Evidence to the Health and Sport Committee:
Inquiry into the Preventative Agenda: Clean Air

Asthma UK and living with asthma

Asthma UK is the UK’s leading asthma charity. We support the 5.4 million people in the UK with asthma, when they need us the most, and fund world-leading research to find better treatments and ultimately a cure. Our goal is to prevent asthma attacks, especially those that result in emergency hospitalisation and death.

Every 10 seconds someone in the UK is having a potentially life-threatening asthma attack. Shockingly asthma attacks kill 3 people each day and the UK has amongst the highest death rates from asthma in Europe. Most tragically many of these deaths could be prevented.

In our 2016 annual asthma care survey, nearly a third of people said their symptoms prevented them from doing the things they love in their spare time.

Asthma in Scotland

In Scotland, 368,000 people (1 in 14) are currently receiving treatment for asthma. This includes 72,000 children and 296,000 adults; 7.16% of the population of Scotland.

Asthma UK’s Annual Asthma Survey 2017 found that:

- 52.6% of respondents in Scotland (350 of 666) said that air pollution was a trigger for their asthma. This is below the UK-wide figure of 61.6% (4685 of 7611)
- 20.1% (134 of 666) of respondents in Scotland said that air pollution was the hardest trigger to avoid, compared to 25.1% in the UK (1911 of 7611).

Unfortunately, over recent years there has been an increase in asthma deaths in Scotland. National Records of Scotland data found that there were 133 deaths from asthma in 2016 in Scotland— the highest this century - while Information Services Division Scotland determined that there were 5919 emergency admissions for asthma in Scotland in 2015/16².

Air pollution and asthma

Various studies have linked air pollution and specifically traffic-related pollution to the onset of asthma in both children and adults and worsening of symptoms in people with asthma³⁴⁵⁶. From a

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² Data Asthma UK bespoke request.
mechanistic perspective, air pollutants probably cause oxidative injury to the airways, leading to inflammation and an increased risk of potentially life-threatening asthma attacks. Studies have demonstrated a link between air pollution (Particulate Matter (PM)2.5 and Particulate Matter (PM)10) and asthma A&E visits and hospital admissions. For example, Romley and colleagues attributed air pollutants to asthma-related hospital events in California, and determined that "Meeting federal clean air standards would have prevented an estimated 29,808 hospital admissions and ER visits throughout California over 2005–2007." The US Environmental Protection Agency sets daily PM2.5 and PM10 limits at 35µg/m³ and 150µg/m³ respectively, compared to WHO daily PM2.5 and EU daily PM10 limits of 25µg/m³ and 50µg/m³ respectively. A paper commissioned by the Lancet in 2017 highlighted a disproportionately increased prevalence of asthma and other respiratory diseases among children in communities where all-diesel bus depots were located and where buses idled their engines for long periods while emitting pollutants. These were predominately minority and mostly disadvantaged neighbourhoods.

**Commentary on Cleaner Air for Scotland (CAFS)**

We support the effort to improve air quality in Scotland and the fact that the air quality objectives are more ambitious than the rest of the UK. Specifically, Scotland has an annual PM2.5 objective of 12µg/m³ in Scotland compared to the objective of 25µg/m³ for the UK overall. However, significantly more action is required and quickly to ensure Nitrogen Oxide (NOx), PM10 and PM2.5 emissions comply with EU regulations by 2020. The KPIs identified appear to be appropriate, though the monitoring the % change and/or comparison to the national average could prove to be limiting. Areas with lower than average emissions should still be encouraged to reduce emissions. A comparison to the average in this case could breed complacency and put the health of people with asthma at risk as well as lead to the onset of asthma in others. Additionally, the potential use of sunset periods for Low Emissions Zones or phased implementation such as the example of Germany (used in the CAFS), threaten to delay the compliance date if conducted over many years. Delays to the compliance date prolong the risk of potentially life-threatening asthma attacks.

We support the encouragement of behaviour that helps to cut air pollution, such as limiting use of older, high emission vehicles as well as switching to electric vehicles. However, these vehicles will also emit particulate matter through brake and tyre wear and tear even if exhaust-related emissions are reduced. A reduction in the number of all types of cars is necessary to further lower the health risks posed by particulate matter.

We are also in favour of an effort to increase the share of cycling, walking and public transport journeys in the overall modal split and think that much can be learned from other cities around the world which have introduced measures to achieve this:

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9 [https://www.epa.gov/criteria-air-pollutants/naaqs-table](https://www.epa.gov/criteria-air-pollutants/naaqs-table)
Copenhagen

To increase the number of journeys made by bike (relative to by car) in Copenhagen the city worked to promote cycling over private car use. It did so by making cycling easier, faster and safer as well as introducing a sales tax of up to 180% on new cars\(^{14}\), to encourage people to purchase smaller, more fuel-efficient cars. The number of bicycles (which is measured by electronic bike counters) in Copenhagen exceeds the number of cars in the city\(^{15}\). The Danish Ecological Council estimates that the increase in the number of commuters opting for bicycles has resulted in approximately a 14\% drop in PM\(_{10}\), 6\% drop in PM\(_{2.5}\) and a 18\% decrease in NO\(_{2}\)\(^{16}\). Additionally, Copenhagen residents were invited to highlight areas, on an online map, where bicycle lanes were missing, too narrow or heavily congested. Over 10,000 people shared their views demonstrating the role that public involvement and engagement can play in making a concerted effort to reduce private car use. Copenhagen has also invested heavily in its public transport infrastructure to create ease of movement between different types of public transport.

Singapore

To deter private car use, and encourage use of public transport, Singapore introduced road pricing. This involves a charge for cars with less than 4 passengers to enter the city centre. Now, it has evolved into an electronic road pricing system with a cash card in the front windscreen which is debited when they drive into the charge zone\(^{17}\). Singapore also encouraged public engagement to foster a sense of environmental ownership through annual Community and Youth for the Environment days and private sector partnerships\(^{18}\).

Joint Health Protection Plans

NHS Boards and local authorities’ Joint Health Protection Plans’ emphasis varies from area to area, with some merely acknowledging that it falls within their remit, and others clearly identifying the risks it poses to health and promoting Air Quality Management Areas. Further, there appears to be variation at council level, with some more actively addressing air quality concerns than others. We would recommend a more uniformed response which would help to avoid health inequality caused by poor air quality.

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\(^{16}\) The Danish Ecological Council. “Clean Air Copenhagen – Air Quality challenges and solutions.” (2014)  