

Air Quality and Health:

Professor Frank Kelly
Environmental Research Group
King's College London

Ealing air pollution event, St Mary's Church
30th October 2016



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London Evening Standard

Friday 14 April 2014

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The Silicon 60

A three-part look at the capital's aristocracy in our technology start-up hotlist

Day one
Pages 20 & 21



MPs CONDEMN FAILURE TO TACKLE DEADLY POLLUTION BLACKSPOTS

LONDON'S INVISIBLE KILLER ... THE AIR WE BREATHE

EXCLUSIVE
Nicholas Cecil Deputy Political Editor

MPs are to launch a new inquiry into air quality in London amid warnings that thousands of people are dying prematurely from the "invisible killer" of pollution, the Standard reveals today.

Just days after strong and fatal air sand hit the capital, MPs condemned the "pathetically slow" progress in tackling pollution blackspots.

The Commons environmental audit committee will investigate why City Hall and the Government have

not made more effort to improve air quality since 2010 when the MPs published an earlier report on pollution.

"Thousands of Londoners are having their lives shortened every year by diesel fumes and tiny particles of tyre and road. Look out across the capital on a sunny day and you can see the smog badly smothering the city," said chairwoman Joan Walley.

"The Environmental Audit Committee warned four years ago that urgent action was needed to tackle this invisible killer haunting our streets. London was

Continued on page 4



OW-ZAT! WHO NEARLY BOWLED KATE OVER?

REPORT AND PICTURES: PAGES 6 & 7

Labour has poll lead in capital's elections

PAGE 2



Matisse Nudes are back together at Tate

PAGE 9

Holiday PM holds Ukraine talks with leaders

PAGES 10 & 11

Flash boy traders warned of tough EU crackdown

PAGES 2 & 3



Does your health insurer give you cash back for being a non-smoker? Mine does.

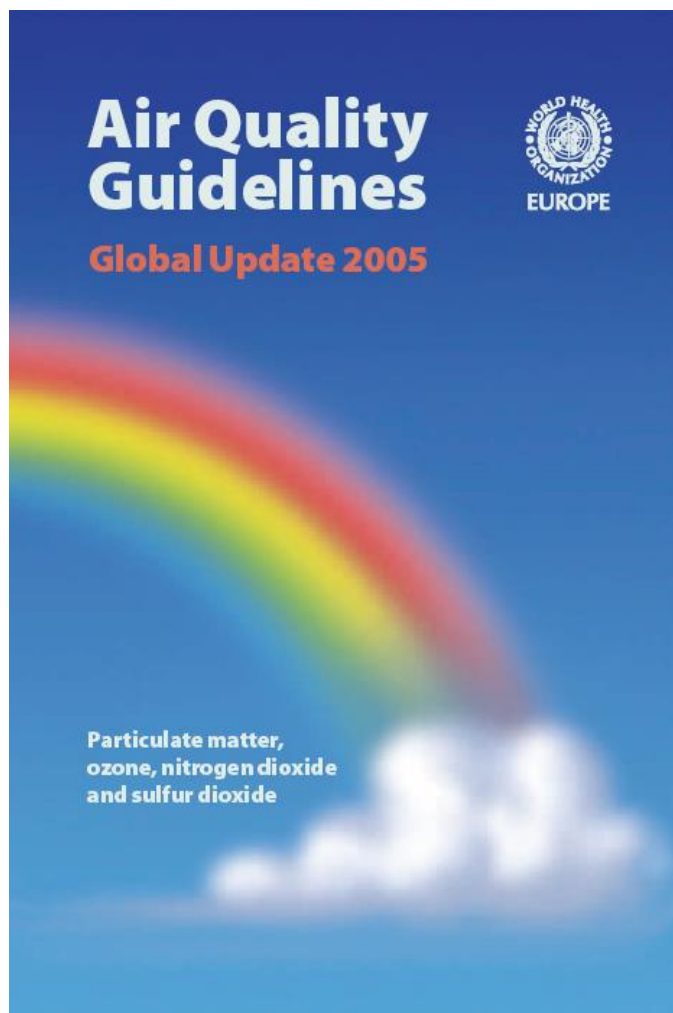
CALL 0800 231 5781

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VISIT MRHEALTH.CO.UK

IT'S MRHEALTH... *with*

Air pollutants



Particulate matter (PM)

Nitrogen dioxide (NO₂)

Ozone (O₃)



*The Mortality Effects of
Long-Term Exposure to
Particulate Air Pollution
in the United Kingdom*

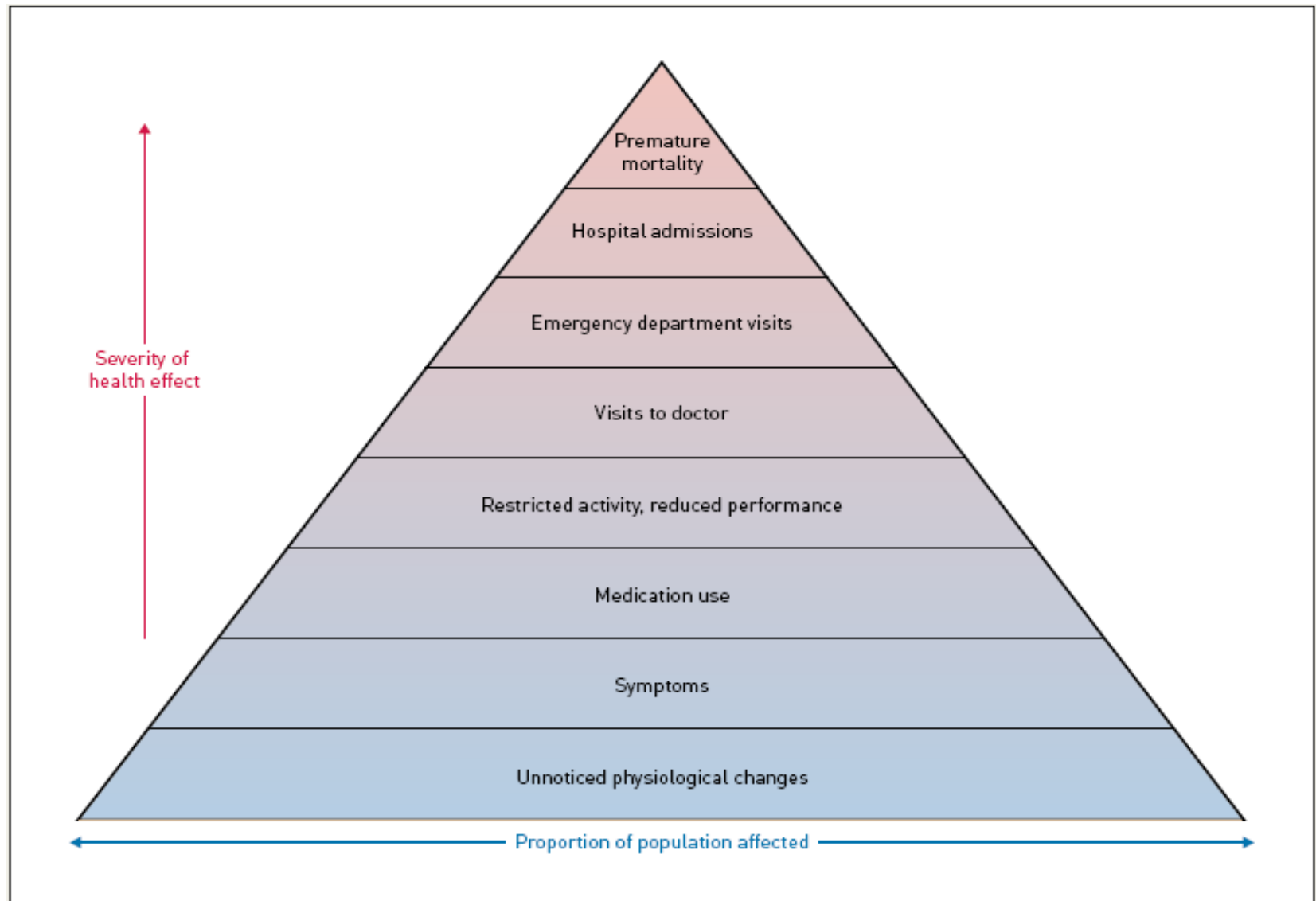
A report by the
Committee on the
Medical Effects of
Air Pollutants

Across the UK poor air quality.....

- equivalent of 29,000 premature deaths due to breathing tiny particles released into the air (in 2008 data)
- the average loss of life was 6 months, (although the actual amount varies between individuals, from a few days to many years)

Published December 2010

Impact of air pollution on health



In urban areas traffic is the main source of 'modern' air pollution - tiny particles & nitrogen dioxide



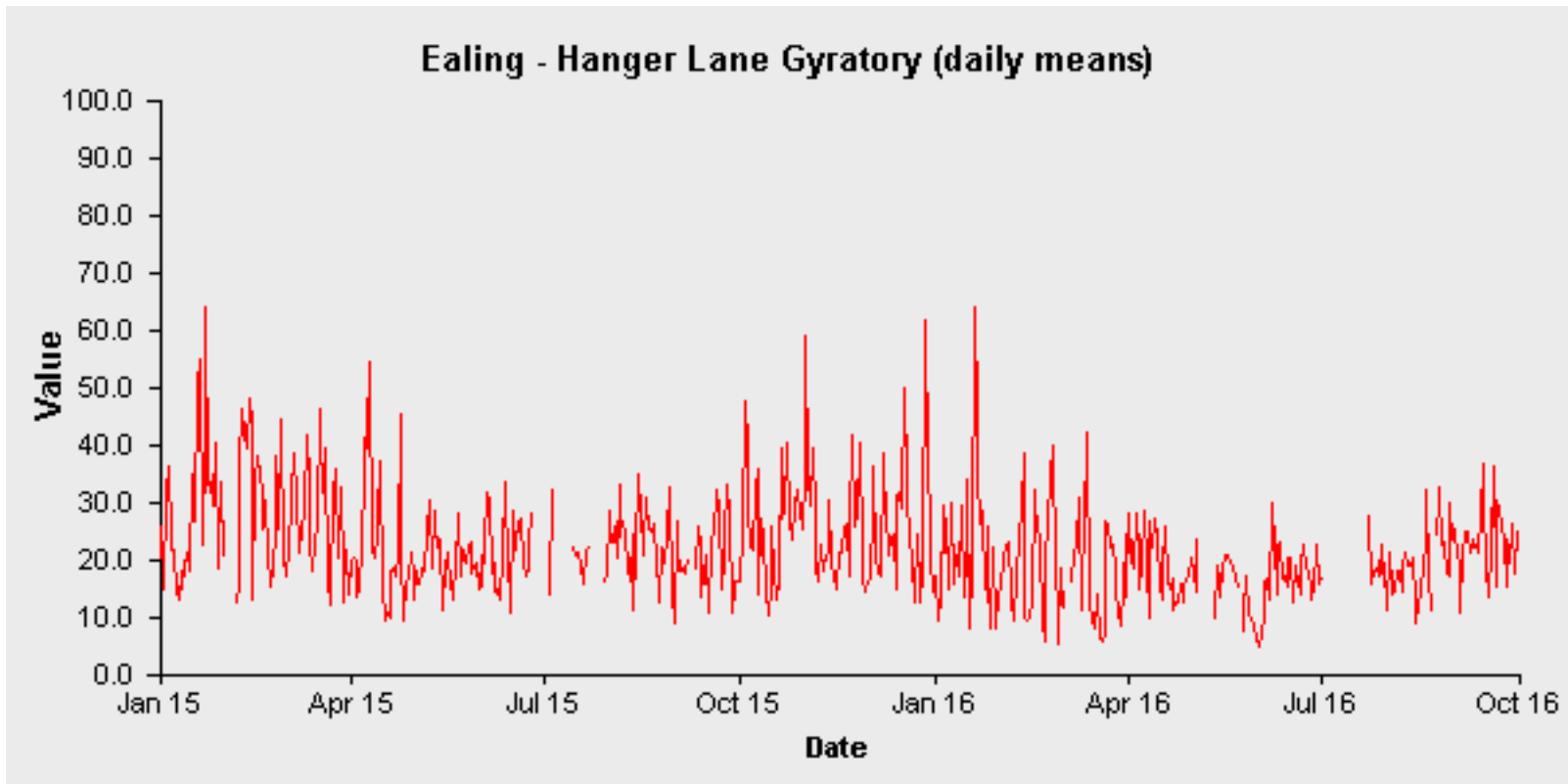


London
Streets

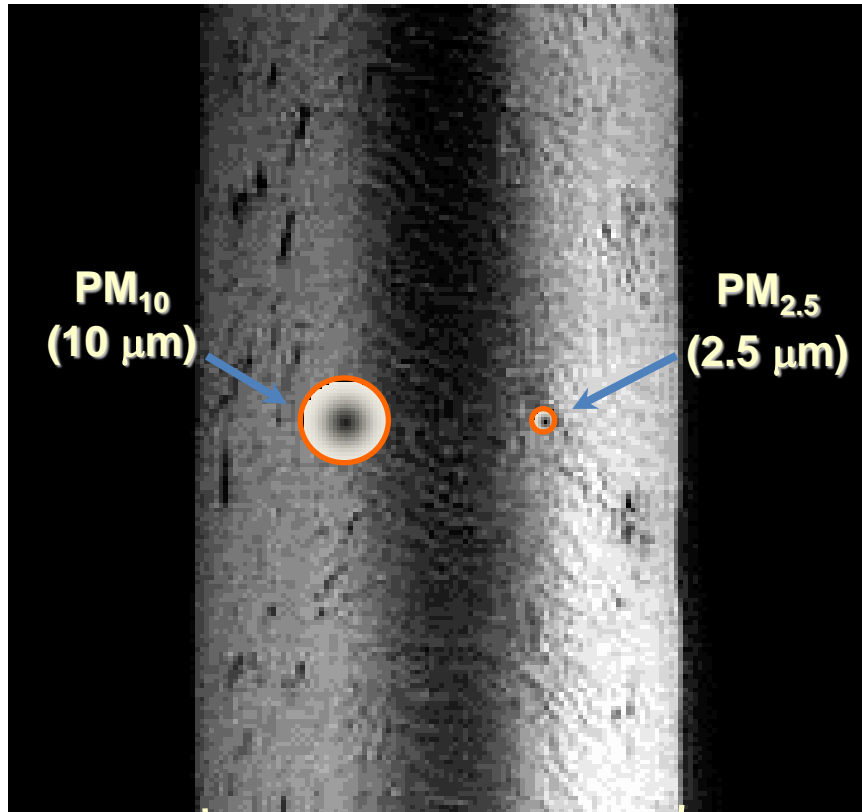
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A40/Hanger Lane Tunnel

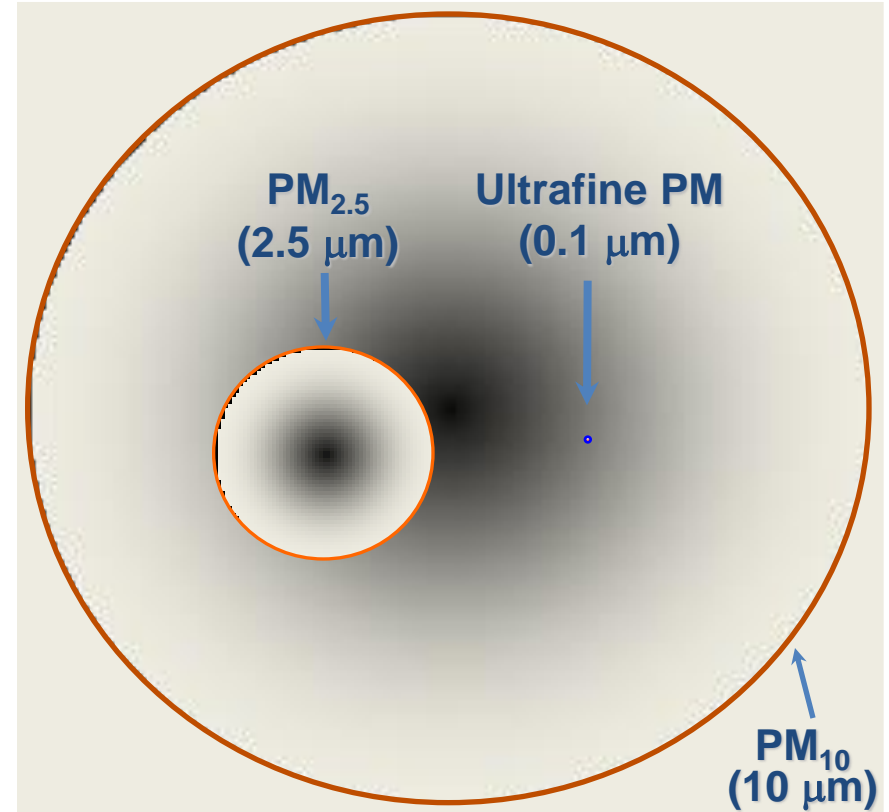
Hanger lane - PM10



Size is important.....

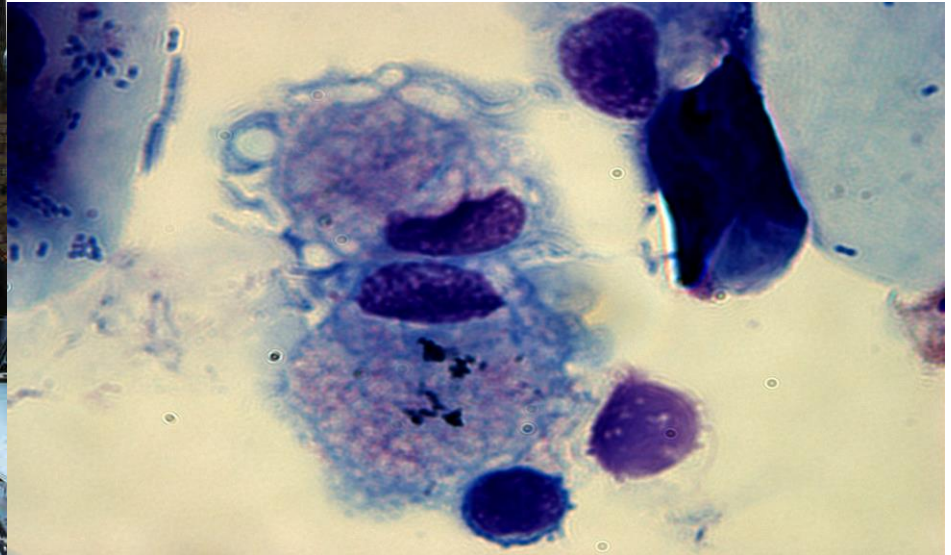


**Human Hair
(60 μm diameter)**



Relative size of particles

Healthy Human - Controlled Diesel Exhaust Exposures



Macrophage black carbon content in children



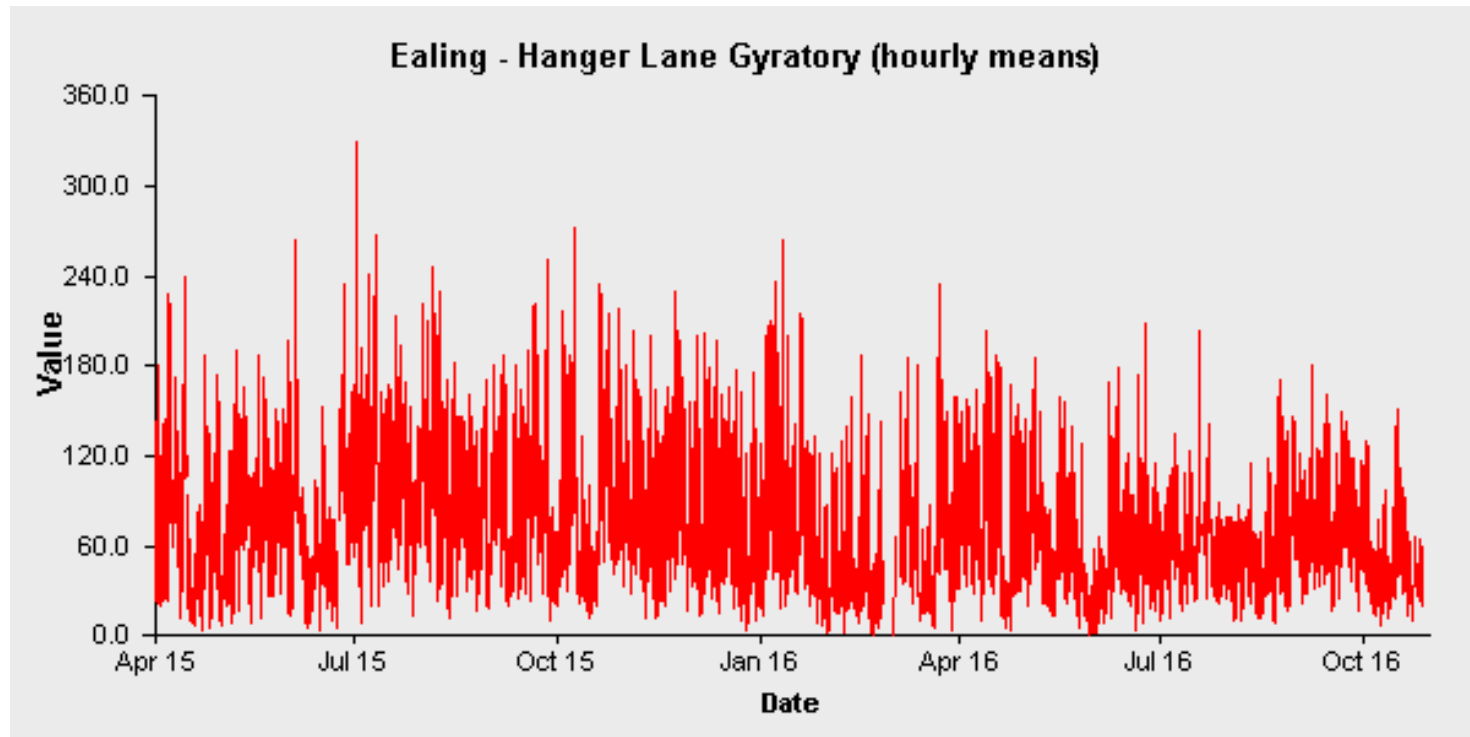


London
Streets

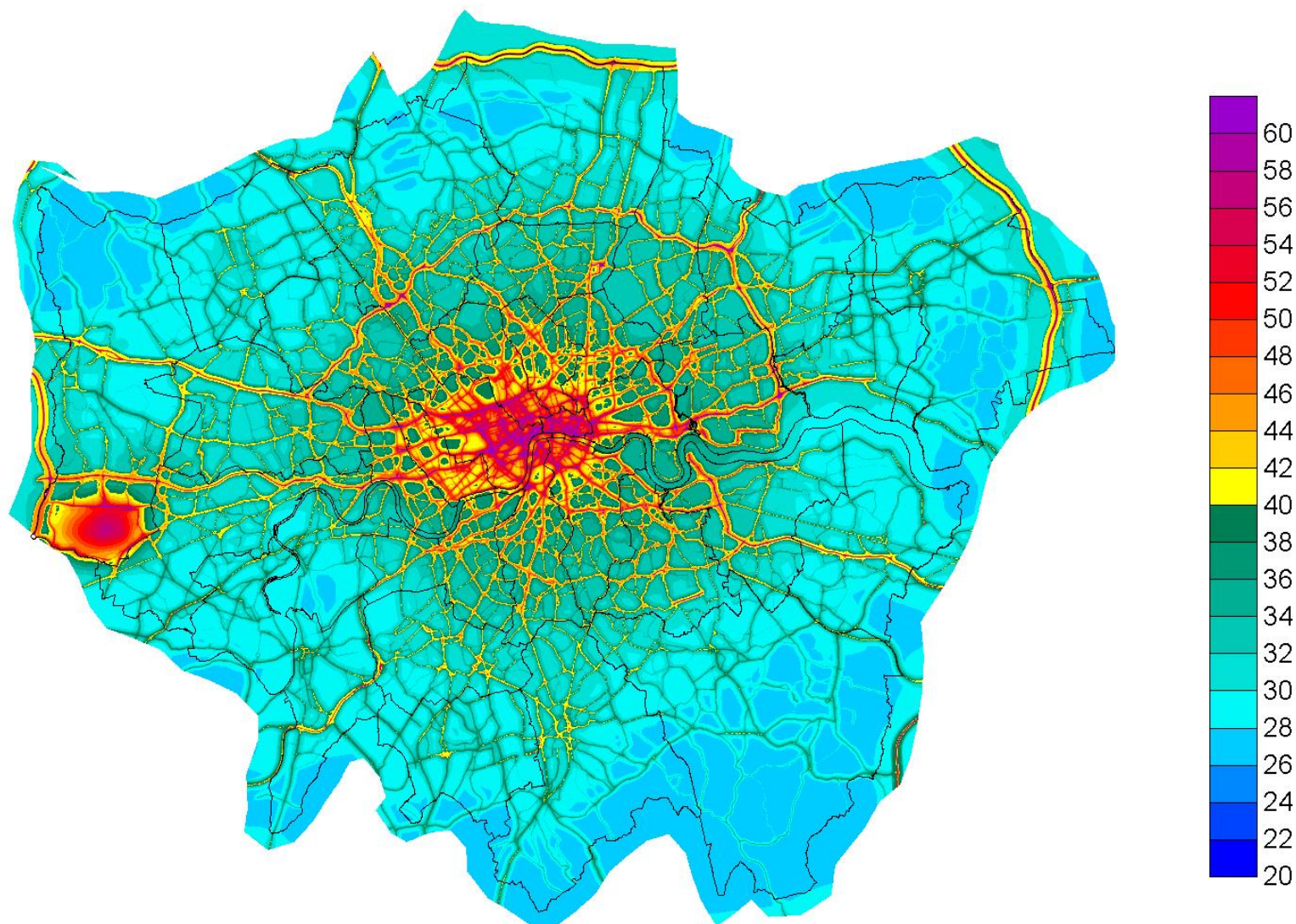
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A40/Hanger Lane Tunnel

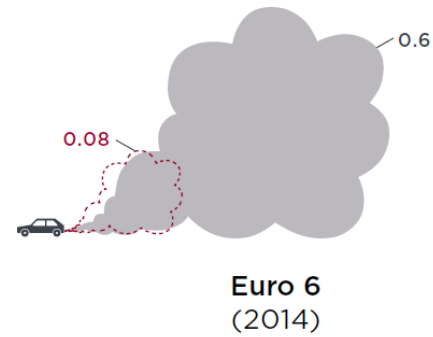
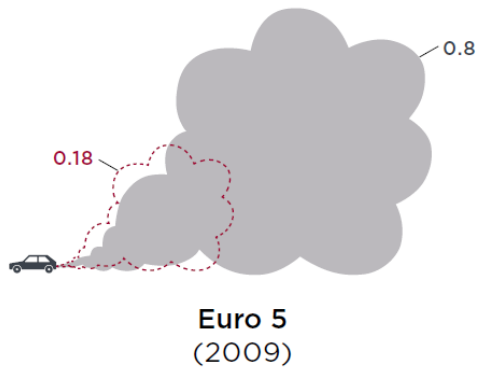
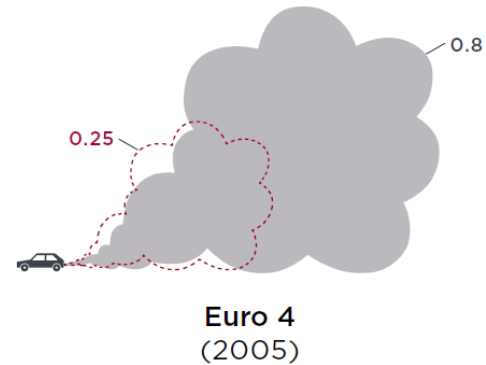
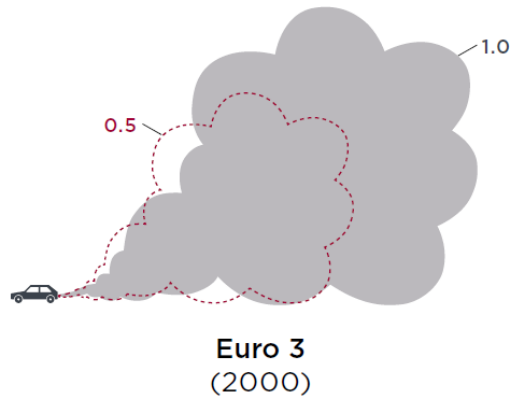
Hanger lane – nitrogen dioxide



London: annual NO₂ concentration surface



Diesel cars: Nitrogen oxide (NO_x) emissions (in g/km)



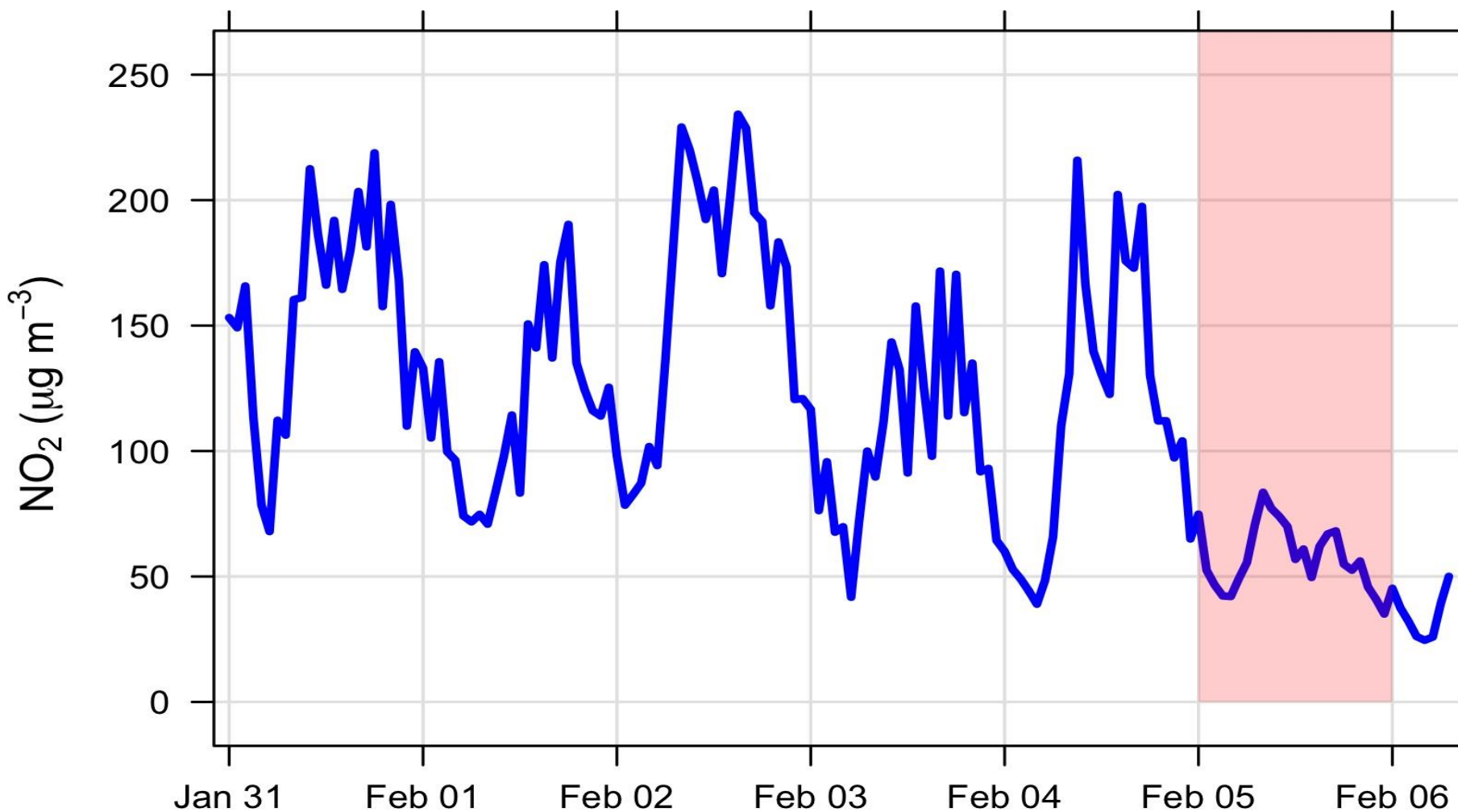
■ On-road measured value (Carslaw, 2011)/(ICCT, 2014e)
--- Euro emission limit

Oxford Street



Photograph: Justin Kase/Alamy

NO₂ concentrations on Oxford Street during the week of the February 2015 bus strike

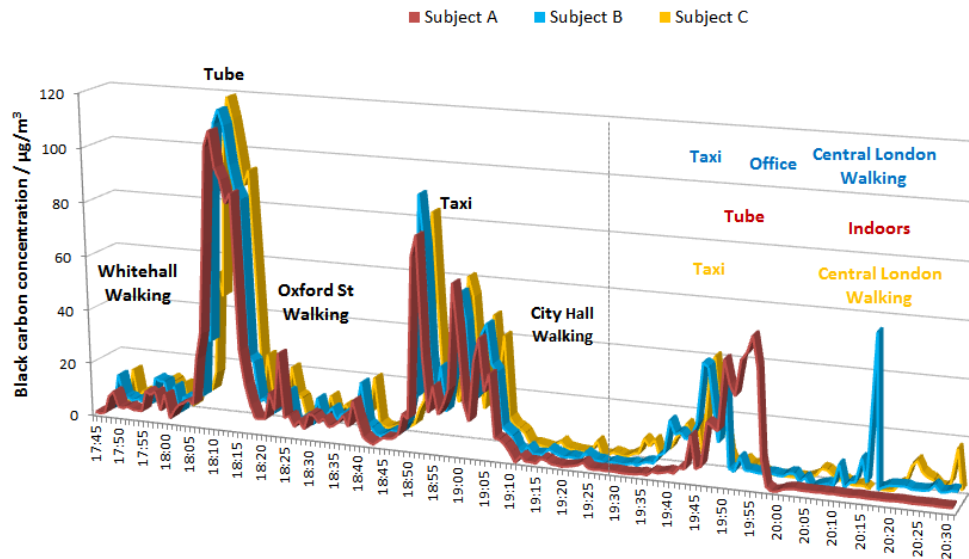


Political interventions are important



Environmental audit committee

Examined what the Government is doing about air quality in 2009, 2011 and again in 2014.



**EU
AIR QUALITY
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**BORIS'S ULTRA-LOW EMISSION ZONE
LONDON 2020**



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Davey

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