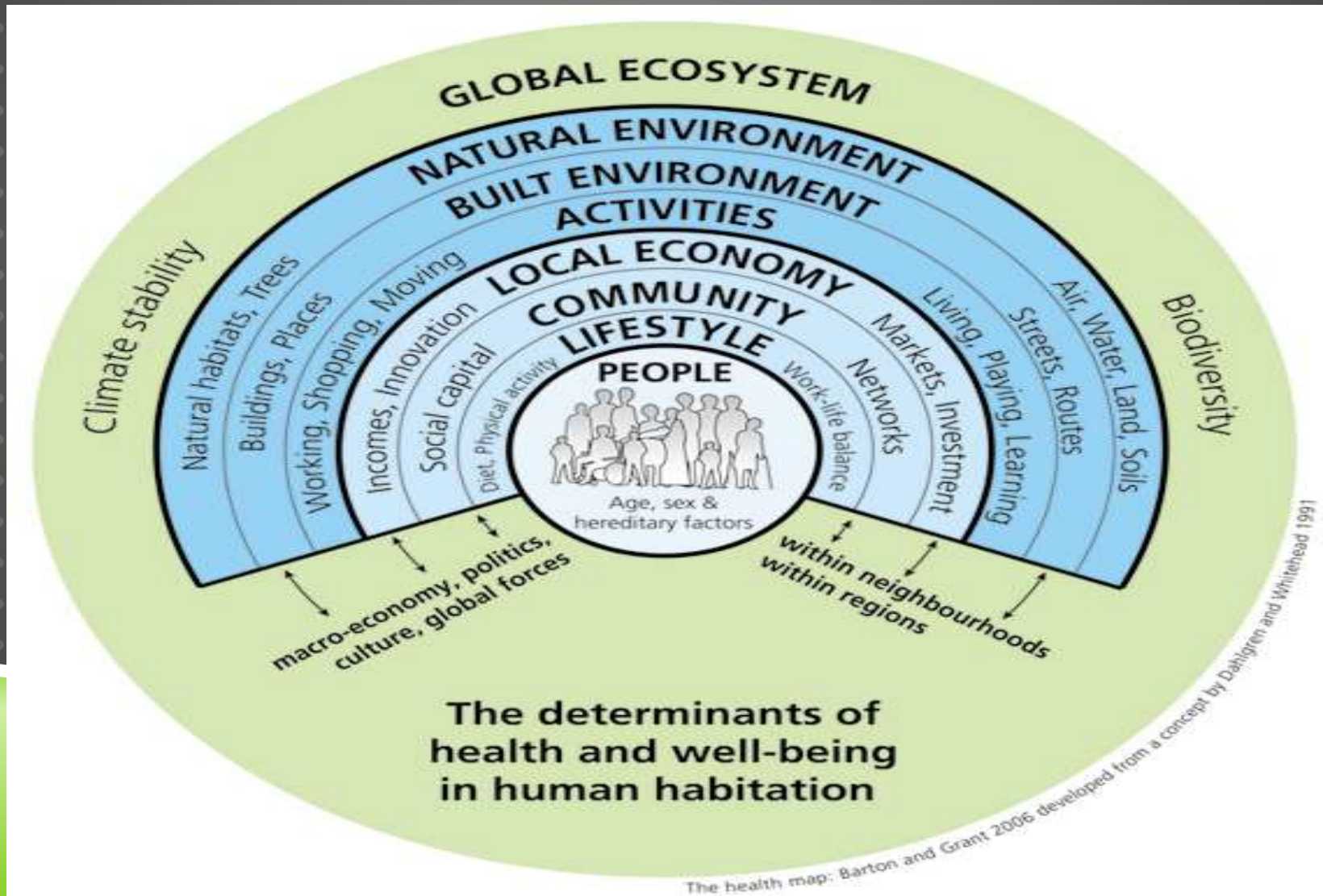


those with
cardiovascular
disease and/or
respiratory disease



THE SETTLEMENT HEALTH MAP

[HTTPS://WWW.HEALTHYURBANDEVELOPMENT.NHS.UK/PROMOTING-HEALTHY-COMMUNITIES/WIDER-DETERMINATES-OF-HEALTH/](https://www.healthyurbandevelopment.nhs.uk/promoting-healthy-communities/wider-determinates-of-health/)



Why travel makes a difference



Walking & cycling

If your journey is **less than a mile** try walking or cycling which is good for our physical and mental health. Switching more journeys to active travel will improve health, quality of life and reduce air pollution

car trips/mile

Distance



- 25 plus
- 5 to 25
- 1 to 5
- less than 1

The school run

41% of trips to schools for 5 - 10 year olds are by car. Cycling or walking to school with your children will help reduce the impact of air pollution. If you do have to drive, then turn off your engine when waiting for your children



Public transport

By taking public transport we are **reducing the number of cars** on the road. Consider walking or cycling to the tram or train and avoid main roads using quieter routes which can help reduce exposure

how we travel

Percentage



- Other
- Cycling
- Rail
- Bus
- Walking
- Car

Our choices can make a difference

The majority of our journeys are by car. By leaving your car at home and choosing to cycle, walk or use public transport, you can help reduce air pollution



Driving

Driving increases pollution through **combustion products or brake and tyre wear.** If you do need to drive avoid morning and evening rush hours if you can to reduce increased congestion

how we get to work

Percentage



- Other
- Bus
- Rail
- Walk
- Car/Van

Change the way you drive

Driving economically, such as **accelerating gently and adhering to speed limits** and ensuring your tyre pressures are correct, saves money by using less fuel, reduces the number of road collisions and reduces air pollution

NATIONAL OUTCOMES FOR SCOTLAND



UN SUSTAINABLE DEVELOPMENT GOALS



<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

CLEAN AIR FOR HEALTH
GENEVA ACTION AGENDA
FIRST WHO GLOBAL CONFERENCE ON AIR POLLUTION AND HEALTH
1 NOVEMBER 2018



GENEVA ACTION AGENDA TO COMBAT AIR POLLUTION

[HTTPS://WWW.WHO.INT/PHE/NEWS/CLEAN-AIR-FOR-HEALTH/EN/](https://www.who.int/phe/news/clean-air-for-health/en/)

- ▶ BreatheLife campaign
- ▶ Burn less in any form
- ▶ Protect the most vulnerable populations
- ▶ Increase access to clean energy and technologies
- ▶ Cities for clean air, good health and better climate
- ▶ Enhance education on air pollution
- ▶ Joint action between the financial, health and environmental sectors
- ▶ Continue the joint effort for harmonized air pollution monitoring

BREATHLIFE

GLOBAL CAMPAIGN FOR CLEAN AIR
MOBILISES COMMUNITIES TO REDUCE THE IMPACT OF AIR
POLLUTION ON OUR HEALTH AND CLIMATE

Recent BreatheLife stories

[Featured](#) [Solutions](#) [Our Network](#) [News](#)



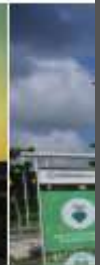
[BreatheLife welcomes first Indian member ...](#)

December 23, 2018
BL Network Member



[London launches world's largest air quality ...](#)

January 28, 2019
BL Network Member



[Breat](#)

January 2
BL Netw

BREATHLIFE CAMPAIGN 2030

[HTTP://BREATHLIFE2030.ORG/](http://breathelife2030.org/)

Home / News and Stories / Press release



31 OCT 2018 | PRESS RELEASE | AIR

Athletics legend Paula Radcliffe joins fight for clean air



KEY THEMES TO ENCOURAGE BEHAVIOR CHANGE

[HTTPS://DOI.ORG/10.1016/J.JTH.2015.03.006](https://doi.org/10.1016/j.jth.2015.03.006)



Create opportunities and promote active travel

Addressing air pollution by providing **good quality infrastructure** and **public transport** and encouraging people **to walk** and **cycle** rather than drive can help people to become fitter and healthier.

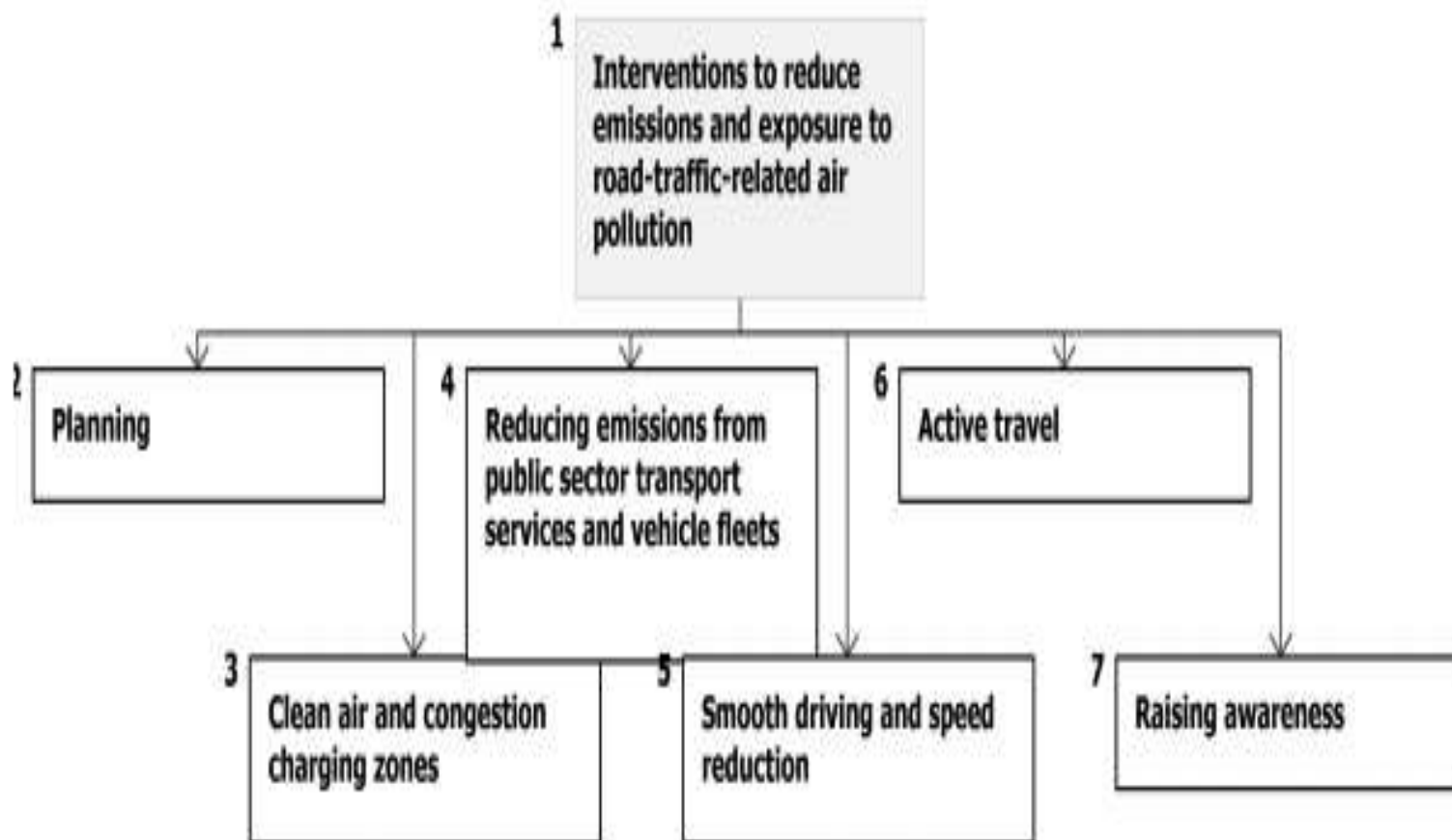


BENEFITS TO HEALTH THROUGH IMPROVEMENTS IN THE LOCAL ECONOMY

Healthy streets are streets that are also good for the local economy. People who arrive at shops on foot spend the most over the course of a week or a month.

- ▶ Gloucester, people who walked to the city centre spent an average of £104 per week compared to £52 spent per week by those arriving by car or van.
- ▶ Cheltenham, people who walked to the town centre spent an average of £91 per week compared to £52 spent by those travelling by car or van.
- ▶ Study of 14 town centres across London people who walked to the town centre spent an average of £86 per week compared to £62 spent by those travelling by car.

Faculty of Public Health <http://www.fph.org.uk/uploads/Briefing%20statement%20-%20Impact%20of%20cars.pdf>



IN SUMMARY

- ▶ Air pollution harms the health of the vulnerable people in society ✓
- ▶ There are multiple gains from taking action to reduce traffic related air pollution ✓
- ▶ We should celebrate success ✓

EMERGING CHALLENGES

▶ Non-traffic-related-outdoor-air-quality:

Power generation, agriculture, waste management (specifically composting), construction, sea ports, domestic gas and solid fuel burning

https://www.nihr.ac.uk/funding-and-support/documents/current-funding-opportunities/phr/18_148%20Air%20Quality%20non-traffic%20comm%20brief%20FINAL.pdf

▶ Indoor air quality: building materials (including fittings and flooring), furnishing, cleaning, candles or diffusers, cooking and smoking, mould, house dust mites, bacteria, pests or pet dander.

<https://www.nice.org.uk/guidance/gid-ng10022/documents/final-scope-2>

▶ Climate change: pollen production, mould, dust storms, cumulative effects of temperature and air pollution on increasingly older population

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5676805/>

*THANK YOU
ANY QUESTIONS?*

